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Re-evaluation Decision

RVD2025-02

Methyl Bromide and Its Associated End-use Products

Final decision

(publié aussi en français)

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Re-evaluation Decision for Methyl Bromide and Associated End-Use Products

Under the authority of the *Pest Control Products Act*, all registered pesticides must be re-evaluated by Health Canada's Pest Management Regulatory Agency (PMRA) to ensure that they meet current health and environmental standards and have value. The re-evaluation considers data and information from pesticide manufacturers, published scientific reports and other regulatory agencies, as well as comments received during public consultations. Health Canada applies internationally accepted risk assessment methods as well as current risk management approaches and policies.

Methyl bromide is classified as an ozone-depleting substance (ODS) under the *Montreal Protocol on Substances that Deplete the Ozone Layer* (Montreal Protocol). Canada is a Party to the Montreal Protocol, and has committed to specific international obligations pertaining to the consumption (import) and use of methyl bromide. The Ozone Depleting Substances and Halocarbon Alternatives Regulations (ODSHAR), established under the authority of the *Canadian Environmental Protection Act, 1999*, implement Canada's international obligations under the Montreal Protocol, including those for methyl bromide. Under the ODSHAR, the import, export and certain uses of methyl bromide are prohibited without an authorization issued by Environment and Climate Change Canada (ECCC). This final re-evaluation decision will discuss the status of methyl bromide in Canada as a pest control product under the *Pest Control Products Act*.

Methyl bromide is a broad-spectrum fumigant, effective as an insecticide, acaricide, fungicide, animal toxicant, molluscicide, nematocide, and herbicide. Under the *Pest Control Products Act*, it is registered for general space fumigation of structures (for example, warehouses, grain elevators, food processing plants, restaurants) and enclosed space fumigation (in other words, chamber/vault; vacuum chamber; transport vehicles and gas tight covering (tarpaulin) fumigation) and applied to empty structures or to treat stored food/feed and non-food/non-feed commodities. Methyl bromide is also registered as a pre-plant soil fumigant for ornamental and forest nurseries and tomatoes.

Fumigation with methyl bromide is generally prohibited unless the specific use meets the definition of a quarantine or pre-shipment (QPS) application under the ODSHAR (see [Appendix II](#)) and the import and export of methyl bromide always requires an authorization issued by ECCC. Additionally, registered uses of a pest control product containing methyl bromide that do not meet the definition of a QPS use, for example, pre-plant soil fumigation uses, also require an authorization under the ODSHAR issued by ECCC. Any use of a pest control product containing methyl bromide must also be registered under the *Pest Control Products Act*.

Currently registered products containing methyl bromide can be found in the Pesticide Product Information Database and in Appendix I. The Proposed Re-evaluation Decision PRVD2024-03, *Proposed Re-evaluation Decision for Methyl Bromide and Its Associated End-use Products*¹ containing the evaluation of methyl bromide and proposed decision, underwent a 90-day consultation period ending on 26 June 2024.

Health Canada received comments but they did not relate to the health, environmental or value assessments. Commenters are listed in Appendix III. These comments are summarized in Appendix IV along with the responses by Health Canada. These comments did not result in revisions to the risk assessments, and did not result in changes to the proposed re-evaluation decision as described in PRVD2024-03.

A reference list of information used as the basis for the proposed re-evaluation decision is included in PRVD2024-03; no further information was used in the final re-evaluation decision. Therefore, the complete reference list of all information used in this final re-evaluation decision is set out in PRVD2024-03.

This document presents the final re-evaluation decision² for the re-evaluation of methyl bromide, including the required risk mitigation measures to protect human health and the environment, as well as label amendments required to bring labels to current standards. All products containing methyl bromide that are registered in Canada are subject to this re-evaluation decision.

Re-evaluation decision for methyl bromide

Health Canada has completed the re-evaluation of methyl bromide. Under the authority of the *Pest Control Products Act*, Health Canada has completed all required evaluations and consultations and has determined that the registration of products containing methyl bromide is required to be amended, in accordance with paragraph 21(2)(a) of the *Pest Control Products Act*. An evaluation of available scientific information for methyl bromide found that certain uses of methyl bromide products meet current standards for protection of human health and the environment and has acceptable value when used according to the amended conditions of registration which includes new mitigation measures. Label amendments, as summarized below and listed in Appendix V and VI, are required. However, the registration is required to be amended to cancel pre-plant soil fumigation uses of methyl bromide since the registered uses do not meet the criteria for a QPS application under the ODSHAR, and it is no longer used as a pre-plant soil fumigant for the uses found on the currently registered label of Terr-O-Gas 67 pre-plant soil fumigant (Reg. No. 13477) (in other words, ornamental and forest nurseries, and tomatoes).

¹ “Consultation statement” as required by subsection 28(2) of the *Pest Control Products Act*.

² “Decision statement” as required by subsection 28(5) of the *Pest Control Products Act*.

Risk mitigation measures

Registered pesticide product labels include specific directions for use. Directions include risk mitigation measures to protect human health and the environment and must be followed by law. The required amendments, including any revised/updated label statements and/or mitigation measures, as a result of the re-evaluation of methyl bromide, are summarized below. Refer to Appendix V and VI for details.

Value

- Label amendments to use directions for clarity and consistency, including improved instructions for monitoring temperature and methyl bromide concentrations during treatment; and development of a “Fumigant Usage Form” to improve record keeping.
- Cancellation of pre-plant soil fumigation uses of methyl bromide and the registration of the associated product, Terr-O-Gas 67 pre-plant soil fumigant (Reg. No. 13477).

Human health

To protect human health, the following risk-reduction measures are required:

- Updated personal protective equipment (PPE) statements to bring the product labels up to current standards.
- Reduction of methyl bromide exposure limit from 3.0 ppm to 1.0 ppm.
- New respiratory protection requirements based on the results of real-time air monitoring and/or anticipated maximum entry times in the fumigation site.
- As part of the requirements for restricted-class products and fumigants:
 - All employees of facilities or agricultural establishments using methyl bromide who are present during methyl bromide use must complete mandatory annual site- and product-specific training before fumigation is conducted.
- Fumigation management plans (FMPs) must be completed prior to each fumigation application.

To protect the general public and bystanders, the following risk-reduction measures are required for methyl bromide:

- Buffer zones during treatment of commodities or structures and when they are being aerated.
- As part of the updates to all commodity fumigant labels:
 - New air monitoring and distribution of fumigation information for all “difficult to evacuate sites” located within an estimated 16 meters beyond the perimeter of the treatment and aeration buffer zones.
 - Updated placarding statements for treatment areas and buffer zone perimeters.

- Updated statements indicating that this product is NOT to be used in residential structures or public food service facilities (such as public restaurants). Residential structures include, but are not limited to, homes, garages, schools, restaurants, hotels/motels, public buildings or other structures where the general public including children may potentially be exposed.

Environment

- Additional and updated precautionary statements to bring labels up to current standard.

Other label updates

- Emphasis that the registered methyl bromide product is to be used for control of pests for quarantine and pre-shipment fumigation only as defined under ODSHAR.
- Clarification of a critical use and an emergency use including the scenarios in which they are permitted under the ODSHAR.

Implementation of the re-evaluation decision

Regulatory Directive DIR2018-01, *Policy on Cancellations and Amendments Following Re-evaluation and Special Review* provides information and general timelines regarding the implementation of post-market decisions, (in other words, up to 24-month timeline for label amendments and up to 36-month phase-out timeline for cancelled registrations), and *Information Note: update on implementation of post-market decisions* provides additional information on phase-out measures for post-market decisions that include cancellations. The post-market decision considers potential health and environmental risks regarding the use of the pest control product, and its value, when establishing the implementation timelines.

The health considerations for the implementation timeline and the value considerations for the cancellation timeline for this final decision are outlined below.

Health considerations

Potential and relative health risks are considered acceptable during the general 24-month implementation period unless there is evidence from incident reports or other sources of real-world post-market surveillance data suggesting that there are adverse health effects occurring as a result of the use of the product(s) according to the currently approved label/use conditions. Taking into consideration these factors, the general 24-month implementation timeline for label amendments for methyl bromide is considered appropriate from a human health perspective. Therefore, the required label updates will be implemented within 24 months following the publication of the re-evaluation decision document.

Value considerations

It was determined that pre-plant soil fumigation uses cannot meet the definition of a QPS application under the ODSHAR. Additionally, information from stakeholders indicated that methyl bromide is no longer used as a pre-plant soil fumigant for the registered uses found on the label in Canada (in other words, ornamental and forest nurseries and tomatoes). On this basis, the

end-use product Terr-O-Gas 67 Preplant Soil Fumigant (Reg. No. 13477; 67.0% methyl bromide; only registered for pre-plant soil fumigations) will be cancelled immediately under the authority of paragraph subsection 21(2)(b) of the *Pest Control Products Act* as of the date of this decision document with no phase-out period. No manufacture, importation, possession, handling, storage, distribution, sale and use is permitted after the re-evaluation decision date as per paragraph 21(5)(a) of the *Pest Control Products Act*. For the cancelled uses, the following possible alternative fumigants were identified: chloropicrin, metam-potassium, metam-sodium, and Oriental mustard seed meal.

Amendment and cancellation timeframes

Based on the above considerations, the required amendments (mitigation measures and label updates) for pest control products containing methyl bromide must be implemented within 24-months from the date of this decision document. In addition, certain registrations of pest control products containing methyl bromide are cancelled as of the date of this decision document.

Refer to Appendix I for details on specific products impacted by this decision.

Next steps

To comply with this decision, the required amendments (mitigation measures and label updates) must be implemented on all product labels no later than 24 months after the publication date of this decision document. Accordingly, both registrants and retailers will have up to 24 months from the date of this decision document to transition to selling the product with the newly amended labels. Similarly, users will also have the same 24-month period from the date of this decision document to transition to using the newly amended labels, which will be available on the Public Registry.

Refer to Appendix I for details on specific products impacted by this decision.

The registration of the product Terr-O-Gas 67 pre-plant soil fumigant (Reg. No. 13477) is cancelled and expires as of the date of this decision and is no longer authorised for sale or use as of the date of this document.

Other information

Any person may file a notice of objection³ regarding this decision on methyl bromide and its associated end-use products within 60 days from the date of publication of this Re-evaluation Decision. For more information regarding the basis for objecting (which must be based on scientific grounds), please refer to the Pesticides and pest management section of the Canada.ca website (Public Engagement Portal - Public Engagement Forms - Notice of Objection) or contact PMRA's Pest Management Information Service.

³ As per subsection 35(1) of the *Pest Control Products Act*

The relevant confidential test data on which the decision is based (as referenced in PRVD2024-03) are available for public inspection, upon application, in PMRA's Reading Room. For more information, please contact Health Canada's Pest Management Information Service.

List of abbreviations

%	percent
°C	celsius
APR	Air-purifying respirator
B.C.	British Columbia
CEPA	<i>Canadian Environmental Protection Act, 1999</i>
CFIA	Canadian Food Inspection Agency
CFTR	Cargo, Fumigation and Tackle Regulations
CPN	Chloropicrin
CSA	Canadian Standards Association
ECCC	Environment and Climate Change Canada
FMP	Fumigation Management Plan
IDLH	Immediately Dangerous to Life or Health
kg	kilogram
LOD	Limit of Detection
m	metre
m ³	cubic metre
MBR	Methyl bromide
NIOSH	National Institutes for Occupational Safety and Health
ODS	ozone depleting substance
ODSHAR	Ozone Depleting Substances and Halocarbon Alternatives Regulations
OFM	Oriental Fruit Moth
PCPA	<i>Pest Control Products Act</i>
PMRA	Pest Management Regulatory Agency
PPE	Personal Protective Equipment
ppm	Parts per million
PRVD	Proposed Re-evaluation Decision
QPS	Quarantine and pre-shipment application
RVD	Re-evaluation Decision
SCBA	Self-Contained Breathing Apparatus
SDS	Safety Data Sheet

Appendix I Registered products containing methyl bromide in Canada¹

Table 1 Products containing methyl bromide requiring (label) amendments

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (% g/L)
9564	Restricted	Lanxess Corporation	METH-O-GAS Space Fumigant	Liquid	MBR 100%
18613	Technical Grade Active Ingredient	Lanxess Corporation	Methyl Bromide	Liquid	MBR 99.96%

MBR = Methyl Bromide, CPN = Chloropicrin

¹as of 21 January 2025, excluding discontinued products or products with a submission for discontinuation

Table 2 Products containing methyl bromide cancelled as a result of re-evaluation

Registration number	Marketing class	Registrant	Product name	Formulation type	Active ingredient (% g/L)
13477	Restricted	Lanxess Corporation	TERR-O-GAS 67 Preplant Soil Fumigant	Liquid	MBR 67%, CPN 32.7%

MBR = Methyl Bromide, CPN = Chloropicrin

¹as of 21 January 2025, excluding discontinued products or products with a submission for discontinuation

Appendix II Uses of methyl bromide defined in ODSHAR, established under CEPA, 1999.

Quarantine application (QPS) is defined as the treatment with methyl bromide of a commodity, product, facility or means of conveyance, when the treatment is intended to prevent the spread of, or to control or eradicate, pests of quarantine significance in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a quarantine application.

Pre-shipment application (QPS) is defined as the treatment with methyl bromide, within 21 days prior to export, of a commodity or a product that is to be entirely exported to another country, or of a means of conveyance, in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a pre-shipment application.

Critical uses are defined as a use of methyl bromide that conforms to Decision IX/6, set out in the document entitled Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, published by the Ozone Secretariat, United Nations Environment Programme. Under Decision IX/6, a use of methyl bromide may qualify as “critical” if the lack of availability of methyl bromide for that use would result in a significant market disruption and there are no technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of the environment or human health. Permits issued under the ODSHAR are required to authorize the import and the use of methyl bromide for a critical use. A critical use of a pest control product containing methyl bromide must also be registered under the *Pest Control Products Act*.

Emergency use means a use of up to 20 tonnes of methyl bromide, in response to an emergency event, that conforms to Decision IX/6 set out in the document entitled *Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer*, published by the Ozone Secretariat, United Nations Environment Programme. Permits issued under the ODSHAR are required to authorize the import and the use of methyl bromide for emergency use. An emergency use of a pest control product containing methyl bromide must also be registered under the *Pest Control Products Act*.

Appendix III List of commenters to PRVD2024-03

List of commenters' affiliations for comments submitted in response to PRVD2024-03.

Category	Commenter
Agricultural	Westech Agriculture Ltd.
Agricultural	Canadian Fruit Tree Nursery
Business	Global Village Crafts Society
Public	General public

Appendix IV Comments and responses

Health Canada received five written comments during the public consultation for the methyl bromide proposed re-evaluation decision. Commenters' affiliations are listed in Appendix II. These comments were considered during the final decision phase of this re-evaluation. Summarized comments and Health Canada's responses to them are provided below.

1.0 Comment related to the environment

1.1 Comment – Use of Methyl Bromide in Canada

Members of the public commented that methyl bromide is an ozone depleting substance where its use in Canada should have been phased-out under the Montreal Protocol to prevent further damage to the ozone layer.

Health Canada response

The *Montreal Protocol on Substances that Deplete the Ozone Layer* is an environmental agreement that regulates the production and consumption of ozone depleting substances (ODS) which includes methyl bromide. Canada, as a Party to the Montreal Protocol, has specific international obligations pertaining to the consumption (import) and use of methyl bromide. The Ozone Depleting Substances and Halocarbon Alternatives Regulations (ODSHAR), established under the authority of the *Canadian Environmental Protection Act, 1999*, implement Canada's international obligations under the Montreal Protocol, including those for methyl bromide. Quarantine and Pre-shipment (QPS) uses of methyl bromide, as defined under the ODSHAR, do not require a use authorization from Environment and Climate Change Canada (ECCC), as these uses are exempt from the international consumption and use obligations under the Montreal Protocol. QPS uses are phytosanitary treatments to control regulated/quarantine pests and pathogens on various traded goods, commodities, wood products, and other materials to ensure that pests and pathogens are not introduced or spread into a given country or territory. Regulated/quarantine pests and pathogens can be a biosecurity risk to the environment, agriculture and economy of a given country or territory. Phytosanitary and biosecurity measures such as, fumigation by methyl bromide, are put into place by each specific country or territory to prevent the introduction of regulated/quarantine pests and pathogens.

There are alternatives to many QPS applications of methyl bromide however, it is up each country or territory to adopt these alternatives as an option within their phytosanitary and biosecurity regulations for international trade.

Health Canada has cancelled all pest control uses of methyl bromide in Canada that do not fall under the definition of a QPS use as defined under the ODSHAR. QPS uses of methyl bromide are acceptable for continued registration with the implementation of additional required risk mitigation measures outlined in this re-evaluation decision.

2.0 Comments related to value

2.1 Comment - Pre-plant Soil Fumigation for Strawberry Runner Nursery Stock

Westech Agriculture Ltd. commented that pre-plant soil fumigation to strawberry runners using the end-use product, Terr-O-Gas 67 pre-plant soil fumigant (Reg. No. 13477), should be permitted because ornamental and forest nurseries are registered on the label and strawberry runners can be considered nursery stock under the oversight of the Canadian ornamental industry.

Health Canada response

For the assessment of pest control products, the PMRA developed groups of similar sites having common data requirements into specific use-site categories. These groups have been developed to guide applicants and registrants on the complete set of environmental, health and value data required to support an active ingredient and its end-use product(s) for use on a site included in a particular use-site category. These data requirements are not comparable to the categorization for economical or statistical purposes. As indicated on the pesticides section of Canada.ca, non-bearing stages of strawberries grown outdoors and their soil are considered Terrestrial Food Crops (use-site category 14). Therefore, the health, environmental and value data required to register strawberry runners is different than registering ornamental or forest nursery stock (use-site categories 27 and/or 4). For further information on use-site categories, refer to the Use-Site Category (USC) Definitions for Conventional Chemical Pesticides page on Canada.ca.

As strawberry runners are not registered on the Terr-O-Gas 67 pre-plant soil fumigant label, the use of methyl bromide on strawberry runners was not assessed in this re-evaluation. The registration of the end-use product Terr-O-Gas 67 pre-plant soil fumigant and associated pre-plant soil fumigation uses of methyl bromide are cancelled as a result of this re-evaluation decision.

2.2 Comment – Oriental fruit moth management in stone fruit tree movement into british columbia

Canadian Fruit Tree Nursery of stone fruit tree nursery stock commented on how Canadian Food Inspection Agency (CFIA) regulation to prevent the introduction of Oriental fruit moth (OFM) to British Columbia and the lack of alternative treatments to methyl bromide fumigation is impacting the stone fruit tree nursery industry. They noted phytotoxic effects on propagation materials (trees and seeds) from the required methyl bromide treatment to hardy stone fruit varieties that are produced outside of British Columbia which are unavailable to British Columbian growers. They encouraged seeking alternative treatments to allow for the importation of stone fruit trees into British Columbia and suggest treatment with systemic insecticides targeting OFM.

Health Canada response

Health Canada's PMRA recognizes the phytosanitary restrictions placed on the importation of stone fruit into British Columbia (CFIA directive D-99-04, *Systems Approach Based Oriental Fruit Moth Certification Program*). The domestic movement into British Columbia of regulated

articles is regulated under the *Plant Protection Act* and the Plant Protection Regulations through CFIA. While these phytosanitary restrictions do require stone fruit propagation materials to be fumigated, methyl bromide is not registered for this use in Canada. Therefore, the use of methyl bromide on stone fruit propagation materials was not assessed in this re-evaluation.

The PMRA recognizes that there is a need for alternative pesticides to treat stone fruit propagation materials. In order for PMRA to consider adding this use to a pesticide, an application to register or amend a registration, including supporting health, environment and value information, must be submitted by the manufacturer/registrant. Growers are encouraged to contact the manufacturer/registrant of alternative pesticides to submit an application to register their product for this use. All new applications will be processed according to the PMRA Guidance Document, *Management of Submissions Policy*.

3.0 Comment Related to Other Considerations

3.1 Comment – Importation requirements for Wood Products into Canada

Global Village Crafts Society commented that importation requirements for wood products into Canada from Africa are too restrictive for small businesses. This includes the requirement of fumigating the wood products with methyl bromide prior to exportation to Canada which small businesses in Africa cannot afford.

Health Canada response

The Canadian Food Inspection Agency (CFIA) is the regulating body of the phytosanitary requirements for the importation of wood products into Canada. These phytosanitary requirements are not regulated under the *Pest Control Product Act*. Further details can be found in the CFIA directive, D-02-12: *Phytosanitary import requirements for non-processed wood and other wooden products, bamboo and bamboo products, originating from all areas other than the continental United States*.

Appendix V Label amendments for products containing methyl bromide

The label amendments presented below do not include all label requirements for individual end-use products, such as first aid statements, disposal statements, precautionary statements and supplementary protective equipment. Information on labels of currently registered products should not be removed unless it contradicts the following label statements.

1.0 Label amendments for the technical grade active ingredient product

1.1 Label amendments relating to the value assessment

Change the classification from “RESTRICTED” to “TECHNICAL”.

1.2 Label amendments relating to the environmental assessment

Under the “PRECAUTIONS” section:

Amend the statement: “This product is toxic to fish and wildlife. Keep out of lakes, streams and ponds” to “Toxic to aquatic organisms.”

Add the statement: “DO NOT discharge effluent containing this product into sewer systems, lakes, streams, ponds, estuaries, oceans or other waters.”

Under the “DISPOSAL” section:

Replace the statement: “For information on the disposal of unused, unwanted product, contact the provincial regulatory agency or LANXESS Corporation (800- 949- 5167)...” with “Canadian manufacturers should dispose of unwanted active ingredients and containers in accordance with municipal and provincial/territorial regulations. For additional details and cleanup of spills, contact LANXESS Corporation (*Add Canadian contact telephone number*) and the provincial/territorial regulatory agency....”

2.0 Label amendments for the restricted-class end-use products containing methyl bromide

2.1 Label amendments relating to the value assessment

For the product with registered QPS uses (METH-O-GAS Space Fumigant, Reg No. 9564)

1. Use the entire name of the Product (i.e., METH-O-GAS Space Fumigant) throughout the label.
2. The resistance management symbol and statements must be updated to reflect those stated in Regulatory Directive DIR2013-04, *Pesticide Resistance Management Labelling Based on Target Site/Mode of Action*.
3. Amend the TABLE OF CONTENTS according to the changes outlined in the final RVD, including any page numbering.

4. Ensure that all major headers, sub-headers and sub-headers are clearly distinguishable from each other by changing the font characteristics (e.g., size, case, bold). All major headers must be in upper case and bold (e.g., **DIRECTIONS FOR USE**).
5. On the principal display panel of the label and brochure, remove “For use in the control of common insects and other arthropods, snails, snakes, microorganisms and rodents” and replace with: “For the control of certain pests in the listed sites and commodities, as specified in this label and brochure”.
6. On the principal display panel of the brochure, remove the statements:
 - “DIRECTIONS FOR USE OF THE PRODUCT” because it contains more than the use directions.
 - Remove the statement “Fumigants - Equipment – Insecticides”.
7. At the top of the secondary display panel of the label, remove the statement:
“DIRECTIONS FOR USE

The following directions are of necessity, brief and general in nature. Consult the METH-O-GAS® label booklet MOG-BK-201122, or Great Lakes Chemical Corporation for further details. Dosages within the METH-O-GAS® label booklet MOG-BK-201122 refer to commodity temperatures of 21°C or above. If below 21°C increase dosage by 25%. Do not fumigate below 5°C.”

8. At the top of the secondary display panel of the label and brochure, amend/add the boxed section as follows:

NOTICE TO USER:

This pest control product is to be used only in accordance with the directions on the label. It is an offense under The Pest Control Products Act to use a control product in a way that is inconsistent with the directions on the label.

NATURE OF RESTRICTION:

ANY OF THE AUTHORIZED USES REGISTERED ON THIS LABEL AND BROCHURE UNDER THE PEST CONTROL PRODUCTS ACT MUST ALSO COMPLY WITH APPLICABLE REQUIREMENTS UNDER THE OZONE-DEPLETING SUBSTANCES AND HALOCARBON ALTERNATIVES REGULATIONS (ODSHAR) UNDER THE AUTHORITY OF THE CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA, 1999). This includes:

Quarantine Use: The treatment with methyl bromide of a commodity, product, facility or means of conveyance, when the treatment is intended to prevent the spread of, or to control or eradicate, pests of quarantine significance in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a quarantine application.

Pre-shipment Use: The treatment with methyl bromide, within 21 days prior to export, of a commodity or a product that is to be entirely exported to another country, or of a means of conveyance, in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a pre-shipment application.

Critical Use: A use of methyl bromide that conforms to Decision IX/6 set out in the document entitled Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, published by the Ozone Secretariat, United Nations Environment Programme. Permits issued under the ODSHAR are required to authorize both the import and the use of methyl bromide for critical use.

Emergency Use: A use of up to 20 tonnes of methyl bromide, in response to an emergency event, that conforms to Decision IX/6 set out in the document entitled Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, published by the Ozone Secretariat, United Nations Environment Programme. Permits issued under the ODSHAR are required to authorize both the import and the use of methyl bromide for emergency use.

FOR FURTHER INFORMATION ON QUARANTINE AND PRESHIPMENT USES, CONTACT CANADIAN FOOD INSPECTION AGENCY.

FOR FURTHER INFORMATION ON ODSHAR, CEPA, IMPORTATION, CRITICAL USES AND EMERGENCY USES, CONTACT ENVIRONMENT AND CLIMATE CHANGE CANADA.

In addition, fumigation on a Canadian vessel or on a foreign vessel that is in Canadian waters is governed by the Cargo, Fumigation and Tackle Regulations (SOR/2007-128; CFTR) created under the Canada Shipping Act, 2001. Refer to and comply with those Regulations prior to fumigation. In Canada, fumigations must be carried out under the direction of a “fumigator-in-charge” as indicated in these regulations. DO NOT apply to residential vessels (e.g., private vessels, cruise ships).

Methyl bromide is a neurotoxic gas that can cause severe respiratory issues, convulsions, coma, long-term harm to the nervous system or death.

This product is only to be sold to and used by individuals holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the pesticide application is to occur. This product may be used by individuals trained in accordance with the brochure working under the direct supervision and in the physical presence of an applicator holding an appropriate pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the pesticide application occurs. Consult local pesticide regulatory authorities about use permits which may be required.

This product has an approved label and brochure. **READ AND UNDERSTAND THE ENTIRE LABEL AND THE ATTACHED/ACCOMPANYING BROCHURE.** All parts of the label and brochure are equally important for safe and effective use of this product. Contact the registrant if you have any questions or do not understand any part of this label and brochure.

This fumigant is a highly hazardous material and must be used only by individuals knowledgeable about the hazards and trained in its proper use. At least two persons, a licensed/certified applicator, and a person trained in accordance with the label and attached brochure working under direct supervision of the licensed/certified applicator, must be present during the treatment period, at the initiation of aeration, and when testing for re-entry to the treatment area. All fumigation handlers must be under direct on-site supervision of the certified/licensed applicator at the start of the fumigation, at the initiation of aeration, when testing for re-entry into the treatment area, until the commodity/structure is fully aerated (methyl bromide concentrations are ≤ 1.0 ppm). Only one fumigation handler needs to be present if monitoring is conducted remotely (from outside the treatment area).

Persons working with methyl bromide must be trained in the use of required respiratory equipment and detector devices, emergency procedures, and use of the fumigant. In facilities where this product is used, all employees **MUST** complete mandatory annual training as outlined in the brochure’s “**Mandatory Annual Training**” section. Training includes information on the hazards of this product, the use of safety equipment (i.e., respiratory protection and personal monitors), and the exposure limit of 1.0 ppm. It is the responsibility of the certified/licensed applicator to inform the person in charge of the facility, where the fumigation will take place, of the requirement for the mandatory training.

You must carefully read and understand the accompanying use directions in the label and brochure in order to use METH-O-GAS® Space Fumigant. Observe all safety and precautionary statements as set forth in the in the label and brochure. All fumigation instructions, including the sites/commodities, pests, dosage, minimum treatment periods and minimum aeration periods are given in the brochure's "DIRECTIONS FOR USE" section.. Appropriate respiratory protection must be worn, as outlined in the brochure's "**Respirator Requirements and Work Time Restrictions**" section.

Only if necessary, should workers be present in the treatment and aeration buffer zones. All workers present in the buffer zones during the fumigation or aeration periods, **MUST** follow the requirements, as outlined in the brochure's "**Respirator Requirements and Work Time Restrictions**" section. Appropriate respiratory protection **MUST** be worn as outlined in the brochure's "**Respirator Requirements and Work Time Restriction**" section.

If at any time methyl bromide levels exceed the limit of detection of 0.5 ppm, all individuals who are not wearing respiratory protection or following the work time restrictions as outlined in the brochure's "**Respirator Requirements and Work Time Restrictions**" section must vacate the area until methyl bromide levels are at or below 0.5 ppm. Respirators may not be required at certain concentrations above 0.5 ppm depending on the work time restrictions

A treatment and aeration buffer zone must be established for all fumigated sites, refer to the brochure's "**Treatment & Aeration Buffer Zone Requirements**" section. Note that the term "fumigation site/application site" refers to the site under fumigation treatment. Placarding is required for both the fumigated site and the treatment and aeration buffer zone perimeters.

Large-scale fumigations may require one or more employees of the fumigator and/or other individuals under contract with the fumigator or the fumigated facility for this purpose be assigned to guard the fumigation site and the treatment and aeration buffer zones when entry by unauthorized persons cannot otherwise be reliably prevented. Refer to provincial/territorial pesticide regulations.

The fumigation site must first be inspected to determine if the treatment area can be made sufficiently gas-tight. Then a Fumigation Management Plan must be developed prior to actual fumigation to provide for safe and efficient application of the fumigant, to include emergency procedures, etc. and to decide how monitoring should be conducted to prevent excessive exposures (refer to the brochure's "**Site Specific Fumigation Management Plan**" section).

For emergencies or to escape from conditions which are Immediately Dangerous to Life or Health (IDLH), keep an adequate number of supplied air respirators (NIOSH approval number prefix TC-19C) or self-contained breathing apparatuses (SCBAs) (NIOSH approval number prefix TC-13F) for use by all workers.

Notify appropriate company employees prior to the fumigation and provide relevant safety information to local officials (fire department, police, etc.) for use in the event of emergency. Observe all provincial/territorial pesticide regulations.

AERATION AND RE-ENTRY:

See the brochure's "**Aeration Period**" section for instructions.

RESTRICTED USES:

The following directions are of necessity, brief and general in nature.

THIS PRODUCT IS TO BE USED for control of certain pests in the listed sites and commodities, as specified on this label and brochure. **DO NOT** apply to sites or commodities not listed in this label or brochure or that are specifically prohibited. This product is to be used for these purposes **ONLY IN** sites and commodities specified in the brochure's "DIRECTIONS FOR USE" section. Apply as a general space, enclosed space and gas-tight coverings fumigation. Follow all of the instructions identified for each site/commodity including the dosage,

ambient and commodity temperature, minimum treatment period and minimum aeration period found in the label and brochure. Refer to the “DIRECTIONS FOR USE” section of the label for further information.

Contact the registrant if you have any questions or do not understand any part of this label and brochure.

This box must appear on the top of the secondary panel and before the TABLE OF CONTENTS found in the brochure.

9. Under the DIRECTIONS FOR USE, remove: It is a violation of the P.C.P. Act to use this product in a manner inconsistent with its labelling. The standard statement is found in the NOTICE TO USER section.
10. Change the section title from “PRECAUTIONARY PROCEDURES” to “PRECAUTIONARY PROCEDURES FOR ALL USES” and under this section:
 - Remove the statement: “Do not fumigate below 5°C except in the case of Christmas tree fumigation (Table VI)”.
11. Under EFFECTIVE FUMIGATION, amend the header “Concentration Times Time Product” to “Concentration Times Time Product (C × T)”
12. Under EFFECTIVE FUMIGATION, add the following sub-section:

General:

Ensure that monitors (methyl bromide gas and temperature), application equipment, and data recording equipment are in good condition and calibrated in accordance with the manufacturer’s instructions. Use multiple methyl bromide gas and temperature monitors distributed throughout the treatment area and routinely monitored. The treatment area must be thoroughly sealed and gas-tight. Uniform flow of air throughout the treatment area (e.g., chamber, transport containers, rooms) is required for efficacy. The treatment area should not be loaded beyond 50–80% of its volume. Air deflectors, fans and spacers should be used to ensure adequate air flow within the treatment area. Readings from all methyl bromide gas and temperature monitors throughout the treatment period must be recorded as part of the treatment record. See “Effective Fumigation - Monitoring Methyl Bromide Concentrations” and “Effective Fumigation - Monitoring Temperatures” in this section of the brochure for more information.
13. Under EFFECTIVE FUMIGATION, amend the header “Monitoring Equipment” to “Monitoring Methyl Bromide Concentrations”.
14. Under EFFECTIVE FUMIGATION, add the following section:

Monitoring temperatures

Temperature is an important factor in the efficacy of METH-O-GAS® Space Fumigant. Both the commodity temperature and ambient air temperature must be monitored. Prior to fumigation, allow adequate time for both the commodity and the pest to acclimate to the temperature within the treatment area. Take the commodity and ambient air temperature readings at the start of fumigation, then continuously monitor both the commodity and ambient air temperature during fumigation. To maintain the temperature, it may be necessary to use external heat sources that do not have flames such as pilot lights or glowing elements

(e.g., infrared heaters). Use several temperature monitors placed at different points throughout the commodity and treatment area. For example, measure the temperature at the top, midway and bottom of the commodity. The minimum temperature must not be less than what is stated for the commodity or site as listed in the “Application Summary Tables” in Appendix 1 in this brochure. Do not use the average of all monitors to determine the dosage, the minimum treatment period and the minimum aeration period. Use the lowest temperature detected by any monitor within the treatment area to determine the dosage, the minimum treatment period and the minimum aeration period. Temperature readings from all monitors throughout the treatment period must be recorded as part of the treatment record. Contact the registrant for recommended commodity and ambient air temperature monitoring equipment.

For additional instructions on measuring wood and wood products, see “COMMODITIES PERMITTED TO BE TREATED - Wood and Wood Products - Measuring the Temperature of Wood Commodities Under Fumigation” section of this brochure.

15. Move the PEST CONTROLLED section to above the COMMODITIES PERMITTED TO BE TREATED section and add the following paragraph at the top of the section:
METH-O-GAS® Space Fumigant is a broad spectrum fumigant that controls insects and other arthropods, molluscs, nematodes, plant pathogens, weed seeds and vertebrates. This product may be used against pests of quarantine significance not specifically identified in this section of the brochure under the direction of the Canadian Food Inspection Agency. In these cases, the efficacy may not have been fully assessed for those specific pests. All applications must follow the instructions identified for the site and commodity including the dosage, ambient and commodity temperature, minimum treatment period and minimum aeration period in this brochure. DO NOT apply to sites or commodities that are prohibited and to those not listed in this brochure under the “GENERAL SPACE FUMIGATION” section and the “COMMODITIES PERMITTED TO BE TREATED” section along with the associated appendices.

Additionally, organize the pests by type as follows: Insects and Other Arthropods with further division (e.g., ants, beetles, etc.); Molluscs, Nematodes, Plant Pathogens, Weed Seeds and Vertebrates. For example:

Insects and other arthropods:

Ants, including carpenter ants

Beetles: alfalfa weevil; apple curculio;...

16. Add a major sub-header “HOW TO APPLY” above “GENERAL SPACE FUMIGATION”.
17. Under GENERAL SPACE FUMIGATION, remove “A. Warehouse, Grain Elevator, Food Processing Plant, Restaurants” and replace with: “Fully Enclosed Non-Residential Structures*” and add the following:

DO NOT apply in residential structures. Refer to the TERMS USED IN THIS LABEL AND BROCHURE section of this brochure.

Follow all instructions and precautionary procedures as outlined on this label.

Additionally, in the TERMS USED IN THIS LABEL AND BROCHURE section, add the following:

Non-residential structure: A structure where the general public, including children, will not have access. This includes, but are not limited to, industrial/commercial indoor sites (for example, laboratories, warehouses, food granaries); modes of transport in areas where passengers are not present (for example, cargo areas, railcars); animal housing (for example, livestock housing, pet kennels); and areas within specific residential structures where the general public, including children, will have no access such as furnace rooms, storage areas in multi-unit dwellings, etc.

Residential structure: A structure where the general public, including children, could be exposed during or after application. Residential structures include, but are not limited to, homes, garages, schools, restaurants, hotels/motels, public buildings or any other structures where the general public including children may potentially be exposed.

18. Before GENERAL SPACE FUMIGATION – 1. Preparation for Fumigation, add the following: “For the control of pests listed in “PESTS CONTROLLED” section of this brochure. At temperatures below 15°C, increase the dosage by 0.8 kg per 100 m³ for every 5°C drop in temperature. DO NOT fumigate when ambient air temperature is below 5°C. See Table 1 in Appendix 1 of this brochure for the dosages and minimum treatment period for certain sizes of structures.”
19. Under GENERAL SPACE FUMIGATION – 1. Preparation for Fumigation, replace “1) all food and feed commodities **not** included in Tables I and II;” with: “1) all food and feed commodities including those listed in Tables II, III and IV;”
20. Under GENERAL SPACE FUMIGATION – 1. Preparation for Fumigation, remove: “Do not fumigate unfinished basements (cinder blocks) in dwellings.” And replace with: “DO NOT fumigate unfinished cinder block basements.”
21. Under GENERAL SPACE FUMIGATION – 2. Sealing the building, remove: “See Table III for rate of application.” Move and renumber the current Table III to Table I.
22. Change the header “ENCLOSED SPACES” to “ENCLOSED SPACE FUMIGATION”:
23. Under ENCLOSED SPACE FUMIGATION, rename the sub-header “D. Railroad Car, Truck, Van, Tractor Trailer, Bus or Sea Container” to “C. Railroad Car, Truck, Van, Tractor Trailer, Bus, Sea Container or Cargo Transport Unit Fumigation”
24. Under TERMS USED IN THIS LABEL AND BROCHURE, add the following definition: “Cargo Transport Unit: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a road freight vehicle, a railway freight wagon, a freight container, a road tank vehicle, a railway tank wagon or a portable tank.”

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25. Under ENCLOSED SPACE FUMIGATION – Chamber and Vault Fumigation, Vacuum Chamber Fumigation, Railroad Car, Truck, Van, Tractor Trailer, Bus, Sea Container or Cargo Transport Unit Fumigation, remove the statements “All precautionary procedures as outlined previously must be followed” and “Determine the proper rate of application and exposure time from Tables I and II/ Consult Tables I and II for specific articles, rates of application and exposure times”.
 26. Under ENCLOSED SPACE FUMIGATION, rename the header “E. Shipboard, In-Transit Ship or Shiphold Fumigation” to “D. Vessel Cargo and Cargo Spaces Fumigation”
 27. Under TERMS USED IN THIS LABEL AND BROCHURE, add the following definitions:

Alongside: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, alongside a wharf or quay.

Canadian Vessel: As defined by the Canada Shipping Act, 2001, a vessel that is registered or listed under Part 2 (Registration, Listing and Recording) or that is exempted under the regulations from the registration requirement in subsection 46(1).

Clearance Certificate: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a certificate issued by a fumigator-in-charge or a marine chemist that certifies that a vessel or space is gas-free.

Competent Person: Only applicable for vessel fumigations. As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a person who has the knowledge and experience to safely and adequately perform the duties required by this Part of a fumigator-in-charge, including at least 150 hours of experience on board vessels under the supervision of a marine chemist or fumigator-in-charge in the use and operation of equipment that detects the presence of gas in the atmosphere.

Foreign Vessel: As defined by the Canada Shipping Act, 2001, a vessel that is not a Canadian vessel or a pleasure craft.

Fumigation In Transit: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, the fumigation on a vessel of bulk cargo, or of a space that contains bulk cargo, while the vessel is en route between two ports, or the vessel is in a Canadian port if it is the intention of the master to continue the fumigation after the vessel leaves the port.

Fumigator-In-Charge: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a competent person responsible for carrying out a fumigation.

Gas-Free: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, in respect of a space or a vessel, means that the presence of a fumigant cannot be detected in the space or the vessel by a fumigator-in-charge or another competent person using detection methods and equipment that are appropriate to the fumigant.

Master: As defined by the Canada Shipping Act, 2001, the person in command and charge of a vessel. It does not include a licensed pilot, within the meaning of section 1.1 of the Pilotage Act, while the pilot is performing pilotage duties under that Act.

Vessel: As defined by the *Canada Shipping Act, 2001*, a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above

water, without regard to method or lack of propulsion, and includes such a vessel that is under construction. It does not include a floating object of a prescribed class.

28. Amend the D. Vessel Cargo and Cargo Spaces Fumigation, replace the section as follows:

IMPORTANT - Fumigation on a Canadian vessel or on a foreign vessel that is in Canadian waters is governed by the *Cargo, Fumigation and Tackle Regulations* (SOR/2007-128; CFTR) created under the *Canada Shipping Act, 2001*. Refer to and comply with those Regulations prior to fumigation. Fumigations must be carried out under the direction of a “fumigator-in-charge” as indicated in these regulations.

No person shall fumigate in transit or permit fumigation in transit on a Canadian vessel. No person shall fumigate in transit with methyl bromide. When fumigating with methyl bromide in Canadian waters, all vessels must be alongside for the entire duration of the fumigation and aeration and until a clearance certificate has been issued by the fumigator-in-charge.

Pre-fumigation procedures

1. Before beginning to fumigate on a vessel in a Canadian port, in addition to preparation/update of a FMP (refer to the “Site Specific Fumigation Management Plan” section of this brochure) and its associated documentation, the fumigator-in-charge will give notice of the intention to fumigate to the Department of Transport Marine Safety Office nearest to the vessel in writing at least 24 hours before fumigation begins, if feasible, including the name of the port where the fumigation will be carried out and, if applicable, the number of the berth within the port, and the name of the fumigant and method of application involved and whether the fumigation:
 - a. is or will be of the cargo or cargo spaces on board the vessel,
 - b. will be completed before the vessel leaves the port, and
 - c. is or will be of cargo on board a vessel that will be unloaded at a Canadian port.
2. The fumigator-in-charge shall not begin fumigating or permit it to begin unless all persons who are on board the vessel and are not engaged in the fumigation or in the care of the vessel have disembarked. When cargo is to be fumigated, crew members who are not engaged in the fumigation or in the care of the vessel may be on board if the following conditions are met:
 - a. the fumigator-in-charge has inspected the space in which the cargo is located determined and informed the master in writing that during the fumigation no fumigant is likely to leak from the space containing the cargo and into a space that is ordinarily occupied by crew members;
 - b. the space in which the cargo is located is not adjacent to a space that is ordinarily occupied by crew members; and
 - c. the space in which the cargo is located is separated by at least two gas-tight

bulkheads (meaning no fumigant can pass through the bulkhead or over the top, under the bottom, or around either side of the bulkhead) from a space used by crew members.

3. The fumigator-in-charge shall not begin fumigating or permit it to begin unless sign(s) with the requirements set out in the CFTR and the PLACARDING OF TREATMENT AREAS, TREATMENT BUFFER ZONES, AND AERATION BUFFER ZONES section of this label and brochure are on display near the gangways and near the entrances that lead to a space that is to be fumigated. Only when a clearance certificate has been issued by the fumigator-in-charge shall these signs be removed by the master.
4. The fumigator-in-charge shall not begin fumigating or permit it to begin unless he or she has posted a person to keep watch at each place where the vessel can be boarded while it is alongside. Until a clearance certificate has been issued in respect of the vessel, this person shall not allow anyone who is not engaged in the fumigation or care of the vessel to board the vessel.

Fumigation procedures

1. For the dosage, minimum treatment period and minimum aeration period, see Appendix 1 - Table I for fumigation of empty cargo spaces, and Appendix 1 - Tables II, III, IV, and VI for fumigation of certain types of cargo.
2. During fumigation, each person on board the vessel shall have available for immediate use NIOSH approved self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator (see “Respirator Requirements and Work Time Restrictions” section of this label) that can protect them against the fumigant.
3. During fumigation, the fumigator-in-charge or a competent person acting under the direction of the fumigator-in-charge shall conduct periodic tests that the fumigator-in-charge determines are necessary using appropriate detection equipment with a sensitivity of at least 0.5 ppm (e.g., a continuous real-time detection device, a direct reading detection device, or halide leak detector) to ascertain whether a fumigant is leaking from a space that is being fumigated. Additionally, if crew members who are not engaged in the fumigation or in the care of the vessel are on board, the fumigator-in-charge or a competent person acting under the direction of the fumigator-in-charge shall conduct any periodic tests that the fumigator-in-charge determines are necessary to determine whether the concentration of methyl bromide in a space that is ordinarily occupied by crew members exceeds 1 ppm.
4. If the fumigant leaks from a space that is being fumigated, every person who is taking part in the fumigation shall, under the direction of the fumigator-in-charge, take all feasible measures to stop the leakage; and the fumigator-in-charge shall immediately notify the master of the leakage. If the leakage is stopped, the fumigator-in-charge shall notify the master of the stoppage. However, if the fumigator-in-charge determines that the leakage cannot be stopped, he or she shall direct the persons taking part in the fumigation to cease the fumigation and to aerate the space. Additionally, if crew members who are not engaged in the fumigation or in the care of the vessel are on board, if the concentration of methyl bromide in a space that is ordinarily occupied by crew members exceeds 1 ppm, all persons on board the vessel who are not wearing a NIOSH SCBA shall immediately disembark.
5. If, at any time other than during a fumigation of a space, a person has reasonable grounds

to believe that the concentration of methyl bromide in the space exceeds 1 ppm, the person shall immediately warn every person whom they know to be in the space that it should be evacuated and notify the vessel's master of the excessive concentration.

6. After being notified of the excessive concentration, the master shall advise all persons on board the vessel of the excessive concentration. Every person in the space shall evacuate it after being advised of the excessive concentration. No person who has been advised of the excessive concentration shall enter the space unless that person wears a NIOSH SCBA. The master shall ensure that the space is aerated by crew members with experience using the equipment to be used in the aeration or by persons assisting the fumigator-in-charge. These instructions cease to apply when a competent person determines that the concentration of methyl bromide does not exceed 1 ppm.
7. During fumigation, no person shall enter a space that is being fumigated unless the fumigator-in-charge determines it is necessary. If the fumigator-in-charge determines that entry into a space that is being fumigated is necessary, the fumigator-in-charge and one or more other persons experienced and knowledgeable in the use of the a NIOSH SCBA may enter the space if they wear a NIOSH SCBA and a safety harness fitted with a lifeline that is tended by a person outside the space who is also wearing a NIOSH SCBA.

Aeration procedures

1. After fumigation, the fumigator-in-charge shall ensure that the space is aerated. Before the aeration begins, the fumigator-in-charge shall advise the vessel's master in writing of the location of the spaces that will be occupied by a crew member for the purpose of assisting in the aeration.
2. A crew member may, subject to the direction of the fumigator-in-charge, board the vessel to assist in the aeration by opening the hatches of the vessel and operating generating and ventilation machinery if the crew member is wearing a NIOSH SCBA.
3. If a test result shows that the concentration of methyl bromide exceeds 1 ppm, every person in the space shall wear a NIOSH SCBA or evacuate the space until a test result shows that the concentration of the fumigant does not exceed 1 ppm.

Clearance Certificates

1. It is the responsibility of the fumigator-in-charge to issue a clearance certificate in respect of a vessel only when the vessel is gas-free. The vessel's master shall record in the vessel's logbook the issuance of a clearance certificate and the date of issuance.

Report of Danger

1. If persons on board a vessel are in serious and imminent danger as a result of a fumigation on the vessel, its master shall immediately report the danger and the circumstances that gave rise to it to the Transport Canada office nearest to the vessel by the quickest means available.

29. Amend the header "GAS TIGHT COVERINGS" to "GAS-TIGHT COVERING FUMIGATION".

30. Throughout the label change "tarpaulin" to "gas-proof tarpaulin".

31. Under GAS-TIGHT COVERING FUMIGATION – Gas-Proof Tarpaulin Fumigation, replace “All precautionary procedures as outlined previously must be followed. The article or stacked articles should be placed on a sealed concrete floor or other gas-proof surface (avoid asphalt since this material will absorb the gas). If the floor or surface is not airtight, it may be made so by covering it with sisal (fibre made from the agave plant) kraft paper, tar paper, additional tarpaulin, polyethylene sheeting or a fumigation bubble.” With:

“Follow all instructions and precautionary procedures as outlined on this label and brochure.

Only use gas-proof tarpaulins designed for fumigations that have the following characteristics:

- made from gas-impervious materials such as polyethylene, vinyl, or neoprene-coated nylon
- are at least 6 mils thick;
- flexible enough to cover items;
- be in good shape (e.g., no rips or tears); and
- durable (e.g., resists tearing, UV resistant, able to withstand environmental conditions and handling)

The commodity to be treated must be placed on a sealed concrete floor or other gas-proof surface. DO NOT place commodity to be treated directly on asphalt surfaces since asphalt will absorb the gas. If the floor or surface is not gas-proof, it may be made so by covering it with an additional gas-proof tarpaulin.”

32. Under GAS-TIGHT COVERING FUMIGATION, replace:

“For delivery of METH-O-GAS® fumigant from outside the tarpaulin, polyethylene tubing is required. Anchor one end of each polyethylene tube into an evaporating pan with tape or a suitable weight. This ensures that the liquid will be directed into the evaporating pan. Place evaporating pan(s) with anchored applicator tubing in the centre of the expansion dome. Extend the free ends of the polyethylene tubes outside the area to be covered. Cover and seal the stack with a gas tight tarpaulin or polyethylene sheeting of 6 mil or greater thickness. Allow a margin of at least 60 cm at the base of the stack for sealing. Sweep around the stack to provide a clean surface for sealing the tarpaulin. Seal tarpaulin to floor by sand and/or water snakes, by taping or by means of moist soil. Attach each polyethylene tube to a can applicator or cylinder valve outlet and release fumigant. Use a cylinder dispenser or scale to meter small amounts from cylinders. Special units are available for use of 454 gram cans that combine opener and evaporating pan functions, and are designed to be used with all parts under the tarpaulin.

With:

“Deliver of METH-O-GAS® Space Fumigant from outside of the gas-proof tarpaulins only. For delivery of METH-O-GAS® Space Fumigant from outside the tarpaulin, polyethylene tubing is required (do not use polyvinyl tubing). Anchor one end of each polyethylene tube into an evaporating pan with tape or a suitable weight. This ensures that the liquid will be directed into the evaporating pan. Place evaporating pan(s) with anchored applicator tubing in the centre of the expansion dome. Extend the free ends of the polyethylene tubes outside the area to be covered.

The area containing the commodity to be fumigated under the gas-proof tarpaulins must be gas-tight. Cover and seal the commodity with a gas-proof tarpaulin. Allow a margin of at least 60 cm at the base of the stack for sealing. Sweep around the commodity to be treated to provide a clean surface for sealing the tarpaulin. Seal the gas-proof tarpaulin to the floor by sand and/or water snakes, by taping or by means of moist soil or sand.

Attach each polyethylene tube to a can applicator or cylinder valve outlet and release fumigant. Use a cylinder dispenser or scale to meter small amounts from cylinders. Special units are available for use of 454 gram cans that combine opener and evaporating pan functions, and are designed to be used with all parts under the gas-proof tarpaulin. Fans normally should be used in tarp fumigations to aid in the even distribution of fumigant. A vaporizer or heat exchanger may be required and is also useful to aid in application and distribution of the fumigant.

33. Under GAS-TIGHT COVERING FUMIGATION, remove “Use rates and exposure times are shown in Tables I and II.”
34. At the end of GAS-TIGHT COVERING FUMIGATION – Gas-proof Tarpaulin Fumigation, add the following statement: “DO NOT use damaged gas-proof coverings to fumigate. The entire treatment area must be gas-tight to prevent leakage.
35. Remove the following subsections:
- **G. Mulch (Hay or Straw) - Insects, Nematodes, Weed Seeds**
 - **H. Christmas Trees**
 - **I. Wood and Wood Products**

And replace with the following major header and sections:

COMMODITIES PERMITTED TO BE TREATED

Only commodities listed in this brochure are permitted to be treated with METH-O-GAS® Space Fumigant.

a. Raw Agricultural Food/Feed Commodities, Processed Food Commodities, and Miscellaneous Commodities (excluding Mulch (Hay or Straw))

For the control of pests listed in “PESTS CONTROLLED” section of this brochure. Follow the instructions found under “ENCLOSED SPACE FUMIGATION” section or “GAS-TIGHT COVERING FUMIGATION” section of this brochure. The listed dosages, minimum

treatment periods and minimum aeration periods are at a commodity and ambient air temperatures of 21°C or above. If the commodity and ambient air temperatures are between 5 to 21°C, increase dosage by 25%. DO NOT apply below the commodity and ambient air temperatures of 5°C. See Tables II, III and IV in Appendix 1 of this brochure for the dosages, minimum treatment periods and minimum aeration periods for specific commodities.

b. Mulch (Hay or Straw)

Adhere to the following restrictions: DO NOT fumigate close to desirable vegetation. Keep the edge of the cover at least 30 cm away from the roots of desirable plants.

For the control of insect pests, nematodes and weed seeds in hay or straw mulch. See the list of insect pests in “PESTS CONTROLLED” section of this brochure.

Soak hay or straw for several days. Pile the bales. Pile the straw/hay bales. Add a structure to support lifting the gas-proof tarpaulin several centimetres above hay/straw bales. Seal the edges of the tarpaulin under earth to ensure that the entire treatment area is gas-tight. Evaporate the METH-O-GAS® Space Fumigant under the gas-proof tarpaulin cover. Follow the instructions found under “GAS-TIGHT COVERING FUMIGATION” section of this brochure. The listed dosages, minimum treatment periods and minimum aeration periods are at a commodity and ambient air temperatures of 21°C or above. If the commodity and ambient air temperatures are between 5 to 21°C, increase dosage by 25%. DO NOT apply below the commodity and ambient air temperatures of 5°C. See Table 4 in Appendix 1 of this brochure for the dosages, minimum treatment periods and minimum aeration periods for mulch (hay or straw).

c. Christmas Trees

For the treatment of Christmas trees to be shipped from regulated areas in Canada. Fumigate under gas-proof tarpaulin coverings within 14 days after cutting. Follow the instructions found under “GAS-TIGHT COVERING FUMIGATION” section of this brochure. Verify gas concentration 30 minutes after starting and hourly thereafter. Take a final reading 15 minutes before the end of the treatment period. See Table 5 in Appendix 1 for the dosages and minimum treatment periods at various temperatures for Christmas trees. DO NOT apply when the temperature of the commodity falls below -18°C.

d. Wood and Wood Products

METH-O-GAS® Space Fumigant may be used to treat all types of wood and wood products such as logs, poles and timbers, lumber, beams, structural elements, furniture, crates and boxes, dunnage, firewood, chips, carvings, trim, decorative wood items, grape wreaths, and craft items, bamboo and wicker products, baskets and related woody objects.

Target pests include all wood destroying insects and borers, quarantine pests (insects, nematodes, pathogens, etc.), pests subject to food and health regulations, and other incidental pests associated with wood and wood products. Some examples include termites (drywood, powder-post, subterranean, Formosan, and dampwood), powder-post beetles, old house borer and other long-horned wood borers, metallic wood borers, bark beetles, wharf borer, furniture beetle, bamboo borer, deathwatch beetles, carpenter ants, wood wasps, foreign grain beetle,

psocids, straw itch mite, cockroaches, insect eggs, pupae and cocoons, spiders, sowbugs, millipedes, centipedes, rodents, snakes, snails and nematodes.

Stored wood and wood products may be applied using any of the “ENCLOSED SPACE FUMIGATION” or “GAS-TIGHT COVERING FUMIGATION” methods. Follow the instructions found under the “ENCLOSED SPACE FUMIGATION” or “GAS-TIGHT COVERING FUMIGATION” sections of this brochure. Relatively full spaces that are not well ventilated may need additional aeration time for off-gassing from the fumigated items. See Table 6 for the target pests, dosages and minimum treatment periods at various temperatures of the wood. DO NOT apply when the wood and ambient air temperatures are below 5°C.

Measuring the Temperature of Certain Wood Commodities Under Fumigation:

For logs, poles, timbers, lumber, beams, structural elements, crates, boxes, pallets, firewood and other large woody products.

To monitor the temperature of the wood, use temperature monitor suitable for measuring wood core temperature (i.e., insertion into the wood). One method is to insert the temperature monitors at least 30 cm from the end of a piece of wood and penetrate to the centre of the wood. For shorter boards or pallet blocks, insert temperature monitors in the piece of wood with the largest dimensions in a manner that ensures the temperature at the core is measured. Seal any holes drilled in the wood to place the temperature monitors with appropriate material to prevent interference in temperature measurement by ambient air movement. Allow adequate time for the temperature of the wood to acclimatize after drilling (e.g., 10 minutes) as it may be hotter than it will be during treatment. Special attention should be paid to external influences on the wood such as nails or metal insertions that may lead to incorrect measurements. Other suitable methods of measuring the temperature of the wood may be possible to prevent damaging the commodity (e.g., infrared thermography). Refer to “EFFECTIVE FUMIGATION” – “General” and “Measuring Temperatures” in this brochure for further information on measuring temperatures.

36. Move the section entitled “FOOD COMMODITIES”, excluding bullets (a) and (b), to above the section entitled “Effective Fumigation” under the Precautionary Procedures section.
- Move bullets (a) and (b) to Tables II and III as footnotes.
 - Remove the header “FOOD COMMODITIES” and change the header “Aeration Periods for Food Commodities” to “**Additional Precautionary Procedures for Food/Feed Commodities**”.
 - After the header, add the following statement: “The following precautionary procedures are required for food/feed commodities:”
 - Add “/feed” to wherever it states “food”.
 - Add the word “minimum” in front of “aeration periods” in the first sentence.
 - Amend the statement: “Bulk and/or unwrapped foods should be wrapped (packaged) only after recommended aeration period.” to : “Bulk and/or unwrapped foods must be wrapped (packaged) only after the aeration period is completed.”
 - Amend “Tables I, II and III” to “Tables II and III in Appendix 1 of this brochure”.

- At the end of the paragraph add the statement: “See COMMODITIES PERMITTED TO BE TREATED section in this brochure for further instructions”.
- Remove the statement “The application rates, exposure times and aeration periods for food products are for ambient temperature (21°C) only. The aeration periods listed in Tables I, II and III are considered minimum figures.”

37. Amend the RESISTANCE MANAGEMENT RECOMMENDATIONS as follows:

For resistance management, please note that METH-O-GAS[®] Space Fumigant contains a Group 8A insecticide/acaricide. Any insect/acarid population may contain individuals naturally resistant to METH-O-GAS[®] Space Fumigant and other Group 8A insecticides/acaricides. The resistant individuals may dominate the insect/acarid population if this group of insecticides/acaricides are used repeatedly in the same location. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed. To delay insecticide resistance:

- Where possible, rotate the use of METH-O-GAS[®] Space Fumigant or other Group 8A insecticides/acaricides with different groups that control the same pests.
- Insecticide/acaricide use should be based on an IPM program that includes scouting and record keeping, and considers cultural, biological and other chemical control practices.
- Monitor treated pest populations for resistance development.
- Contact your local specialists for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact LANXESS Corporation at [number to be provided by registrant].

38. Add/amend the following definitions in the TERMS USED IN THIS LABEL AND BROCHURE section, and make consistent use of the terms throughout the label:

- Active Aeration: The use of fans or any other mechanical devices to aerate or ventilate the treatment area. May also be referred to as “mechanical aeration.”
- Air Exchange Rate: A measure of how many air dilutions occur per hour in the enclosure during aeration.
- Dosage: The required amount of fumigant in the treatment area over the treatment period, also referred to as the concentration times time product ($C \times T$), to effectively treat a space or commodity.
 - Instead of “application rate”
- Exhaust Stack: A duct used to exhaust methyl bromide from the treatment area.
- Minimum Concentration: The absolute minimum below which the concentration of methyl bromide must not fall at any time during the treatment period.
- Passive Aeration: Non-mechanical ventilation (i.e., opening doors, windows or removing tarpaulin cover) of the treatment area.
- Retention Rate: The percentage of the applied material that remains after treatment is completed and thus is the amount emitted during aeration.

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- Treatment Period: The period of time from when the methyl bromide concentration in the treatment area reaches the required dosage until the beginning of aeration period.
 - Instead of “exposure time”
39. Amend the order of the tables as they appear in the order first cited on the label and add the following header: “APPENDIX 1. APPLICATION SUMMARY TABLES”. Specifically, the order that they should appear in is as follows:
- Table I Application Summary For General Space Fumigation of Fully Enclosed Non-Residential Structures⁽¹⁾
 - Table II Application Summary For Raw Agricultural Food/Feed Commodities⁽¹⁾⁽²⁾⁽³⁾
 - Table III Application Summary For Processed Food Commodities⁽¹⁾⁽²⁾⁽³⁾
 - Table IV Application Summary For Miscellaneous Commodities⁽¹⁾
 - Table V Application Summary For Christmas Trees
 - Table VI Application Summary For Wood and Wood Products⁽¹⁾⁽²⁾
40. In the tables, amend the headers EXPOSURE TIMES (HRS) AND AERATION PERIOD (HRS) to include the word MINIMUM and replace “100m³” with “100 m³”.
41. In the application summary tables for raw agricultural food/feed commodities, processed food and miscellaneous commodities, remove “The above application rates, exposure times and aeration periods are at an ambient temperature of 21° C.” And replace with: “The listed dosages, minimum treatment periods and minimum aeration periods are at commodity and ambient air temperatures of 21°C or above. If the commodity and ambient air temperatures are between 5 to 21°C, increase dosage by 25%. DO NOT apply when commodity and ambient air temperatures are below 5°C.”
42. In Table 1 Application Summary for General Space Fumigation:
- Amend the header to “Application Summary For General Space Fumigation of Fully Enclosed Non-Residential Structures”.
 - Amend the list under the column “Treatment Site” to “Fully Enclosed Non-Residential Structures (e.g., warehouse, food processing plant, feed room, grain bin, grain elevator, silos, and empty cargo spaces).”
 - Amend the footnote to read: ⁽¹⁾The above dosages and minimum treatment periods are at ambient air temperature of 15° C and above. At ambient air temperatures between 5 and 15°C, increase the dosage by 0.8 kg per 100 m³ for every 5°C drop in temperature. DO NOT fumigate when and ambient air temperatures are below 5°C.”
43. In Table 6. Application Summary for Wood and Wood Products:
- Amend the header “GENERAL RATE (G/m³)” to “DOSAGE⁽²⁾ (g/m³)”.
 - Amend “Plant Pathogens (Oak Wilt Disease)” to “Plant Pathogens (including Oak Wilt Disease)”.
 - Amend the “*” to “⁽¹⁾” footnote as follows: “(1) Variations in the dosage and minimum treatment periods may be required by quarantine officials of Canada
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and other countries. However, the following still must be observed: DO NOT exceed the maximum dosage of 240 g/m³. The minimum treatment periods and temperatures of the wood and wood products must be followed. DO NOT apply when the temperature of the wood or wood product and ambient air temperature are below 5°C ”

- Add the following footnote header to before “a) Wood temperatures of 21°C or above.”: “(2) Wood and wood products and ambient air temperature legend:”, and remove “Wood temperatures of” from each following point in the footnote.

44. In Table 4 Application Summary for Miscellaneous Commodities:

- Remove the words “OR PEST” in the table. Only commodities are listed.
- Amend “Animal Feed (Pet Food)” to “Processed Animal Feed (including pet food)”
- Amend “Furniture” to “Furniture (non-wood; upholstered)⁽²⁾” with the following footnote: “(2) For use on wooden furniture, refer to the Wood and Wood Products section and Application Summary For Wood and Wood Products table on this brochure for instructions.”

45. In Table 5 Application Summary for Christmas Trees, removed the word “AVERAGE” from the “COMMODITY TEMP. (°C)” column header.

46. Add the following fumigant usage record following APPENDIX 1:

APPENDIX II GENERAL SPACE AND STORED COMMODITY FUMIGANT USAGE RECORD

Structural and Stored Commodity Fumigant Usage Record^(1,2)	
Applicator Information (Name/Title/Role/Organization/Provincial Applicator License/Certification Number)	
Fumigator Personnel involved in the Fumigation (Name/Title/Role/Organization/Credentials)	
Methyl Bromide Treatment Number (i.e., The treatment number of the individual applicator starting at each calendar year. This will help to determine the number of treatments conducted by an applicator in a year)	
Fumigant Used (including Pest Control Product Registration Number)	METH-O-GAS® Space Fumigant (Reg. No. 9564)
Date and Time of Fumigant Introduction	
Date and time final	

Structural and Stored Commodity Fumigant Usage Record^(1, 2)	
clearance testing completed	
Site location. Please include landholder name (if applicable), address, lot number, township identifying information and other identifying information (for example, directions and distance from a permanent landmark; GPS coordinates)	
Facility management type (i.e., Private or Government)	
General description of Fumigation Site (e.g., warehouse, storage bin)	
Size of Treatment Site (m³)	
Treatment Types⁽³⁾	
Commodity Treated (if applicable)	
Target pest	
Was this treatment approved by a government official (yes or no)?	
Reason for use (i.e., quarantine or pre-shipment application⁽⁴⁾)	
Why was this product was used rather than the alternative fumigants (e.g., not registered for this use; for pre-shipment uses, alternatives not recognized in foreign jurisdiction).	
For pre-shipment uses, what country was the destination of the treated commodity?	
This Description of how commodity and ambient air temperatures was monitored (e.g., equipment used; placement of equipment)	
Description of how gas concentration was monitored (e.g., equipment used; placement of equipment)	
Dosage used (kg/100 m³)	
Total Amount of METH-O-GAS[®] Space Fumigant used (kg) for the Fumigation	

Structural and Stored Commodity Fumigant Usage Record^(1, 2)					
Length of the Treatment Time (hours)					
Retention Rate (% of applied dose retained after treatment; 1% to 100%)					
Aeration Method (Choose one of the following: passive; active w/ attached vertical stacks; active w/ open area vertical stacks; active w/ no stacks, or active w/ horizontal stacks)					
If vertical stacks were used, please indicate stack height (m)					
Length of Aeration Time (hours)					
Air exchange rate					
What is the distance between the application site and the closest residential area (also defined as any area where the general public may be present)⁽⁵⁾?					
How is air monitoring is conducted <i>inside</i> the fumigation site (the treated structure)?					
Is air monitoring conducted <i>outside</i> the treated structure? If so, how and when?					
Are there signs posted to inform workers/bystanders that the area is under fumigation?					
What type of respirators are worn during both treatment and aeration by applicators and other workers? If selection of respirators is based on monitoring levels, what are the monitoring levels (e.g., ppm)?					
Have employees taken training on the hazards of using the product, the use of safety equipment and the relevant exposure levels to methyl bromide? (Yes or No)					
COMMODITY/SITE TEMPERATURE MONITORING INFORMATION					
Date and Time of Reading	Commodity/Site Temperature Reading (°C)				
	Sensor Location 1	Sensor Location 2	Sensor Location 3	Sensor Location 4	Etc.

Structural and Stored Commodity Fumigant Usage Record^(1, 2)					
Date and time 0					
Date and time 1					
Date and time 2					
Date and time #					
AMBIENT AIR TEMPERATURE MONITORING INFORMATION					
<u>Date and Time of Reading</u>	<u>Ambient Air Temperature Reading (°C)</u>				
	Sensor Location 1	Sensor Location 2	Sensor Location 3	Sensor Location 4	Etc.
Date and time 0					
Date and time 1					
Date and time 2					
Etc.					
AIR MONITORING INFORMATION					
Sample Number	<u>Concentration of methyl bromide</u>				
	Sensor Location, Date and time 1	Sensor Location, Date and time 2	Sensor Location, Date and time 3	Sensor Location, Date and time 4	Etc.
1					
2					
3					
Etc.					
SPILL, EQUIPMENT FAILURE, EMERGENCIES AND COMPLAINT RECORDS⁽⁵⁾					
Date	Contact Information of Person Filing complaint	Description of what happened	Emergency procedures followed or measures taken to address complaint	What government department was a report sent to (if applicable)	
Additional notes (Optional)					
APPLICATOR ATTESTATION SECTION:					
I confirm that I am authorized to use this product as per the product label/brochure and that I have read and understood the label and brochure before use.		<u>Initial</u>			<u>Date:</u>
I confirm that I have completed all required training relating to this product.					
I confirm I provided a copy of the label and brochure, Fumigant Management Plan and SDS to all fumigation handlers and the site manager and provided them additional guidance on monitoring of the site.		<u>Initial (if applicable, n/a if not applicable)</u>			

Structural and Stored Commodity Fumigant Usage Record^(1, 2)		
I confirm that the information above is accurate and complete.	<u>Signature</u>	
Notes:		
<p>(1) The Structural/Stored Commodity Fumigant Usage Record must be completed each time a methyl bromide fumigation is completed.</p> <p>(2) An electronic version of this information (in spreadsheet format, such as Microsoft Excel) must be maintained and made available upon request to any provincial, municipal, or federal pesticide regulatory personnel. At the end of treatment, the applicator must provide a copy to the person responsible for the fumigation (if applicable) and submit completed copies of the Structural/Stored Commodity Fumigant Usage Record to the registrant.</p> <p>(3) The following treatment types are available, only when used for quarantine and pre-shipment applications (as defined under the <i>Ozone Depleting Substances and Halocarbon Alternatives Regulations</i> – see section (4)):</p> <ul style="list-style-type: none"> • General space fumigation for fully enclosed non-residential structures* • Enclosed spaces – Chamber fumigation • Enclosed space - Vacuum Chamber Fumigation • Enclosed space – Railroad Car, Truck, Van, Tractor Trailer, Bus, Sea Container or Cargo Transport Unit Fumigation • Enclosed space – Vessel Cargo and Cargo Spaces Fumigation • Gas-tight covering fumigation – Gas-Proof Tarpaulin Fumigation <p>(4) Quarantine Uses: The treatment with methyl bromide of a commodity, product, facility or means of conveyance, when the treatment is intended to prevent the spread of, or to control or eradicate, pests of quarantine significance in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a quarantine application.</p> <p>Pre-shipment Uses: The treatment with methyl bromide, within 21 days prior to export, of a commodity or a product that is to be entirely exported to another country, or of a means of conveyance, in order to meet a requirement of the importing country or a requirement of Canadian law. A permit issued under the ODSHAR is required to authorize the import of methyl bromide for a pre-shipment application.</p> <p>Critical Use: A use of methyl bromide that conforms to Decision IX/6 set out in the document entitled Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, published by the Ozone Secretariat, United Nations Environment Programme. Permits issued under the ODSHAR are required to authorize both the import and the use of methyl bromide for critical use exemptions.</p> <p>Emergency Use: A use of up to 20 tonnes of methyl bromide, in response to an emergency event, that conforms to Decision IX/6 set out in the document entitled Report of the Ninth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, published by the Ozone Secretariat, United Nations Environment Programme. Permits issued under the ODSHAR are required to authorize both the import and the use of methyl bromide for emergency use.</p> <p>(5) A residential area is one where the general public, including children, could be exposed during or after application. Residential areas would include, but are not limited to, homes, garages, schools, restaurants, hotels/motels, public buildings, parks or any other areas where the general public including children may potentially be exposed.</p> <p>(6) Pesticide registrants are required to report to the PMRA all incidents associated with their products. For details on the reporting requirements, such as the type of incidents that must be reported and the timeframes for reporting, please refer to the Incident Reporting Regulations and related Guidance Document provided in the link below: https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/registrants-applicants/reporting/mandatory-incident.html</p>		

47. Add the buffer zone instructions and tables in Appendix VI following APPENDIX II outlined above.

2.2 Label amendments relating to the human health assessment

For the product with registered QPS uses (METH-O-GAS Space Fumigant, Reg No. 9564)

On the Product Label (which includes the label brochure):

- I. Add a “**SAFETY REQUIREMENTS SUMMARY**” section containing the following:
 1. Carefully read the entire label and brochure and follow instructions explicitly.
 2. The licensed/certified applicator must develop and follow a Fumigation Management Plan and notify appropriate company employees prior to fumigation.
 3. Never fumigate alone from inside the treatment area. When entry into the treatment area for application of the fumigant is required, at least two persons: a licensed/certified applicator and a person trained in accordance with the label and brochure working under the direct supervision of the licensed/certified applicator, must be present during fumigation, at the initiation of aeration, and when testing for re-entry. Appropriate respiratory protection, as outlined in the “**Respirator Requirements and Work Time Restrictions**” section, **MUST** be worn. If at any time methyl bromide levels exceed the limit of detection of **0.5 ppm**, all individuals who are not wearing respiratory protection or cannot follow the work time restrictions as outlined in the “**Respirator Requirements and Work Time Restrictions**” section must vacate the area until methyl bromide levels are at or below **0.5 ppm**. Respirators may not be required at certain concentrations above **0.5 ppm** depending on the work time restrictions (see “**Respirator Requirements and Work Time Restrictions**” section).
 4. Observe all provincial pesticide legislation requirements.
 5. The licensed/certified applicator must maintain visual and/or voice contact with all fumigation handlers during the application of the fumigants.
 6. Treatment and aeration buffer zones must be established for all fumigated sites as per the instructions outlined under the “**Treatment & Aeration Buffer Zone Requirements**” section.
 7. Post warning placards around the fumigated site and the treatment and aeration buffer zone perimeters as per instructions in the “**Placarding of Treatment Areas, Treatment Buffer Zones, and Aeration Buffer Zones**” section. If fumigated commodities are moved to a secondary aeration location before aeration is complete, warning signs must also be posted as per instructions in the “**Moving Commodity before Aeration Period is Complete**” section.
 8. Entry by any person, except the licensed/certified applicator supervising the fumigation, or persons under their direct supervision, is prohibited in the treatment and aeration buffer zones. Authorized persons who enter the treatment or aeration buffer zones must follow the personal protective equipment requirements specified for fumigation handlers on this label.
 9. Only if necessary, should workers be present in the treatment and aeration buffer zones. All workers present in the buffer zones during the fumigation or aeration periods **MUST** follow the requirements as outlined in the label and brochure’s – “**Respirator Requirements and Work Time Restrictions**” section.

10. Exposure to methyl bromide must never exceed **1.0 ppm** without following the requirements in the “**Respirator Requirements and Work Time Restrictions**” section. If workers must handle incompletely aerated commodity, or are indoors (e.g., an enclosed elevator head) they must follow the respiratory protection and work time restriction requirements in the “**Respirator Requirements and Work Time Restrictions**” section.
11. Dispose of empty containers in a manner consistent with the label instructions.
12. Do not reuse containers for any purpose.
13. Pre-exposure screening of employees to detect impaired pulmonary function is recommended. Any employees developing this condition should be referred for medical examination.
14. Theft of products: Immediately report to the local police department thefts of methyl bromide fumigants.
15. Registrant must be informed of any incident involving the use of this product.

- II. Revise the “PRECAUTIONS” section to: “PRECAUTIONARY STATEMENTS, HAZARDS TO HUMAN AND DOMESTIC ANIMALS” and revise the text to the following:

Highly volatile causes burns, vapour extremely hazardous. Extremely hazardous liquid and vapour under pressure. Fatal if inhaled or swallowed. Corrosive. Liquid or vapour can cause serious skin (e.g., skin burns) or eye injury (e.g., irreversible eye damage), both of which may have a delayed onset. Do not breathe vapour or gas. Inhalation may be fatal or cause serious acute illness or delayed lung, nerve, or brain injury. Keep away from heat.

Do not get in eyes, on skin, or on clothing. Methyl bromide vapour is odorless and non-irritating to skin and eyes during exposure. Exposure to toxic levels may occur without warning or detection by the user.

All persons working with METH-O-GAS[®] Space Fumigant must be trained or licensed in the use of METH-O-GAS[®] Space Fumigant and be knowledgeable regarding the proper use of personal protective equipment, detector devices and emergency procedures.

KEEP OUT OF REACH OF CHILDREN.

- III. Under the new “PRECAUTIONARY STATEMENTS, HAZARDS TO HUMAN AND DOMESTIC ANIMALS” add a “PERSONAL PROTECTIVE EQUIPMENT (PPE)” section containing the following:

Applicators and other fumigation handlers must wear:

- Long-sleeved shirt and long pants
- Shoes and socks
- Respiratory protections are required according to the “**Respirator Requirements and Work Time Restrictions**” section of this label.
 - **In the treatment area during the treatment period and when initiating aeration (e.g., installing exhaust systems and opening tarps),** a supplied air respirator (NIOSH approval number prefix TC-19C) or a self-contained

breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F) is **required at all times, regardless of the air concentration of methyl bromide.**

- **For all other areas during fumigation or during aeration/venting**, either a:
 - Supplied air respirator (NIOSH approval number prefix TC-19C) or a self-contained breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F) is **required** if methyl bromide concentrations are > **3.0 ppm** or unknown.
 - A NIOSH-certified half-mask or full-face piece air-purifying respirator with a cartridge certified by the manufacturer for protection from exposure to methyl bromide concentrations of at least up to **3.0 ppm** is required if methyl bromide concentrations are > the limit of detection (**0.5 ppm**) and \leq **3.0 ppm**.
 - However, if there is concurrent personal air monitoring of methyl bromide levels, and methyl bromide concentrations remain \leq **3.0 ppm** and exposures will be less than 8 hours, the Respirator Requirements and Work Time Restrictions in Table 2 of the “**Respirator Requirements and Work Time Restrictions**” section of this label may apply.
- Protective eyewear, such as a full-face shield or safety glasses, when handling liquid if full face respiratory protection is not being used (as indicated in the “**Respiratory Requirements and Work Time Restrictions**” section). DO NOT wear goggles, because methyl bromide can be trapped inside tight objects and cause skin injury.

See the “**User Safety Requirements**” section for additional restrictions.

USER SAFETY REQUIREMENTS

Fumigation handlers must wear the listed PPE and respiratory protection requirements and/or Work Time Restrictions must be followed (as outlined in the “Personal Protective Equipment (PPE)” and “Respirator Requirements and Work Time Restrictions” sections) when moving, handling, opening fumigant containers, during delivery/dispensing of product, while attending to spills and leaks, and while monitoring methyl bromide levels during treatment and aeration. Fumigation handlers entering the fumigation site before methyl bromide has been introduced to the treatment area are not required to wear the PPE listed above. Fumigation handlers entering the treatment area after the aeration period has ended are not required to wear the PPE listed if levels of methyl bromide are measured to be less than the limit of detection (LOD) of 0.5 ppm.

The licensed/certified applicator responsible for the fumigation must inform all fumigation handlers of the requirements relating to the use of personal respiratory protection equipment and to the use of monitoring devices and detection equipment. All fumigation handlers must be informed by the licensed fumigator or someone under their direct supervision of the concentration/work time limits for entry (1.0 ppm) and the requirement for methyl bromide monitoring devices, as stated in the “Respirator Requirements and Work Time Restrictions” section.

When a respirator is required for use with this product, as per the requirements listed in the “Mandatory Training Elements” and “Respirator Requirements and Work Time Restrictions” sections, the licensed/certified applicator supervising the fumigation must make sure that fumigation handlers comply with the Canadian Standards Association (CSA) and observe all provincial pesticide legislation requirements for respiratory protection (including fit testing requirements, medical assessment requirements, etc.). The respiratory protection must fit properly, any obstruction to a proper fit should be removed (e.g., beard, long sideburns).

- Do not wear jewelry, rubber gloves, goggles, tight clothing, rubber protective clothing, or rubber boots when handling. Methyl bromide can be trapped inside clothing or objects and cause skin injury. Wear a loose-fitting long-sleeved shirt, long pants, shoes and socks that are cleaned after each wearing. Do not wear protective coveralls, gloves, boots, jewelry, bandages or carry cigarettes, wallets, etc.
- If liquid fumigant splashes or spills on clothing, remove them at once and place them outdoors in an isolated place to aerate, because vapour or gas will be an intolerable source of irritation.
- Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Air dry clothes in an isolated place prior to disposal.
- At the end of the workday remove outer clothing, shoes, and socks. Do not reuse contaminated clothing or shoes until cleaned. Keep and wash the clothing and shoes separately from other laundry.
- Follow manufacturer’s instructions for cleaning/maintaining protective eyewear and respirators.

Only if necessary, should workers be present in the treatment and aeration buffer zones. All workers present in the buffer zones during the fumigation or aeration periods **MUST** follow the requirements, as outlined in the brochure’s “Respirator Requirements and Work Time Restrictions” section.

For emergency use and/or to escape from conditions which are Immediately Dangerous to Life or Health (IDLH), keep an adequate number of Supplied Air Respirators (NIOSH approval number prefix TC19-C) or SCBAs (NIOSH approval number prefix TC-13F) available for use.

User Safety Recommendations:

- Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing.

IV Add a **“SPILL AND LEAK PROCEDURES”** section containing the following:

Methyl bromide is highly mobile and given enough time may penetrate seemingly gas-tight materials such as concrete and cinder block. Therefore, adjacent, enclosed areas likely to be occupied must be monitored to ensure that significant leakage has not occurred. Sealing of the fumigated site, establishment of a treatment buffer zone, and/or air flow in the occupied areas must be sufficient to meet the 1.0 ppm exposure safety limit.

A spill, other than incidental to application or normal handling, may produce high levels of methyl bromide, and therefore, attending personnel must wear appropriate respiratory protection and personal protective equipment as specified in the “Personal Protective Equipment (PPE)” and “Respirator Requirements and Work Time Restrictions” sections. Contact the registrant and the provincial regulatory agency in case of a spill and for clean-up of spills.

If a spill or leak occurs, a treatment buffer zone must be established by the licensed/certified applicator around the location of the spill site based on their expertise taking into consideration site characteristics and environmental conditions. All workers present in the buffer zones **MUST** wear appropriate respiratory protection as outlined in the “Respirator Requirements and Work Time Restrictions” and the “Treatment & Aeration Buffer Zone Requirements” sections.

In case of a rupture of a hose or fitting while applying fumigant, immediately stop the fumigation. Evacuate everyone from the immediate area of spill or leak. Only applicators or other fumigation handlers, or emergency responders, are permitted to perform corrective action and clean-up. Use personal protective equipment specified in the “Personal Protective Equipment (PPE)” and “Respirator Requirements and Work Time Restrictions” sections of this label for entry into affected area to correct problem. Move leaking or damaged cylinders or containers outdoors or to an isolated location, observing strict safety precautions, and cover with a polyethylene sheeting of 6 mil or greater thickness. Seal by placing the outside edges of tarpaulin in a trench and cover with soil. Tamp soil down so edges will not pull loose. Discharge the contents under the tarpaulin. Work upwind if possible.

Allow spill to evaporate. Do not permit entry into spill area by persons without appropriate respiratory protection until concentration of METH-O-GAS® Space Fumigant is determined to be less than 1.0 ppm. For concentrations of methyl bromide over 1.0 ppm, see the “Respirator Requirements and Work Time Restrictions” section of this label for additional directions.

Contaminated soil, water and other clean-up debris is a toxic hazardous waste. For information on the clean-up of spills, contact the regional office of Environmental Protection, Environment and Climate Change Canada (1-800-668-6767) and Lanxess Corporation (Add Canadian contact telephone number).

- V Add a “**TERMS USED IN THIS LABEL AND BROCHURE**” section containing the following:

Aeration Buffer Zone: an area that extends from the point of methyl bromide emission from the treatment area (e.g., exhaust stack or building edge) to a distance determined by this label where access is limited. Entry by any person except the licensed/certified applicator and authorized fumigation handlers under their direct supervision is prohibited except as provided in the “Exceptions to Treatment and Aeration Buffer Zone Entry Restrictions” section of the label. The aeration buffer zone begins when aeration begins and ends when the air concentration of methyl bromide in the breathing zone of the treatment area for structural fumigation, or in the air space immediately around the treated commodity is 1.0 ppm or less. Once the aeration buffer zone expires, “Respirator Requirements and Work Time Restrictions” continue only in the treatment area until the end of the aeration period.

Aeration Period: The period of time starting at the initiation of aeration and ending when the concentration of methyl bromide is **1.0 ppm or less** and the minimum aeration period has elapsed according to the directions in the “**Aeration Period**” section of this brochure.

Alongside: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, alongside a wharf or quay.

Business (as referenced in the “Emergency Preparedness Measures” section): Structures and outdoor areas where business is conducted; e.g., offices, shops, equipment yards.

Breathing Zone: Areas where individuals typically stand, sit or lie down while performing work functions.

Canadian Vessel: As defined by the Canada Shipping Act, 2001, a vessel that is registered or listed under Part 2 (Registration, Listing and Recording) or that is exempted under the regulations from the registration requirement in subsection 46(1).

Cargo Transport Unit: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a road freight vehicle, a railway freight wagon, a freight container, a road tank vehicle, a railway tank wagon or a portable tank.

Clearance Certificate: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a certificate issued by a fumigator-in-charge or a marine chemist that certifies that a vessel or space is gas-free.

Competent Person: Only applicable for ship fumigations. As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a person who has the knowledge and experience to safely and adequately perform the duties required by this Part of a fumigator-in-charge, including at least 150 hours of experience on board vessels under the supervision of a marine chemist or fumigator-in-charge in the use and operation of equipment that detects the presence of gas in the atmosphere.

Difficult to Evacuate Sites (as referenced in the “Emergency Preparedness Measures” section): Schools (preschool to grade 12), provincially licensed day care centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons.

Exhaust Stack: A duct used to exhaust methyl bromide from the Treatment Area.

Foreign Vessel: As defined by the Canada Shipping Act, 2001, a vessel that is not a Canadian vessel or a pleasure craft.

Fumigation Site: The location at which fumigation activities will be conducted, at a minimum encompassing the treatment area, treatment and aeration buffer zones, and any secondary aeration locations.

Fumigation Handlers: Persons at the Fumigation Site involved in the fumigation, including the licensed/certified applicator and persons under their supervision. Fumigation handlers must be trained and equipped to use PPE according to label and brochure requirements. Does not include persons who do not enter the treatment area, treatment and aeration buffer zones, or secondary aeration location.

Fumigation In Transit: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, the fumigation on a vessel of bulk cargo, or of a space that contains bulk cargo, while the vessel is en route between two ports, or the vessel is in a Canadian port if it is the intention of the master to continue the fumigation after the vessel leaves the port.

Fumigator-In-Charge: Only applicable for ship fumigations. As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, a competent person responsible for carrying out a fumigation.

Gas-Free: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, in respect of a space or a vessel, means that the presence of a fumigant cannot be detected in the space or the vessel by a fumigator-in-charge or another competent person using detection methods and equipment that are appropriate to the fumigant.

Master: As defined by the Canada Shipping Act, 2001, the person in command and charge of a vessel. It does not include a licensed pilot, within the meaning of section 1.1 of the Pilotage Act, while the pilot is performing pilotage duties under that Act.

Maximum Entry Time: The time allowed without respiratory protection per continuous 24 hours in the treatment buffer zone, aeration buffer zone, treatment area during aeration, spill areas, and the secondary aeration location.

Mechanical Aeration: The use of fans or any other mechanical devices to aerate or ventilate the treatment area. May also be referred to as “Active Aeration.”

Non-residential structures: A non-residential structures is a building or non-building where there is no access by the general public, including children. Examples include but are not limited to, the following: industrial/commercial indoor sites (for example, warehouses, food granaries); and modes of transport in areas where people are not present (for example, cargo planes, railcars).

Person in Charge of the Facility or Agricultural Establishment (i.e., “Owner): Any person or company who has a present possessory interest (including leasehold, rental, or other) in the commodity or space being fumigated.

Passive Aeration: Non-mechanical ventilation (i.e., opening doors, windows or removing tarpaulin cover) of the treatment area.

Release: When control and responsibility for the commodity or structure is passed to the owner of the commodity or structure, responsible site manager, or other person designated by the owner.

Remote Monitoring: Monitoring conducted remotely is performed using a system set up in a treatment area or structure prior to the introduction of methyl bromide which allows the fumigation handler to check concentrations from outside the treatment area and without opening the treatment area. Inserting a hand-held device into the treatment area through a port or seam is not considered remote monitoring.

Residential Area: A residential area is one where the general public, including children, could be exposed during or after application. Residential areas would include, but are not limited to, homes, garages, schools, restaurants, hotels/motels, public buildings, parks or any other areas where the general public including children may potentially be exposed.

Seaway: As defined by the Cargo, Fumigation and Tackle Regulations (CFTR), SOR/2007-128, the same meaning as in subsection 2(1) of the Canada Marine Act.

Secondary Aeration Location: A separate area where commodities may be moved for the continuation of aeration under the “Moving Commodity before Aeration Period is Complete” section of this label. The secondary aeration location must allow the free flow of air through the area and must not hold or contain concentrations of methyl bromide. The perimeter of the secondary aeration location extends 60 cm (24 inches) from the outermost treated commodity, or carton, pallet, or box containing the treated commodity. The secondary aeration location and associated restrictions terminate upon the end of the aeration period. Secondary aeration locations may include outdoor covered areas, car ports, and areas surrounded by mesh barriers.

Start of the Fumigation: The point in time at which methyl bromide is first introduced/delivered/dispensed into the air of the treatment area.

Treatment Area: The structure, area or space which is, or was, enclosed or sealed to contain methyl bromide during the fumigation and continuing until the commodity or structure is moved or released.

Treatment Buffer Zone: An area surrounding a treatment area during the treatment period (exposure or holding period) where access is limited. The treatment buffer zone extends from the perimeter of the treatment area to a distance determined by this label. Entry by any person except the licensed/certified applicator and authorized fumigation handlers under their direct supervision is prohibited except as provided in the “Exceptions to Treatment and Aeration Buffer Zone Entry Restrictions” section of the label. The treatment buffer zone begins when the fumigant is introduced into the fumigation enclosure and ends when aeration begins.

Treatment Period: This period starts at the application time and ends at the exposure duration (holding period) specified on the product label; however, it may be extended depending on on-site conditions to achieve the desired efficacy in pest control.

Vessel: As defined by the Canada Shipping Act, 2001, a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water, without regard to method or lack of propulsion, and includes such a vessel that is under construction. It does not include a floating object of a prescribed class.

Work Time Restrictions: Include restrictions on the maximum entry time which is the time allowed without respiratory protection (per continuous 24 hours) in the treatment buffer zone, aeration buffer zone, treatment area during aeration, spill areas, and the secondary aeration location), the maximum level allowed per test, and/or requirements for a fumigation handler to wear a respirator and conduct air monitoring.

VI Add a “RESPIRATOR REQUIREMENTS AND WORK TIME RESTRICTIONS” section containing the following:

Tables 1 and 2 provide an overview of the required respiratory protection once methyl bromide has been introduced into the treatment area until the end of the aeration period.

A supplied air or self-contained breathing apparatus (SCBA) respirator is required for the methyl bromide concentrations and activities as noted in Table 1. A supplied air or SCBA respirator is also required during the treatment or aeration periods if the methyl bromide concentration or the length of time needed to complete an activity is unknown.

Table 1 Respiratory Protection Requirements for Fumigation Handlers and Other Workers in Treatment areas, Secondary Aeration Locations, Treatment Buffer Zones, and Aeration Buffer Zones During the Fumigation and Aeration Periods (that is, once methyl bromide has been introduced into the treatment area until the end of the aeration period) and Spill Areas.

Methyl Bromide Concentration	Required Respiratory Protection ¹	Activity
Any or unknown	Supplied Air or SCBA Respirator	Any activity during the treatment period, <i>in the treatment area</i> Initiating aeration (e.g., installing portable exhaust systems or opening tarps for aeration)
> 3 ppm or unknown	Supplied Air or SCBA Respirator	Any activity during the treatment period, <i>in all areas except the treatment area</i> During aeration period Removing tarps
≤ 3 ppm	Air Purifying Respirator with Air Monitoring OR No respiratory protection if following Work Time Restrictions	

Respirator Requirements:

Once methyl bromide has been introduced into the treatment area, fumigation handlers entering the treatment area, a treatment or aeration buffer zone, or secondary aeration location must wear either a supplied air respirator (NIOSH approval number prefix TC-19C) or a self-contained breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F) when:

- the concentration of methyl bromide is > **3.0 ppm** or unknown,
- installing portable exhaust systems,
- opening tarps for aeration and any time during the aeration period, and
- removing tarps.

Treatment area and Secondary Aeration Location

Any fumigation handler entering the treatment area **during the treatment period** must wear either a supplied air respirator (NIOSH approval number prefix TC-19C) or a self-contained breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F).

Any fumigation handler entering the treatment area or secondary aeration location **during the aeration period** must either (1) wear a respirator listed in the Table 1, or (2) follow the Work Time Restrictions below and in Table 2, depending on the concurrent air monitoring results.

Treatment Buffer Zones and Aeration Buffer Zones

Fumigation handlers entering a treatment buffer zone or aeration buffer zone must either (1) wear a respirator listed in Table 1, or (2) follow the Work Time Restrictions below and in Table 2, depending on the concurrent air monitoring results and whether fumigation is complete.

Respiratory Protection when Monitoring Air Concentrations

If methyl bromide concentrations are measured to be **3.0 ppm or less**, and the Work Time Restrictions (Table 2) are not followed, fumigation handlers may wear the following respirator instead of the supplied-air or SCBA respirator:

- a NIOSH-certified half-mask or full-face piece air-purifying respirator with a cartridge certified by the manufacturer for protection from exposure to methyl bromide at concentrations of at least up to **3.0 ppm**.
- When an air-purifying respirator is worn, the following air monitoring procedures must be followed to ensure that the **3.0 ppm** upper protection limit of the air-purifying respirator plus respirator cartridge is not exceeded:
- Air monitoring samples for methyl bromide must be collected at least every hour in the fumigation handler's breathing zone. See the 'Monitoring Locations' section of this label for directions on where samples must be measured.
 - If any air sample is greater than 3.0 ppm for methyl bromide:
 - All fumigation handlers wearing air-purifying respirators must either:
 - be removed from the fumigation site, or
 - put on a supplied-air respirator (NIOSH approval number prefix TC-19C), or a self-contained breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F).
- Fumigation handlers can resume work activities with an air-purifying respirator if all of the following conditions exist:
 - Two consecutive air samples for methyl bromide taken at the work site at least 15 minutes apart must be less than or equal to 3.0 ppm, and
 - New cartridges have been installed.

During the collection of air samples after an air sample has measured greater than **3.0 ppm**, a supplied-air respirator or a SCBA must be worn by the fumigation handler taking air samples or testing must be done remotely. New samples must be taken where the previous samples exceeded **3.0 ppm**.

Work Time Restrictions

Maximum Entry Time is the time allowed without respiratory protection per continuous 24 hours in the treatment buffer zone, aeration buffer zone, treatment area during aeration, spill areas, and the secondary aeration location.

The work time restrictions include restrictions on the **maximum entry time** which is the time allowed without respiratory protection (per continuous 24 hours) in the treatment buffer zone, aeration buffer zone, treatment area during aeration, spill areas, and the secondary aeration location), the **maximum level allowed per test**, and/or requirements for a fumigation handler to wear a **respirator and conduct air monitoring**.

Initial Test

The concentration of methyl bromide must be measured with an Initial Test using either:

- a continuous real-time detection device, with a sensitivity of **0.5 ppm** or lower for methyl bromide. If at any time air concentrations exceed **3.0 ppm** or are unknown (e.g., during the initial test), then fumigation handlers and other workers must either wear an SCBA or supplied air respirator or move outside the treatment or aeration buffer zone. Respirators may not be required at certain concentrations above **0.5 ppm** depending on the work time restrictions (see Table 2). The type of monitoring device must be recorded. Measurements, date, time, and location of the measurement must be recorded at least every 15 minutes.
- a direct reading detection device capable of accurately measuring methyl bromide levels with a sensitivity of **0.5 ppm** or lower for methyl bromide. Persons using direct read detection devices must follow manufacturer's directions. Fumigation handlers taking the Initial Test must wear either a supplied-air respirator (NIOSH approval number prefix TC-19C), or a self-contained breathing apparatus (SCBA) (NIOSH approval number prefix TC-13F).
 - Fumigation handlers must discuss the specific air monitoring and temperature monitoring equipment requirements with the registrant prior to fumigation.
 - The Initial Test must be performed as required in the 'Monitoring Locations' instructions below.
 - The Initial Test may be repeated prior to the subsequent entry of fumigation handlers using the Work Time Restrictions. Fumigation handlers must follow the Work Time Restrictions triggered by the monitoring at the time they enter the area.
 - If at any time air concentrations exceed **3.0 ppm** or are unknown (e.g., during the initial test), then fumigation handlers must either wear an SCBA or supplied air respirator or move outside the treatment or aeration buffer zone.
 - The type of monitoring device and the measurements taken must be recorded.
 - The results of the Initial Test are used to determine the Maximum Entry Time, the length of time work is allowed without respiratory protection within (i) the treatment buffer zone; (ii) the aeration buffer zone; (iii) the treatment area

during aeration; and (iv) secondary aeration location. This does not include time spent outside these areas.

- Additional monitoring is required during the Work Time Restriction period according to schedules set forth in the Work Time Restrictions table until work has ceased or the Work Time Restriction period has expired, whichever occurs sooner. If any subsequent tests indicate a higher concentration, the Work Time Restrictions for the higher concentration must be followed. If any subsequent tests are lower, the Work Time Restrictions for the higher concentration remain in effect.

Monitoring Locations:

- At each site and operation under fumigation, monitor airborne methyl bromide concentrations in all areas to which fumigators and other workers have access during fumigation and aeration. Air monitoring must be performed within the fumigation handler's breathing zone where work functions will be performed. The monitoring location(s) must be recorded in the FMP.
- Breathing zones are defined as areas where individuals typically stand, sit or lie down while performing work functions.

Work Time Restriction Air Monitoring Schedule

Use the work time and air monitoring schedule in Table 2 for each 24-hour period.

If more than the Maximum Entry Time has elapsed since the last test, an SCBA or supplied air respirator must be worn during testing or testing must be done remotely.

For fumigation handlers who may be involved in multiple methyl bromide fumigations within a continuous 24-hour period, the maximum entry time is cumulative across all methyl bromide fumigations within that continuous 24-hour period.

Table 2 Respiratory Protection Requirements and Work Time Restrictions for Fumigation Handlers and Other Workers in Treatment Buffer Zone or Aeration Buffer Zone, Spill Area or Treatment area and Secondary Aeration Location (only during the Aeration period).

Methyl Bromide Air Concentration [Maximum Allowed Per Test]	Required Respiratory Protection	Maximum Entry Time per Continuous 24 Hours (Time Allowed without Respiratory Protection)	Activity	Air Monitoring Required
> 2.0 to 3.0 ppm	Air-purifying respirator (APR) + air monitoring OR No respirator if following Maximum Entry Time and Air Monitoring Requirements	160 Minutes (2 Hours and 40 Minutes)	<ul style="list-style-type: none"> • Any activity during the treatment period, <i>in all areas except the treatment area</i> • During aeration period • Removing tarps 	Initial Test requires taking 2 samples at least 15 minutes apart. Both sampling results must be less than the 'Maximum Level Allowed Per Test'. Take additional sample once per hour after entry until work ends, the aeration period ends, or the Maximum Entry Time expires, whichever is sooner.
> 1.0 to 2.0 ppm		240 Minutes (4 Hours)		Initial Test requires taking 2 samples at least 15 minutes apart. Both sampling results must be less than the 'Maximum Level Allowed Per Test'. Take additional sample once every two hours after entry until work ends, the aeration period ends, or the Maximum Entry Time expires, whichever is sooner.
> LOD ¹ to 1.0 ppm		480 Minutes (8 Hours)		Initial Test requires taking 2 samples at least 15 minutes apart. Both sampling results must be less than the 'Maximum Level Allowed Per Test'.
No detectable amount (i.e., LOD)		No Limit		Initial Test requires taking 2 samples at least 15 minutes apart. Both sampling results must be less than the 'Maximum Level Allowed Per Test'.

Methyl Bromide Air Concentration [Maximum Allowed Per Test]	Required Respiratory Protection	Maximum Entry Time per Continuous 24 Hours (Time Allowed without Respiratory Protection)	Activity	Air Monitoring Required
				Take additional sample once every two hours after entry until work ends, the aeration period ends, or the Maximum Entry Time expires, whichever is sooner. After entry, testing may be discontinued after two consecutive No Detectable Amount Results

Equipment sensitivity must reach 0.5 ppm or lower. Fumigation handlers must discuss the specific air monitoring equipment requirements with the registrant prior to fumigation.

VII Add a “**MANDATORY ANNUAL TRAINING**” section containing the following:

RESPONSIBLE PARTIES

Certified/Licensed Applicator: Responsible for informing the person in charge of the facility or agricultural establishment, the employer or their representative of the requirement for the mandatory training and maintenance of training records, and directing the person in charge of the facility or agricultural establishment, the employer or their representative on how to obtain a copy of the product-specific training material from the registrant.

Registrant: Responsible for developing product-specific training material and having the product-specific training material readily available upon request when requested by either the certified/licensed applicator or facility.

The person in charge of the facility or agricultural establishment or the employer or his/her representative: Responsible for:

- Developing site-specific training material in conjunction with the FMP and certified/licensed applicator.
- Providing both product-specific and site-specific training to workers.
- Maintaining training records for their employees/workers for a minimum of 2 years and available to Health Canada upon request.

PERSONNEL

In facilities or agricultural establishments (i.e., silos, farm storage and flat storage) where this product is used, all employees (i.e., all individuals such as, workers, contractors, farmers, and farm workers) who are present in the facility or agricultural establishment during product use, **MUST** complete mandatory annual training using product-specific training material supplied by the registrant, and additional facility-specific information developed by the employer or their representative in conjunction with the FMP, before the fumigation is conducted.

MANDATORY TRAINING ELEMENTS

The training material **MUST** contain the following information:

Hazards of Methyl Bromide: Methyl bromide products are classified as restricted-class products due to high acute toxicity. Signs and symptoms of methyl bromide exposure are summarized as follows:

Early Symptoms: Include dizziness, headache, nausea and vomiting, weakness and collapse.

24-48 Hour Symptoms: Lung edema may develop, accompanied by cardiac irregularities. These effects are the usual cause of death.

Repeated Exposure: May cause blurred vision, staggering gait, and mental imbalance.

The 1.0 ppm Exposure Limit: Information on the **1.0 ppm** exposure limit and that it is time-dependent, with specific time limits when a respirator is not required. Workers **MUST NOT** be exposed to methyl bromide levels above **3.0 ppm** for any duration of time, without SCBA or a supplied air respirator. Frequent exposure to concentrations above permissible levels over a period of days or weeks may cause poisoning.

How to use Detection/Monitoring Devices and Personal Protective Equipment: Information on facility-specific equipment, such as, how to use detection devices and how to properly fit-test respirators, must be included. In addition, information on when respiratory protection should be used must be included.

Procedures when Levels of Methyl Bromide Exceed 1.0 ppm: Facility-specific details on what to do when methyl bromide levels exceed **1.0 ppm**, where workers are to go, who they should contact, the personal protective equipment to wear, and where the personal protective equipment is located.

Choosing an appropriate Treatment Buffer Zone and Aeration Buffer Zone: Process for choosing appropriate treatment and aeration buffer zone sizes based on the information provided in the “**Treatment & Aeration Buffer Zone Requirements**” section of this brochure.

VIII Add a “TREATMENT BUFFER ZONE & AERATION BUFFER ZONE REQUIREMENTS” section containing the following:

The appropriate treatment buffer zone and aeration buffer zone must be applied as summarized in Appendix IV. The appropriate treatment buffer zone and the aeration buffer zone distances must be used and must be included in the site-specific fumigation management plan. The treatment and aeration buffer zones are determined by the licensed/certified applicator who MUST be present for the duration of the aeration period.

Minimum Treatment and Aeration Buffer Zones: The minimum treatment and aeration buffer zones are 3 meters.

Treatment and Aeration Buffer Zones and Buildings: If the treatment area is contained within a closed building (exterior windows, doors, ventilation intakes, and other openings are closed), the entire building must follow all treatment and aeration zone restrictions, even if the calculated treatment zone distance would not encompass the entire building.

If the treatment area is within an opened building (all exterior windows, doors, and other openings are open), then only the area within the treatment buffer zone must follow the treatment buffer zone restrictions.

The treatment and aeration buffer zones extend into nearby buildings unless all openings (exterior windows, doors, ventilation intakes, and other openings) inside the treatment and aeration buffer zone are closed or sealed.

Treatment and Aeration Buffer Zone Overlap: If treatment or aeration buffer zones overlap from more than one methyl bromide fumigation, then to determine the treatment and aeration buffer zones, the licensed/certified applicator must:

- calculate the ***total volume fumigated*** for all the sites.
- select the ***highest dosage*** from the multiple fumigations,
- select the ***lowest percent retained*** from the multiple enclosures, and
- select the ***longest air exchange rate***.

Using those inputs, look up the buffer zone size. This distance must be used for both the treatment and aeration buffer zones for each site.

TREATMENT AND AERATION BUFFER ZONE ENTRY RESTRICTIONS

Entry by any person, except the licensed/certified applicator supervising the fumigation, or persons under their direct supervision, is prohibited in the treatment buffer zone and in the aeration buffer zone. Authorized persons who enter the treatment or aeration buffer zones must follow the personal protective equipment requirements specified for fumigation handlers on this label. The licensed fumigator responsible for the fumigation must inform all workers of the requirements relating to the use of personal respiratory protection equipment and to the use of monitoring/detection equipment. All workers must be informed by the licensed fumigator or someone under their direct supervision of the

concentration limits for entry (**1.0 ppm**) and the requirement for methyl bromide monitoring, as stated in the “**Work Time Restrictions**” section.

If a structure within the treatment buffer zone or aeration buffer zone is not occupied, ensure that persons do not enter the structure until the aeration buffer zone is terminated. For structures that have been vacated, persons may not re-enter until one air sample for methyl bromide, taken in the breathing zone on each floor of the structure after the termination of the aeration buffer zone indicates **1.0 ppm or less** methyl bromide. The sampling requirement does not apply to unoccupied buildings used for storage (e.g. sheds, barns, garages).

The fumigation site must be continually monitored (i.e. according to a schedule made by the licensed/certified applicator as per site characteristics and environmental conditions and as stated in the **Fumigation Management Plan**) as well as at several locations along the buffer zone perimeter to ensure that liberation of gas from the treated commodity does not result in the development of unacceptable levels of methyl bromide. If at any time the person monitoring methyl bromide levels detects concentrations greater than **1.0 ppm**, the area must immediately be cleared of all individuals who are not wearing respiratory protection as outlined in the “**Respirator Requirements and Work Time Restrictions**” section.

Individuals must be excluded from the buffer zones to the extent possible. Appropriate respiratory protection, as outlined in the section “**Respirator Requirements and Work Time Restrictions**” MUST be worn if entry into the fumigated site is required.

If the fumigation site is to be entered after fumigation, it must be aerated until the level of methyl bromide is at or below **1.0 ppm** in the fumigation **site** and the treatment and aeration buffer zones. Otherwise, appropriate respiratory protection (as outlined in “**Respiratory Protection and Work Time Restrictions**”) must be worn.

Local, provincial, or federal officials performing inspection, sampling, or other similar official duties related to the fumigation are not excluded from the treatment area, treatment buffer zone, or aeration buffer zone by this label. The licensed/certified applicator supervising the **application** and the owner of the establishment where the application is taking place are not authorized to, or responsible for, excluding those officials from the treatment area, treatment buffer zone, or aeration buffer zone.

Exceptions to Treatment and Aeration Buffer Zone Entry Restrictions: Only if necessary, should authorized pesticide applicators/handlers or workers be present in the treatment or aeration buffer zones. **All** workers (including authorized pesticide applicators/handlers) in the buffer zones, MUST wear respiratory protection as outlined in the “**Respirator Requirements and Work Time Restrictions**” section.

There are two **exceptions** for entry into the treatment buffer zones and aeration buffer zones:

1. **Occupied Structure Exception:** Occupants of a structure that is within the treatment/aeration buffer zone may remain in the structure, *provided* continuous real-time monitoring indicates that methyl bromide concentrations are **1.0 ppm or less** within the occupied structure and the treatment time will be less than 8 hours. Fumigation handlers must monitor the air concentrations. This exception only applies to structures occupied by occupational workers. It does not apply to homes, apartment buildings, schools, hospitals, nursing homes, employee housing centers, or other prohibited sites. To use this exception, the FMP must state the distance of the occupied structure to the treatment area, the method of conducting the real time monitoring for methyl bromide during the period when the treatment buffer zone and aeration buffer zone are in force, and specific procedures for immediate intervention, such as cessation of aeration, evacuation of building, or other procedures if the concentration of methyl bromide exceeds **1.0 ppm at any time**.
2. **Transit Exception:** Limited transit through treatment and aeration buffer zones is allowed if brief and unavoidable. Routine or repeated work-related tasks are prohibited in the treatment and aeration buffer zones. No person is allowed to transit through a treatment or aeration buffer zone for more than 30 cumulative minutes in a 24-hour period. To use this exception, the FMP must state the distance from the treatment area to areas where transit is anticipated, the estimated length of time persons in transit will be in the treatment buffer zone or aeration buffer zones, and the rationale why transit through these buffer zones will not exceed 30 minutes. No transit exception when horizontal exhaust stacks are used. Persons in transit in the treatment or aeration buffer zones during the fumigation or aeration periods **MUST** follow the requirements, as outlined in the brochure – “Respirator Requirements and Work Time Restrictions” section.

IX Add a “PLACARDING OF TREATMENT AREAS, TREATMENT BUFFER ZONES, AND AERATION BUFFER ZONES” section containing the following:

When using METH-O-GAS® Space Fumigant, placard or post all entrances to the treatment area and treatment buffer zones with warning signs in accordance with provincial/territorial regulations.

The licensed/certified applicator in charge of the fumigation (or someone under their supervision) must post warning placards around both the treatment area and the treatment buffer zone perimeter before the actual fumigation treatment. The licensed/certified applicator must placard or post warning signs at all usual points of entry, all entrances to the treatment area, and along other likely routes of approach where people not under the operator’s control may be in close proximity to the fumigated site and the treatment buffer zone. Placards should be placed in advance of the fumigation to keep unauthorized persons away. Some examples of points of entry include, but are not limited to, roadways, sidewalks, paths, and bike trails. Some examples of likely routes of approach

are the area between a fumigation site and a roadway, or the area between a treatment buffer zone site and a housing development.

Posting of warning signs for the treatment and aeration buffer zone perimeters is required, UNLESS there is a physical barrier (e.g., fence) that prevents access into the treatment buffer zone. Once the fumigation is complete, the warning placards MUST be relocated to establish the aeration zone perimeter. Such signs must only be removed when aeration has occurred and when the air concentration of methyl bromide is monitored as described in this label and indicates that methyl bromide levels are **1.0 ppm** or less. The warning signs at entrances to fumigated structures may only be removed by the licensed/certified applicator in charge of the fumigation (or someone under their supervision).

Signs must be legible during the entire posting period. Placards must be at least 28 cm long and 21 cm wide and made of substantial material that can be expected to withstand adverse weather conditions. They must bear the following information in both English and French:

1. The signal word **DANGER** at a minimum height of 7 centimetres and the SKULL and CROSSBONES symbol at a minimum height of 2.5 centimetres in red.
2. The **DO NOT WALK** symbol at a minimum height of 2.5 centimetres in red.
3. The statement, “**Area and/or commodity under fumigation, DO NOT ENTER.**” at a minimum height of 2.5 centimetres in one or more colours contrasting with the white background.
4. The statement, “**Methyl Bromide Fumigant in use**” at a minimum height of 2.5 centimetres in one or more colours contrasting with the white background.
5. The date and time when the fumigation begins and the date and time when the aeration is completed.
6. The name of fumigant and product used at a minimum height of 1.5 centimetres.
7. Contact information: name, address, and telephone number of the licensed/certified applicator supervising/performing the fumigation. Placards must bear a 24-hour emergency response telephone number.

For railroad hopper cars, placards must be placed on both sides of the car near the ladders and next to the top hatches into which the fumigant is introduced.

For fumigation on vessels, placards must be placed near the gangways and the entrances that lead to a space that is to be fumigated and shall not be removed until a clearance certificate has been issued by the fumigator-in-charge. The placard must also correspond to the requirements set out in the CFTR.

Do not enter or allow entry by anyone other than fumigation handlers following the “**Respirator Requirements and Work Time Restrictions**” into the treatment area, treatment buffer zone, and aeration buffer zone until the signs are removed, except as stated in the “**Exceptions to Treatment and Aeration Buffer Zone Entry Restrictions**” section of the label.

X Add an “**AERATION PERIOD**” section containing the following:

The aeration period starts at the end of the treatment period and continues until:

- The concentration of methyl bromide is measured to be **1.0 ppm or less AND**
- The minimum time specified below has elapsed:
 - 4 hours, if using active aeration; OR
 - 12 hours, if using passive aeration; AND the minimum aeration period has elapsed, if a minimum aeration period is specified for the treated commodity in the tables in Appendix 1 of this brochure.
- Exceptions to the Minimum Time Requirement:
 - For vacuum chambers at least 4 Air Washes must be done before the commodity can be moved from the chamber. An Air Wash is an alternating cycle of pressurizing and depressurizing a vacuum chamber to achieve aeration. Vacuum chambers accelerate the rate of desorption of the methyl bromide.
 - If this exception is used, the FMP must explain the designation of the vacuum chamber and the number of air exchanges per hour.

Taking Concentration Measurements:

- For measurements intended to release or move a commodity, stop fans.
- Take concentration measurements in the air space immediately around the treated commodity and, when feasible, inside cartons or boxes.
- For structural fumigations, take concentration measurements in the breathing zone of the area of the structure to be released.

Moving Commodity before Aeration Period is Complete:

For commodities treated at normal atmospheric pressure, fumigated commodities may be moved from the treatment area to continue aeration in a Secondary Aeration Location provided:

- the concentration of methyl bromide is measured to be **3.0 ppm** or less as specified in the “**Taking Concentration Measurement**” section of this label,
- at least ten air exchanges have been completed in the treatment area; and
- during removal of commodity from fumigation chambers, all aeration fans must continue to run while handlers enter and exit the chamber to remove the commodity.

The Treatment area PPE, Respirator Requirements & Work Time Restrictions, and monitoring requirements apply to the secondary aeration location to which the fumigated commodity is moved, beginning at the time it is moved and ending at the termination of the aeration period. If methyl bromide levels are unknown or at or below **3.0 ppm**, appropriate respiratory protection must be worn or the Work Time Restrictions (as

specified in the “**Respirator Requirements and Work Time Restrictions**” section) must be followed.

If a combination of aeration techniques is used, the minimum aeration period may be prorated to reflect the techniques used. For example, if two hours of active aeration occur in the treatment area before the commodity is moved to a storage area, then that constitutes one-half of the required minimum aeration period (2 hours out of 4 hours for active aeration). If the separate area uses passive ventilation, then the separate area would have to be passively ventilated for at least 6 hours (one half of the 12 hours for passive ventilation) before handlers would be permitted to handle the treated commodity.

Commodities aerated using a combination of aeration techniques may be released when the concentration of methyl bromide in the air space immediately around the commodity is measured to be **1.0 ppm** or less and the prorated minimum aeration period has been completed. The level of methyl bromide gas may be higher at the core of the commodity than the surrounding air. Monitoring is required when unloading or otherwise disturbing a commodity that has been fumigated to ensure that liberation of gas from the treated commodity does not result in unacceptable levels of methyl bromide.

Record the location and time when the commodity was moved and method for achieving 10 air exchanges in the pesticide application record.

Releasing Fumigated Commodities and Structures:

- After the aeration period is completed by one of the aeration methods above, the commodity or structure may be released.
- After the commodity or structure is released, record the date and time of the release in pesticide application records.
- Record the concentration reading date, time, and concentration measured, in pesticide application records.

XI Add an “**EMERGENCY PREPAREDNESS MEASURES**” section containing the following:

For each “**difficult to evacuate site**” within an estimated 16 meters beyond the perimeter of the treatment or aeration buffer zones, the licensed/certified applicator must conduct fumigation site monitoring and provide “information for neighbours”. “**Difficult to evacuate**” is defined as schools (preschool to grade 12), provincially licensed day care centers, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons) as outlined below. Confirm all the appropriate local authorities (fire departments, police departments, etc.) have been notified as per label instructions, local ordinances, or instructions of the client.

Fumigation Site Monitoring:

From the start of the application until the aeration buffer zone period expires, a licensed/certified applicator or fumigation handler(s) under their supervision must:

- Monitor for methyl bromide with a direct read device in areas between the treatment and aeration buffer zone perimeters and residences and businesses that trigger this requirement.
- Monitoring must begin within 1 hour of the start of the application and continue until the treatment and aeration buffer zone period expires with a minimum of 2 air samples taken at least 1 hour apart every 6 hours during the treatment and aeration buffer zone periods.
- The FMP must include the licensed/certified applicator's plans for where, when, and how monitoring will be performed. Air sampling results must be recorded.
- Implement the emergency response plan immediately if an air sample is greater than or equal to **1.0 ppm** for methyl bromide.

Information for Neighbours:

The licensed/certified applicator supervising the application must ensure that residences and businesses that trigger the requirement have been provided the following information at least 1 week before the first fumigation begins and must be repeated annually or within 30 days of a change in the FMP, whichever occurs first.

- That methyl bromide fumigation(s) will take place
- The location(s) of the treatment area(s)
- Name of the product(s) to be used and the PCPA Registration number(s)
- Contact information for the licensed/certified applicator(s) supervising the fumigation(s)
- Time period(s) when the application(s) is/are planned to take place (must not exceed 1 year from the date the information is provided)
- Signs and symptoms of exposure to methyl bromide. See “**Note to Physician**” section of this label.
- What to do and who to call if you believe you are being exposed (911 in most cases).

The Information for Neighbours may be provided through mailings, door hangers, or other methods that effectively communicate the information above to the residents and/or business owners/operators.

- XII Add an “**SITE SPECIFIC FUMIGATION MANAGEMENT PLAN (FMP)**” section containing the following:

A FUMIGATION MANAGEMENT PLAN MUST BE WRITTEN FOR ALL FUMIGATIONS PRIOR TO ACTUAL TREATMENT

Prior to fumigating, the licensed/certified applicator supervising the fumigation must verify that a site-specific fumigation management plan (FMP) exists. The FMP is intended to ensure a safe and effective fumigation and must be devised to cover the application and treatment period, aeration, and disposal of the fumigant so as to keep any human exposures to methyl bromide to a minimum and help ensure the adequate control

of pests. The licensed/certified applicator in charge of the fumigation is responsible for working with the Person in Charge of the Facility or Agricultural Establishment (“owners”) and/or responsible employees of the site to be fumigated to develop a site-specific FMP. The licensed/certified applicator supervising the fumigation must ensure that the FMP is up-to-date and applicable to the fumigation before it takes place.

Before the start of any fumigation, the licensed/certified applicator supervising the fumigation must verify in writing (sign and date) that the FMP reflects current site conditions and that it addresses all elements identified in this label.

For situations where an initial FMP is developed and certain elements do not change for the fumigation, only elements that have changed need to be updated in the site-specific FMP provided that the licensed/certified applicator supervising the application has verified that those elements are current and applicable to the fumigation site before the fumigation begins, and record-keeping requirements are followed for the entire FMP (including elements that do not change).

The FMP must document the characteristics of the site, the treatment and aeration buffer zones, include appropriate monitoring and notification requirements and include a record that the following have been completed:

1. Inform the person in charge of the facility where the fumigation will take place that all workers must complete mandatory annual training as outlined in the brochure “Mandatory Annual Training”. Training includes information on the hazards of the product, the use of safety equipment (i.e., respiratory protection monitoring equipment), and the exposure limit of **1.0 ppm**.
2. The Licensed/Certified Applicator, or a person under their supervision, must inspect the site to determine its suitability for fumigation. The application site consists of the treatment area and any structure that the treatment area is inside of.
3. Before fumigating, the licensed/certified applicator, or a person under their supervision, must assess the application site for any changes since the last application that could affect the efficacy or safety of the fumigation. This assessment must include a review of the most recent fumigation log from the application site and the most recent monitoring data from adjacent, occupied buildings, where such documents are available. In addition, the licensed/certified Applicator, or a person under their supervision, must consult the site manager regarding changes to the application site monthly, or if no fumigation has occurred at the application site for a month or more, upon resumption of fumigation activities.

If the licensed/certified applicator determines, based on the assessment, that modifications to the application site are required to ensure efficacy or safety, the basis for this conclusion, and confirmation that the modifications were made prior to fumigation, shall be recorded.

When sealing is required, the licensed/certified applicator must consult previous records for any changes to the site/structure, seal leaks, and monitor any occupied adjacent buildings to ensure safety.

4. The licensed/certified applicator, or a person under their supervision, prior to each fumigation must review any available existing FMPs, Safety Data Sheets (SDS), methyl bromide label and brochure, mandatory training materials and records, and other relevant safety procedures for the specific location or site, and consult with owners (whose structure or commodity is fumigated) and appropriate employees, if available.
5. The licensed/certified applicator, or a person under their supervision, must consult company officials in the development of procedures and appropriate safety measures for nearby workers that will be in and around the area during application and aeration.
6. The licensed/certified applicator, or a person under their supervision, must consult with company officials to ensure that an appropriate monitoring plan will be in place to confirm that nearby workers and bystanders will not be exposed to levels above the allowed methyl bromide safety limit (i.e. **1.0 ppm**) during application, fumigation and aeration. This plan must consider all of the treatment and aeration buffer zone requirements and demonstrate that nearby residents will not be exposed to concentrations above the allowable limits.
7. The licensed/certified Applicator, or a person under their supervision, must develop an appropriate exterior monitoring plan that will conform with the requirements of the treatment and aeration buffer zones to ensure that nearby handlers and bystanders are not exposed to levels above the allowed limits during fumigation and aeration and consult with owners, or site managers, if available.
8. The licensed/certified applicator, or a person under their supervision, must determine the proper treatment and aeration buffer zones, according to the methyl bromide product label and record the dosage, fumigated volume, and other parameters used to determine treatment and aeration buffer zone distances.
9. The licensed/certified applicator, or a person under their supervision, must develop procedures for notification of local emergency responders in the event of an emergency (“Emergency Response Plan”) and consult with owners or site managers, if available. The Emergency Response Plan must comply with all requirements established by local emergency responders while remaining consistent with label requirements.

If local emergency responders have not established any requirements, or if requirements are minimal or contradict the label, then the plan shall still include, at a minimum, instructions on the persons or entities to contact if: (1) there is a spill, leak, equipment failure, or other emergency at the application site during a fumigation that presents a risks to humans or domestic animals; or (2) anyone at

the application site is experiencing symptoms of exposure.

The licensed/certified applicator, or a person under their supervision, must consult with local emergency responders at least annually to confirm the Emergency Response Plan conforms to their requirements, or, in the absence of such requirements, that the Emergency Response Plan contains the correct contact information.

10. The licensed/certified applicator, or a person under their supervision, must confirm the placement of warning placards around the fumigation site as described on the label. Placards should be placed to secure entrances and placed along other routes of approach into any site under fumigation and along the treatment and aeration buffer zone perimeters.
11. The licensed/certified applicator, or a person under their supervision, must document the following:
 - a. Credentials of the licensed/certified applicator in charge when the fumigant was introduced and when final clearance testing was completed (if different)
 - b. Credentials and/or names and contact information of all personnel members part of the fumigation/aeration prior to the induction of the fumigant and at the time the commodity is aerated (if different)
 - c. The commodity or structure being fumigated
 - d. The target pest (if known)
 - e. The amount of fumigant introduced into the treatment area
 - f. Date and time of the fumigant introduction
 - g. Date and time final clearance testing completed
 - h. Monitoring specifications and results as noted in the “EMERGENCY PREPAREDNESS PROCEDURES” section of this label,
 - i. Details regarding the information disseminated to “**difficult to evacuate sites**” within 16 meters of the treatment and aeration buffer zones, as specified in the “EMERGENCY PREPAREDNESS PROCEDURES” section of this label and brochure.

This information may be documented on a form designated for this purpose or on supplemental documents such as those identified below, provided that each data point is documented in at least one location.

12. The licensed/certified applicator, or a person under their supervision, must confirm the required safety and monitoring/clearance equipment (including equipment required for entry into an area under fumigation) is in place and the necessary, trained fumigation handlers are available to complete a safe, effective fumigation.

It is important to note that some Fumigation Management Plans will be more comprehensive than others. All Fumigation Management Plans should reflect the

experience and expertise of the licensed/certified applicator and circumstances at and around the site/structure and the treatment and aeration buffer zones. Elements of the FMP may be fulfilled through the use of supplemental documents such as fumigation logs, service reports, pesticide application records, facility maps, facility emergency plans, provincial or federally required forms, and other supplemental documents prepared for or used during the actual fumigation.

In addition to the development of the Fumigation Management Plan, the licensed/certified applicator must read the entire label and the brochure and follow its directions carefully. If the licensed/certified applicator has any questions about the development of a Fumigation Management Plan, contact the product registrant for further assistance.

RECORDKEEPING

The licensed/certified applicator's employer or the licensed/certified applicator supervising the fumigation must maintain all records required under the provisions of this label including the FMP and supplemental documents in accordance with other federal, provincial and territorial regulations and ordinances used to fulfill FMP requirements, information on incidents and complaints, and all air monitoring results for two years from the date of the fumigation. During the two-year period following a fumigation, these records must be made available upon request to any provincial, municipal, or federal pesticide enforcement personnel.

During the treatment and aeration buffer zone periods, the licensed/certified applicator must make a copy of the FMP and the associated SDS available for viewing by all fumigation handlers. The licensed/certified applicator must ensure the FMP is available upon request at the fumigation site while the treatment and aeration buffer zones are in effect.

Records of air monitoring results must include:

- Date of fumigation,
- Monitoring equipment used,
- Location and time of each required sample, and
- Concentration of methyl bromide found for each required sample.

Records of spills, equipment failures and other emergencies must include:

- Description of what happened
- Emergency procedures followed
- Whether the incident was reported to the provincial lead agency or other agency.

Records of complaints related to the fumigation received by the applicator during or after the fumigation must include:

- Contact information for the person filing the complaint
- Description of control measures or emergency procedures followed after the complaint, if any.

Records must be maintained and made available upon request to any provincial, municipal, or federal pesticide enforcement personnel.. A copy of the records must be sent to the registrant at the end of the calendar year. These will be summarized (minus personal information such as name and location) and sent to Health Canada's Pest Management Regulatory Agency by the registrant on an annual basis.

Records must also be kept and maintained in compliance with applicable requirements under the *Ozone-Depleting Substances And Halocarbon Alternatives Regulations* (ODSHAR) under the authority of the *Canadian Environmental Protection Act* (CEPA, 1999) and the *Cargo, Fumigation and Tackle Regulations* (CFTR) under the authority of the *Canada Shipping Act, 2001*. For further information, contact Environment And Climate Change Canada regarding the ODSHAR and contact Transport Canada regarding the CFTR.

XIII Add a "GUIDANCE FOR PREPARATION OF A FUMIGATION MANAGEMENT PLAN" section containing the following:

A Fumigation Management Plan (FMP) is an organized, written description of the required steps involved to help ensure a safe, legal and effective fumigation. It will also assist you and others in complying with pesticide product label requirements. The guidance that follows is designed to help assist you in addressing all the necessary factors involved in preparing for and fumigating a structure and/or area.

This guidance is intended to help you organize any fumigation that you might perform, **PRIOR TO ACTUAL FUMIGATION**. It is meant to be somewhat prescriptive, yet flexible enough to allow the experience and expertise of the fumigator to make changes based on circumstances which may exist in the field. By following a step-by-step procedure, yet allowing for flexibility, a safe and effective fumigation can be performed.

Before any fumigation begins, carefully read and review the product label and the brochure. This information must also be given to the appropriate company officials (supervisors, foreman, safety officer, etc.) in charge of the site. Preparation is the key to any successful fumigation. If you do not find specific instructions for the type of fumigation that you are to perform listed in this Brochure, you will want to construct a similar set of procedures using this document as your guide or contact Lanxess Corporation for assistance (see primary panel for contact information). Finally, before any fumigation begins, you must be familiar with and comply with all applicable federal, provincial and municipal laws and regulations. The success of the fumigation is not only dependent on your ability to do your job but also upon carefully following all rules, regulations and procedures required by governmental agencies.

CHECKLIST GUIDE FOR A FUMIGATION MANAGEMENT PLAN

This checklist is provided to help you take into account factors that must be addressed prior to performing all fumigations. It emphasizes safety steps to protect people and property. The checklist is general in nature and cannot be expected to apply to all types of fumigation situations. It is to be used as a guide to prepare the required Fumigation Management Plan. Each item must be included if it is applicable to the fumigation. However, it is understood that each fumigation is different and not all items will be necessary for each fumigation site.

A. PRELIMINARY PLANNING AND PREPARATION

1. Determine the purpose of the fumigation (a, b, or c) and ensure the application is (as defined by the *Ozone-depleting Substances and Halocarbon Alternatives Regulations*): either a quarantine application or a pre-shipment application.
 - a. Control of insect infestation
 - b. Control of vertebrate pests
 - c. Plant pest quarantine
2. Determine the type of fumigation. For example:
 - a. Space: tarp, mill, warehouse, food processing plant,
 - b. Vehicle: railcar, truck, van, container
 - c. Commodity: raw agricultural or processed foods or non-food
 - d. Type of storage: vertical silo, farm storage, flat storage, etc.
 - e. Vessels: a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water, without regard to method or lack of propulsion, and includes such a vessel that is under construction..
3. Fully acquaint yourself with the site and commodity to be fumigated, including:
 - a. The general structure layout, construction (materials, design, age, maintenance), of the structure, fire or combustibility hazards, connecting structures and escape routes, above and below ground, and other unique hazards or structural characteristics. Prepare, with the owner/operator/person in charge, a drawing or sketch of structure to be fumigated, delineating features, hazards, and other structural characteristics.
 - b. The number and identification of persons who routinely enter the area to be fumigated (employees, visitors, customers, etc.)
 - c. The specific commodity to be fumigated, its mode of storage, and its condition.
 - d. The previous fumigation/treatment history of the commodity, if available.
 - e. Accessibility of utility service connections
 - f. Nearest telephone or other means of communication. Mark the location of these items on the drawing/sketch.
 - g. Emergency shut-off stations for electricity, water and gas. Mark the location of these items on the drawing/sketch.
 - h. Current emergency telephone numbers of local health, fire, police, hospital and physician responders.

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- i. Name and phone number (both day and night) of appropriate company officials.
 - j. Check, mark and prepare the points of fumigant application locations if the job involves entry into the structure for fumigation.
 - k. Location of command centre
 - l. Treatment period considerations:
 1. Product to be used
 2. Minimum treatment period, as defined and described by the label use directions.
 3. Down time required to be available
 4. Aeration requirements
 5. Clean-up requirements, including dry or wet deactivation methods, equipment, and personnel needs, if necessary.
 6. Measured and recorded commodity temperature and moisture
 - m. Determination of dosage:
 1. Cubic footage or other appropriate space/location calculations
 2. Structure sealing capability and methods
 3. Labelled required dosage
 4. Temperature (commodity and ambient air), humidity, wind
 5. The commodity/space to be treated
 6. Commodity/space volume
 7. Past history of fumigation of the site/structure
 8. Treatment period
 9. Amount of fumigant used
 10. Actual concentration achieved
 - n. Distance to other on-site and neighbouring off-site structures, recreational areas or areas where bystanders may be exposed.
 - o. Site of aeration vent(s) to be opened to aerate site/structure.
 - p. Treatment and aeration buffer zone requirements, including provisions for areas not under the control of the owner/operator of the application site (e.g. agricultural areas, roads and rights of way, publicly owned and/or operated areas, “**difficult to evacuate sites**” and other “**residential areas**”).

B. PERSONNEL

1. Confirm in writing that all personnel in and around the site to be fumigated have been notified including any difficult-to-evacuate sites prior to application of the fumigant. Consider using a checklist that each employee initials indicating they have been notified.
2. Instruct all fumigation handlers to read the brochure concerning the hazards that may be encountered, and about the selection of personal protection devices, including sufficiently sensitive detection equipment.
3. Confirm that all personnel are aware of and know how to proceed in case of an emergency situation.
4. Instruct all personnel on how to report any accident and/or incidents related to

fumigant exposure. Provide a telephone number for emergency response reporting.

5. Instruct all personnel to report to proper authorities any theft of fumigant and/or equipment related to fumigation.
6. Establish a meeting area for all personnel in case of an emergency.

C. MONITORING

1. Safety

- a. Scheduled ambient air monitoring of methyl bromide concentrations must be conducted, downwind, along the treatment and aeration buffer zone perimeters to prevent exposure of unprotected workers and bystanders to concentrations of methyl bromide greater than 1.0 ppm*** and to determine where exposures may occur. It may be necessary to monitor gas levels in other areas as well. Document where monitoring will occur.
- b. Monitor (and record) the wind direction and adjust the methyl bromide monitoring if wind direction changes over the fumigation/aeration period.
- c. Keep a log or manual of monitoring records for each fumigated site and the treatment and aeration buffer zones. This log must, at a minimum, contain the monitoring equipment used, location and timing of each sample, number of readings taken and level of concentrations found in each location.
- d. When monitoring, document any methyl bromide level even if it is present at or below the limit of detection.
- e. From the beginning of the fumigant application and until the end of the treatment period, the licensed/certified applicator supervising the fumigation supervising fumigant applicator/handler or persons under their supervision must periodically monitor (i.e. according to a schedule made by the licensed/certified applicator as per site characteristics and environmental conditions as stated in the **Fumigation Management Plan**) methyl bromide levels at several locations along the treatment and aeration buffer zone perimeters. During aeration, the licensed/certified applicator must periodically monitor (i.e. according to a schedule made by the licensed/certified applicator as per site characteristics and environmental conditions as stated in the **Fumigation Management Plan**) methyl bromide levels at several locations along the treatment and aeration buffer zone perimeters.

Only if necessary, should workers be present in the treatment and aeration buffer zones. All workers present in the buffer zones during the fumigation or aeration periods **MUST** wear appropriate respiratory protection, as outlined in the brochure – “**Respirator Requirements and Work Time Restrictions**” section.

*****NOTE: An evacuation action may be necessary when methyl bromide levels exceed 1.0 ppm.** To determine methyl bromide levels, readings may be taken using a real-time detection device or a direct reading detection device with a sensitivity of **0.5 ppm or lower**.

D. NOTIFICATION

1. Confirm all the appropriate local authorities (fire departments, police departments, etc.) have been notified as per label instructions, local ordinances, or instructions of the client.

Prepare written procedure (“Emergency Response Plan”), which contains explicit instructions, names, and telephone numbers so as to be able to notify local authorities if methyl bromide levels are exceeded in an area that could be dangerous to bystanders and/or domestic animals. Elaborate in this section the key elements of an Emergency Response Plan including reference to evacuation procedures. Evacuation procedures must take into consideration any “**difficult to evacuate sites**”, which may take longer to evacuate. Difficult to evacuate sites are defined as schools (preschool to grade 12), provincially licensed day care centres, nursing homes, assisted living facilities, hospitals, in-patient clinics, and prisons.

E. SEALING PROCEDURES

1. Sealing must be adequate to control the pests. Care should be taken to ensure that sealing materials will remain intact until the fumigation is complete.
2. If the site has been fumigated before, review the previous Fumigation Management Plan for previous sealing information.
3. Make sure that construction/remodeling has not changed the site/structure in a manner that will affect the fumigation.
4. Warning placards must be placed to secure any entrance into the treatment site and along other likely routes of approach.

F. APPLICATION PROCEDURES AND TREATMENT PERIOD

1. Plan carefully and apply the product in accordance with the label requirements.
2. At least two persons, a licenced/certified applicator a person trained in accordance with the label and the brochure working under the direct supervision of the licenced/certified applicator must be present during fumigation of structures when entry into the structure for application of the fumigant is required. Appropriate respiratory protection, as outlined in the “**Respirator Requirements and Work Time Restrictions**” section **MUST** be worn at all times during delivery/dispensing of product, while attending to spills and leaks and while monitoring methyl bromide levels.

3. Apply fumigant from the outside when and where appropriate. Large-scale fumigations may require one or more employees of the fumigator and/or other individuals under contract with the fumigator or the fumigated facility for this purpose be assigned to guard the fumigation site and the treatment and aeration buffer zones when entry by unauthorized persons cannot otherwise be reliably prevented. Refer to provincial pesticide regulations.
4. When entering sites/structures, always follow applicable provincial legislation for confined spaces.
5. Document that the receiver of transport vehicles shipped piggyback by rail and/or shipping containers fumigated in-transit has been notified.
6. Turn off any electric lights and heat sources in the treatment site and/or structure, as well as all nonessential electrical motors.

G. POST-APPLICATION OPERATIONS

1. Large-scale fumigations may require one or more employees of the fumigator and/or other individuals under contract with the fumigator or the fumigated facility for this purpose be assigned to guard the fumigation site and the treatment and aeration buffer zones when entry by unauthorized persons cannot otherwise be reliably prevented. Refer to provincial pesticide regulations.
2. Ventilate and aerate the treatment site in accordance with site and/or structural limitations and nearby occupied areas so as to minimize bystander exposure.
3. Turn on ventilating or aeration fans, where appropriate.
4. Determine methyl bromide concentration in the treatment environment from outside if possible. As much as possible limit exposure, for example, by using monitoring equipment that measures indoor concentrations and displays results outside of the fumigated site. Use a sufficiently sensitive and accurate gas detector before entry into a fumigated site and/or structure to determine fumigant concentration.
5. During aeration, monitor gas levels periodically (i.e. according to a schedule made by the licensed/certified applicator as per site characteristics and environmental conditions as stated in the **Fumigation Management Plan**) until the fumigated site and/or structure is ready for entry.
6. Keep written records of monitoring to document completion of aeration.
7. Consider temperature when aerating.
8. Ensure that aeration is complete before moving treated transport vehicles onto public roads.

9. The warning signs/placards may only be removed by the licensed/certified applicator (or someone under their supervision) only after aeration of the treatment site is complete and the methyl bromide level is at or below 1.0 ppm in the treatment site and the aeration buffer zone as determined by using a detection device with a sensitivity of **0.5 ppm or lower**.
 10. Inform business/client that employees/other persons may return to work or otherwise be allowed to enter the aerated site and/or structure.
- XIV Replace the “COMMODITY, FOOD, AND FEED FUMIGATION DIRECTIONS” section with a “PRECAUTIONARY PROCEDURES FOR ALL USES” section containing the following:

The following precautionary procedures are required for all uses:

This product is only to be used for control of pests for quarantine/regulatory commodity fumigation only and applications must only be (as defined by the *Ozone-depleting Substances and Halocarbon Alternatives Regulations*) either a (1) quarantine application (treatment with methyl bromide of a commodity, product, facility or means of conveyance, when the treatment is intended to prevent the spread of, or to control or eradicate, pests of quarantine significance in order to meet a requirement of the importing country or a requirement of Canadian law) or a (2) pre-shipment application (treatment with methyl bromide within 21 days prior to export, of a commodity or product that is to be entirely exported to another country, or a means of conveyance, in order to meet a requirement of the importing country or a requirement of Canadian law).

If monitoring indicates concentration of fumigant is insufficient to be effective for the target pest, additional fumigant may be added as required; but concentration is not to exceed the maximum dosage at the time of application.

Methyl bromide is a highly hazardous material and should only be used by individuals trained in its proper use, the use of the required respiratory equipment and detector devices and emergency procedures. Before using, read and understand the entire label and this brochure and follow all precautions, safety recommendations and directions.

When used for general space fumigation, enclosed spaces and gas tight coverings, at least two persons, a licensed/certified applicator, and a person, trained in accordance with the label and the brochure working under direct supervision of the licensed/certified applicator must be present during the treatment period, at the initiation of aeration, and when testing for re-entry. All fumigation handlers must be under direct on-site supervision of the certified/licensed applicator at the start of the fumigation, at the initiation of aeration, or when testing for re-entry into the treatment area until the commodity/structure is fully aerated (methyl bromide concentrations are ≤ 1.0 ppm). Only one fumigation handler needs to be present if monitoring is conducted remotely (from outside the treatment area).

When fumigating tanks, silos, etc., of stored bulk flour, empty or draw down flour to less than one-half meter deep. Do not introduce liquid methyl bromide into flour storages. Set up fans or air circulation to avoid localized high concentrations of methyl bromide when shooting gaseous methyl bromide into the storage. Do not overdose flour storages. It is recommended that the fumigant be applied outside flour storages that are inside buildings and allowed to drift in through open hatches.

Treatment and aeration buffer zone must be established for all fumigated sites as per the instructions outlined in the “**Treatment and Aeration Buffer Zones**” section. All workers present in the buffer zones **MUST** wear appropriate respiratory protection, as outlined in the “**Respirator Requirements and Work Time Restrictions**” and “**Treatment & Aeration Buffer Zone Requirements**” sections.

A Fumigant Management Plan (FMP) must be written for all fumigations prior to actual fumigation and must be devised for application, aeration and disposal of the fumigant so as to keep exposures to methyl bromide to a minimum. Refer to the “**Site-Specific Fumigation Management Plan**” section.

Observe all precautionary and safety statements mentioned elsewhere in this brochure.

2.3 Label amendments relating to the environmental assessment

For product(s) with registered QPS uses

Add a new section titled “**ENVIRONMENTAL PRECAUTIONS**” with the following :

Amend the statement: “This product is toxic to fish and wildlife. Keep out of lakes, streams and ponds” to “Toxic to aquatic organisms, birds and small wild mammals.”

Under the “**DIRECTIONS FOR USE**” section:

Add the statement: “Do not contaminate drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.”

Under the “**DISPOSAL**” section:

Add the statement: “For information on the disposal of unused, unwanted product, contact the provincial/territorial regulatory agency or the registrant. Contact the manufacturer and the provincial/territorial regulatory agency in case of a spill and for clean-up of spills.

Appendix VI Methyl Bromide Treatment and Aeration Buffer Zones

Directions for determining treatment and aeration buffer zone distances for fumigation with methyl bromide

Buffer zones for commodity and food handling structural applications are distributed across numerous tables. This appendix provides directions for determining the factors to use to identify the correct table for a given application.

Treatment buffer zones

For treatment buffer zones, the correct table can be found using the dosage, exposure time, the enclosure size, and the retention rate. The user should identify the dosage and exposure time that matches their application and find the treatment buffer zone table corresponding to those factors. Within the table, the user should select the column with the retention rate after treatment that represents the application and the row corresponding to the enclosure size.

ROUNDING: When the retention rate, enclosure size, or the dosage is not listed in the buffer zone tables, round up to the nearest retention rate, enclosure size, or dosage to calculate the aeration buffer zone distance.

Aeration buffer zones

The first step in determining the aeration buffer zone is to determine the aeration method from these five broad classifications:

- Passive aeration
- Active aeration with attached vertical stacks
- Active aeration with open-area vertical stacks
- Active aeration with no stacks
- Active aeration with horizontal stacks

Passive Aeration means the non-mechanical ventilation (for example, opening doors, windows or removing tarpaulin cover) of the treatment area.

Active Aeration, or “mechanical aeration” means the use of fans or any other mechanical devices to aerate or ventilate the treatment area.

- Attached vertical stacks – Enclosures that vent gas through a stack or vent above or on the roof or affixed to the side of a building/enclosure. Vertical stack heights are measured from the base of the exterior roof of a building/enclosure to the top of the stack. To use the attached vertical stack buffer tables all stacks must at least be as high as the height of the roof. Any attached vertical stack that vents below the height of the roof requires the active aeration with no stack buffer tables to be used.
- Open-area vertical stacks – Enclosures that vent gas vertically through a stack or vent in an open area that is 2 metres or more away from the side of a building/enclosure. Open-area stack heights are measured from the ground level to the top of the stack. The open-

area vertical stack height must be at least 2 metres, as measured from the ground level to the top of the stack, to be included in this category.

- No stacks – Enclosures that vent gas through windows, doors and cracks instead of only through a directed stack. If gas is vented through a combination of window/doors/cracks and a directed vertical stack, the no stack category must be used if less than 90% of the gas is vented through the vertical stack. Otherwise, a vertical stack table can be used.
- Horizontal stacks – Enclosures that vent gas through a horizontal stack or vent. Applications are prohibited for enclosure sizes of 14 160 m³ (500 000 ft³) or greater when using active aeration with horizontal stacks for ≤ 8 hours.

The **retention rate** after treatment is the percentage of the applied material that remains after treatment is completed and thus is the amount emitted during aeration. Directions on how to determine your retention rate are provided at the end of these instructions.

One of the key factors for the active aeration buffer zones is the **air exchange rate**, which is a measure of how many air dilutions occur per hour in the enclosure during aeration. If not readily available, the air exchange rate can be calculated from the fan capacity and the enclosure size as follows:

$$AER = \frac{\text{Fan Capacity (CMM)} \times 60 \left(\frac{\text{min}}{\text{hour}} \right)}{\text{Enclosure Size (m}^3\text{)}}$$

where AER is the air exchange rate per hour, fan capacity is in cubic metre per minute (CMM), and the enclosure size is in cubic metres. If there is more than one fan, add the results together.

The minimum air exchange rate provided is 0.1 air exchanges per hour. For air exchange rates below 0.1, use the Passive Aeration buffer zone tables.

The user should identify the dosage, aeration time, aeration method, stack height, air exchange and rate, that matches their application and find the aeration buffer zone table corresponding to those factors. Within the table, the user should select the column with the retention rate and the row corresponding to the enclosure size.

ROUNDING: When the retention rate, enclosure size, or the dosage is not specifically listed in the buffer zone tables, round up to the nearest retention rate, enclosure size, or dosage to calculate the aeration buffer zone distance.

When the air exchange rate or stack height is not specifically listed in the buffer zone tables, round down to the nearest air exchange rate or stack height.

Determining your retention rate

Fumigation enclosure retention depends on the type of enclosure. Tests can be run to determine each enclosure's level of retention. In terms of retention, there are three types of enclosures:

1. Vacuum chambers,
2. Retention-tested enclosures, and
3. Untested enclosures.

1. Vacuum Chamber

A vacuum chamber usually is a small, metal chamber in which fumigations are conducted under reduced atmospheric pressure. The reduced pressure allows fumigations to proceed much more quickly, because methyl bromide penetrates the commodity faster during treatment and fresh air penetrates faster during aeration. Fumigation and aeration can be completed in a few hours with vacuum chambers. Document that a fumigation enclosure qualifies as a vacuum chamber and retain the record with the FMP.

Vacuum chambers are assumed to retain 99% of methyl bromide.

2. Retention Tested

A retention tested enclosure usually is very different from vacuum chambers. Most chambers, silos, storage bins, sea/land containers, tarpaulin fumigations, and buildings are in this category. Many of these enclosures will retain methyl bromide very well. A retention test determines the percent of methyl bromide that leaks out of the enclosure each hour during the exposure time. See instructions for conducting a retention test and estimating the percent lost per hour for an enclosure below under the heading “Retention Testing for Fumigation Enclosures.”

3. Untested

Untested enclosures are fumigation enclosures that are not vacuum chambers and have not been retention-tested. Untested enclosures are assumed to retain 90% of methyl bromide.

Retention testing for fumigation enclosures

A retention test will determine the percent of methyl bromide that is retained in a fumigation enclosure during treatment. The applicator must ensure that the retention test is conducted correctly using the procedures listed below, that the retention test results are recorded and kept with the FMP and that the retention test is repeated annually.

The retention rate allows fumigation operators to compute treatment and aeration buffer zones with much greater accuracy than is possible for untested fumigation enclosures.

Definition: A Fumiscope is an instrument designed specifically for measuring high concentrations of methyl bromide.

Conducting a retention test

Any fumigation handler may conduct a retention test on a fumigation enclosure:

- Place the flexible tubing, such as Tygon™, Teflon™ into the enclosure to serve as sampling lines. There should be at least three sampling lines, depending on the volume of the enclosure. The larger the volume, the more lines are needed to get a precise reading.
- Follow the start-up instructions for the sampling instrument, which is usually a Fumiscope, although other instruments such as infrared spectrometers and photoionization detectors can be used. Note: The exhaust of the instrument must be vented away from all people or back into the enclosure.

- Following the label directions and precautions for a space fumigation, introduce methyl bromide into the enclosure in the amount that will result in the concentration within the enclosure of 16 kg per 1000 cubic metre.
- Measure the concentration inside the enclosure within the first few minutes of introduction to insure that the initial concentration is correct.
- Measure the concentration inside the enclosure when the exposure time is over (for example, 8 hours or 24 hours after the methyl bromide is introduced into the enclosure).
- Aerate the enclosure following label directions.
- Compute the retention rate using the average initial reading and the average final reading:

$$\text{Retention Rate} = 100 \times (\text{Average Final Reading} / \text{Average Initial Reading})$$

Additional buffer zone considerations

Multiple Methods: When fumigation enclosures are aerated using more than one aeration method, the largest of the aeration buffer zones is used for each enclosure at the work site.

Multiple Stacks: When fumigation enclosures use more than one aeration stack, each stack must meet all the requirements to qualify for a specific stack category.

Enclosure with Capture Systems

Systems are available that capture methyl bromide from the headspace around the commodity during aeration following commodity fumigation in enclosures. Rather than releasing the methyl bromide directly into the atmosphere, the methyl bromide is captured and recycled, recovered, or broken down into nonhazardous and non-volatile components.

Commodity fumigation systems equipped with highly efficient capture systems can reduce the size of the aeration buffer zone. Some examples of effective systems include: carbon adsorption systems, zeolite adsorption systems, and scrubbing systems. In order to reduce aeration buffer zones, the capture efficiency of the system must be obtained and be certified by the system manufacturer and the system must be monitored and maintained following the manufacturer's instructions. Once known, this value can be used to modify the retention rate and subsequently the size of the aeration buffer zone.

When enclosures with capture systems are used during aeration, the capture efficiency must be incorporated into the retention rate using the following equation.

$$\text{Retention Rate with Capture System} = \text{Enclosure Retention in \%} \times (100\% - \text{Capture Efficiency in \%})$$

Example: If a vacuum chamber is used, the retention rate is assumed to be 99%. If a capture unit with 90% capture efficiency is used during aeration, then the retention rate including the capture system would be roughly 10%. If the retention rate calculated is not available in the buffer zone table, the next highest retention rate must be used.

$$\text{Retention Rate with Capture System} = 99\% \times (100\% - 90\%) = 99\% \times 10\% = 9.9\% \approx 10\%$$

Treatment buffer zones - Buffer Zone Distance (m)

Buffer Zone Table 1 Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 2 Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 3 Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 4 Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 5 Dosage: 12 or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	21	20	18	15	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 6 Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	15	15	12	3	3	3	3	3	3	3
1420	43	43	40	38	30	9	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Exposure Time more than 8 hours

Buffer Zone Table 7 Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
21 240	3	3	3	3	3	3	3	3	3	3
28 320	3	3	3	3	3	3	3	3	3	3
70 790	3	3	3	3	3	3	3	3	3	3
141 580	3	3	3	3	3	3	3	3	3	3
212 380	55	53	47	38	3	3	3	3	3	3
283 170	93	91	85	76	47	3	3	3	3	3

Buffer Zone Table 8 Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	3	3	3	3	3	3	3	3	3	3
28 320	3	3	3	3	3	3	3	3	3	3
70 790	3	3	3	3	3	3	3	3	3	3
141 580	105	104	98	88	62	3	3	3	3	3
212 380	166	165	157	148	117	55	3	3	3	3
283 170	218	216	207	197	162	93	3	3	3	3

Buffer Zone Table 9 Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	3	3	3	3	3	3	3	3	3	3
28 320	24	24	3	3	3	3	3	3	3	3
70 790	72	70	64	56	30	3	3	3	3	3
141 580	172	169	163	154	123	62	3	3	3	3
212 380	247	245	236	224	189	117	3	3	3	3
283 170	312	311	299	285	242	162	47	3	3	3

Buffer Zone Table 10 Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	27	27	20	3	3	3	3	3	3	3
28 320	56	55	50	44	24	3	3	3	3	3
70 790	113	111	105	98	72	3	3	3	3	3
141 580	227	224	216	207	172	105	3	3	3	3
212 380	317	314	303	290	247	166	55	3	3	3
283 170	396	393	381	363	312	218	93	3	3	3

Buffer Zone Table 11 Dosage: 12 or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	6	6	5	3	3	3	3	3	3	3
1420	23	23	21	20	15	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	73	72	67	62	43	3	3	3	3	3
21 240	117	116	110	104	84	40	3	3	3	3
28 320	154	152	146	139	116	69	3	3	3	3
70 790	258	255	247	236	201	130	30	3	3	3
141 580	439	439	428	410	354	251	123	3	3	3
212 380	439	439	439	439	439	349	189	38	3	3
283 170	439	439	439	439	439	436	242	76	3	3

Buffer Zone Table 12 Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	6	6	5	5	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	20	20	18	17	12	3	3	3	3	3
1420	38	38	37	35	29	18	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	56	55	50	46	27	3	3	3	3	3
14 160	133	131	125	119	98	53	3	3	3	3
21 240	189	187	180	172	146	96	17	3	3	3

28 320	236	235	227	218	187	128	49	3	3	3
70 790	392	389	375	360	311	219	104	3	3	3
141 580	439	439	439	439	439	386	213	62	3	3
212 380	439	439	439	439	439	439	300	117	3	3
283 170	439	439	439	439	439	439	376	162	47	3

Aeration Buffer Zones - Buffer Zone Distance (m)

Aeration Time 8 hours or less

Active Aeration – Attached Vertical Stacks

Stack Height: 3 m

Buffer Zone Table 13 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 14 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 15 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 16 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 17 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 18 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	80	80	75	65	20	3	3
2830	3	3	3	3	3	3	3
7080	160	155	145	130	85	3	3

Buffer Zone Table 19 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	20	20	20	15	3	3	3
280	3	3	3	3	3	3	3
710	105	100	95	85	60	3	3
1420	225	225	215	200	155	80	3
2830	3	3	3	3	3	3	3
7080	370	365	350	330	265	160	3

Buffer Zone Table 20 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 21 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 22 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 23 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 24 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 25 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 26 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	125	125	115	100	3	3	3
2830	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	345	340	315	285	195	3	3

Buffer Zone Table 27 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 28 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 29 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 30 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 31 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 32 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 33 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 34 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 35 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 36 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 37 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 38 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 39 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 40 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 41 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 42 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 43 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 44 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 45 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 46 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 47 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 48 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 49 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 50 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 51 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 52 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 53 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 54 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Attached Vertical Stacks

Stack Height: 8 m

Buffer Zone Table 55 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 56 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 57 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 58 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 59 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 60 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 61 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	235	230	210	175	3	3	3

Buffer Zone Table 62 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 63 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 64 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 65 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 66 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 67 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 68 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 69 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 70 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 71 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 72 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 73 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 74 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 75 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 76 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 77 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 78 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 79 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 80 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 81 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 82 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 83 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 84 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 85 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 86 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 87 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 88 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 89 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 90 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 91 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 92 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 93 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 94 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 95 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 96 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Attached Vertical Stacks

Stack Height: 15 m

Buffer Zone Table 97 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 98 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 99 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate
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	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 100 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 101 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 102 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 103 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	235	230	210	175	3	3	3

Buffer Zone Table 104 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 105 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 106 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 107 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	3	3	3	3	3	3	3

Buffer Zone Table 108 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 109 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 110 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 111 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 112 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 113 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 114 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 115 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 116 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 117 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 118 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 119 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 120 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 121 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 122 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 123 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 124 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 125 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 126 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 127 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 128 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 129 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate
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	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 130 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 131 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 132 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 133 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 134 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 135 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 136 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 137 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	3	3	3	3	3	3	3

Buffer Zone Table 138 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Open-Area Vertical Stacks

Stack Height: 2 m

Buffer Zone Table 139 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	5	5	5	5	5	3	3
280	10	10	10	10	10	5	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 140 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	15	10	10	10	10	5	3
280	20	15	15	15	15	10	5
710	10	10	5	3	3	3	3
1420	25	20	20	15	3	3	3
2830	50	50	45	35	10	3	3
7080	105	100	95	90	55	3	3

Buffer Zone Table 141 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3
140	15	15	15	15	15	10	5
280	25	25	25	25	20	15	10
710	30	30	25	25	15	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	55	55	50	45	30	3	3
2830	90	90	85	80	65	10	3
7080	160	160	150	145	120	55	3

Buffer Zone Table 142 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	10	10	10	10	5	3	3
140	20	20	20	20	15	15	5
280	35	35	30	30	25	20	10
710	45	45	40	40	30	10	3
1420	75	75	70	70	55	25	3
2830	115	115	110	105	90	50	3
7080	230	225	210	190	160	105	3

Buffer Zone Table 143 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	15	15	10	10	10	5	3
140	25	25	25	25	20	15	10
280	40	40	40	35	30	20	10
710	60	55	55	50	40	20	3
1420	90	90	90	85	70	40	3
2830	150	150	140	130	110	75	3
7080	310	305	290	270	205	135	3

Buffer Zone Table 144 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	20	20	20	15	15	10	3
140	40	40	40	35	30	20	10
280	55	55	55	50	45	30	15
710	80	80	75	75	65	40	5
1420	150	150	140	135	100	70	20
2830	250	245	235	225	180	110	40
7080	470	465	445	415	350	205	95

Buffer Zone Table 145 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	25	25	25	20	15	5	3
60	45	40	40	40	30	20	10
140	75	70	70	65	55	40	20
280	110	105	100	95	80	55	30
710	185	185	175	170	140	80	40
1420	310	305	295	280	230	150	70
2830	480	475	465	440	380	250	110

7080	870	860	830	790	685	470	205
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Buffer Zone Table 146 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	5	5	5	5	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 147 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3
140	10	10	10	10	10	5	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 148 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	10	10	10	10	5	3	3
140	15	15	15	15	10	10	3
280	10	10	10	10	5	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 149 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	10	10	10	10	10	5	3
140	20	15	15	15	15	10	5
280	15	15	15	15	10	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 150 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate
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	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	3	3	3	3
60	15	15	10	10	10	5	3
140	20	20	20	20	15	10	5
280	25	25	20	20	15	10	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 151 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	20	20	15	15	15	10	5
140	30	30	30	30	25	15	10
280	40	40	40	35	30	15	3
710	3	3	3	3	3	3	3
1420	75	75	65	45	3	3	3
2830	125	125	115	100	3	3	3
7080	220	220	210	190	110	3	3

Buffer Zone Table 152 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	20	20	20	15	15	10	3
60	35	35	35	30	25	20	10
140	55	55	55	50	45	30	15
280	75	75	70	65	60	40	15
710	110	110	105	100	80	3	3
1420	215	210	200	180	130	75	3
2830	360	355	335	315	230	125	3
7080	675	665	640	595	460	220	3

Buffer Zone Table 153 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 154 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3
140	3	3	3	3	3	3	3

280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 155 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 156 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	10	10	10	10	5	5	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 157 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	5	3	3
60	10	10	10	10	10	5	3
140	10	5	5	5	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 158 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	15	15	15	15	10	10	5
140	15	15	15	15	10	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	3	3	3	3	3	3	3

Buffer Zone Table 159 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	20	20	15	15	15	10	5
60	30	30	25	25	20	15	10
140	40	40	40	35	30	15	3
280	40	40	30	20	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 160 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 161 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 162 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 163 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 164 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 165 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	5	5	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 166 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	15	15	15	15	10	10	3
60	10	10	10	10	5	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 167 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 168 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 169 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 170 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 171 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 172 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 173 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Open-Area Vertical Stacks

Stack Height: 3 m

Buffer Zone Table 174 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 175 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 176 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3
140	10	10	10	10	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	50	40	3	3	3	3	3
7080	135	135	130	120	75	3	3

Buffer Zone Table 177 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	10	10	10	10	5	3	3
140	15	15	15	10	10	3	3
280	15	15	15	10	3	3	3
710	3	3	3	3	3	3	3
1420	30	25	3	3	3	3	3
2830	95	95	90	85	50	3	3
7080	185	185	180	170	135	3	3

Buffer Zone Table 178 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	5	3	3
60	10	10	10	10	10	5	3
140	20	20	15	15	15	5	3
280	25	25	25	20	15	3	3
710	3	3	3	3	3	3	3
1420	70	70	65	55	3	3	3
2830	125	125	120	110	90	3	3
7080	245	240	225	205	175	105	3

Buffer Zone Table 179 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	15	15	15	15	10	10	3
140	30	30	25	25	20	15	3
280	40	40	40	40	30	15	3
710	65	65	60	55	3	3	3
1420	115	110	110	100	85	3	3
2830	205	200	190	170	140	90	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	415	415	395	375	300	175	3

Buffer Zone Table 180 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	15	15	15	15	15	10	5
60	30	25	25	25	20	15	10
140	50	50	50	45	40	30	15
280	75	75	75	70	60	40	15
710	145	140	135	125	100	65	3
1420	265	260	250	235	190	115	3
2830	450	440	425	400	330	205	90
7080	815	805	785	750	640	415	175

Buffer Zone Table 181 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 182 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 183 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 184 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 185 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	3	3	3	3
60	5	5	5	5	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 186 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	5	5	3	3
60	10	10	10	10	10	3	3
140	15	15	10	10	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	180	175	150	100	3	3	3

Buffer Zone Table 187 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	15	15	15	15	10	10	3
60	25	25	25	20	20	10	3
140	40	40	40	40	30	15	3
280	60	60	55	50	30	3	3
710	85	85	75	60	3	3	3
1420	150	150	145	135	100	3	3
2830	290	285	260	215	175	3	3
7080	600	590	550	510	365	180	3

Buffer Zone Table 188 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 189 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 190 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 191 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 192 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 193 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 194 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	3	3
60	15	15	15	10	5	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 195 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 196 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 197 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 198 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 199 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 200 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 201 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 202 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 203 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 204 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 205 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 206 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 207 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 208 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Open-Area Vertical Stacks

Stack Height: 8 m

Buffer Zone Table 209 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 210 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 211 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 212 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 213 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	135	125	80	3	3	3	3

Buffer Zone Table 214 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	260	260	250	235	185	3	3

Buffer Zone Table 215 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	140	140	130	120	3	3	3
2830	255	250	245	230	195	3	3
7080	670	665	625	585	460	260	3

Buffer Zone Table 216 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 217 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 218 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 219 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 220 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 221 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 222 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	340	335	320	295	160	3	3

Buffer Zone Table 223 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 224 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 225 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 226 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3

710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 227 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 228 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 229 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 230 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 231 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 232 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 233 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 234 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 235 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 236 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 237 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 238 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 239 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 240 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 241 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 242 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 243 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less

Active Aeration – Open-Area Vertical Stacks

Stack Height: 15 m

Buffer Zone Table 244 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 245 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 246 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 247 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 248 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 249 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 250 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	360	355	340	320	215	3	3

Buffer Zone Table 251 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
7080	3	3	3	3	3	3	3

Buffer Zone Table 252 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 253 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 254 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 255 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 256 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 257 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 258 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 259 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 260 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 261 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 262 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 263 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 264 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 265 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 266 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 267 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 268 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 269 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 270 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 271 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 272 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 273 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 274 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 275 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 276 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 277 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 278 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time 8 hours or less
Active Aeration – Horizontal Stacks

Buffer Zone Table 279 Air Exchange Rate/hr: 0.1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3

140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	6	6	5	5	5	3	3	3	3	3
1420	9	9	8	8	6	3	3	3	3	3
2830	14	14	14	12	11	6	3	3	3	3
7080	24	24	23	23	20	14	6	3	3	3

Buffer Zone Table 280 Air Exchange Rate/hr: 0.1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	6	6	6	6	5	3	3	3	3	3
710	11	11	11	9	8	6	3	3	3	3
1420	17	17	15	15	12	9	3	3	3	3
2830	24	24	24	23	20	14	6	3	3	3
7080	46	44	44	41	35	24	14	3	3	3

Buffer Zone Table 281 Air Exchange Rate/hr: 0.1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	5	5	5	5	5	3	3	3	3	3
280	8	8	8	8	6	5	3	3	3	3
710	15	15	14	14	12	8	5	3	3	3
1420	23	23	21	21	18	12	6	3	3	3
2830	37	35	35	34	27	20	11	3	3	3
7080	66	64	62	59	50	35	20	8	3	3

Buffer Zone Table 282 Air Exchange Rate/hr: 0.1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	6	6	6	6	5	3	3	3	3	3
280	11	11	11	9	8	6	3	3	3	3
710	18	18	18	17	15	11	6	3	3	3
1420	29	29	27	27	23	17	9	3	3	3
2830	46	46	44	43	37	24	14	3	3	3
7080	82	82	79	76	66	46	24	11	3	3

Buffer Zone Table 283 Air Exchange Rate/hr: 0.1 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	6	6	5	5	5	3	3	3	3	3
140	12	12	12	12	9	8	5	3	3	3
280	20	20	18	18	15	12	6	3	3	3
710	35	35	34	34	29	21	12	5	3	3
1420	55	55	53	52	44	32	18	8	3	3
2830	85	85	82	79	69	50	27	12	5	3
7080	149	148	145	140	123	90	50	23	12	3

Buffer Zone Table 284 Air Exchange Rate/hr: 0.1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	9	9	8	8	6	5	3	3	3	3
140	18	18	17	17	14	11	6	3	3	3
280	29	29	27	26	23	17	11	5	3	3
710	52	52	50	49	43	30	18	8	5	3
1420	79	79	76	73	66	49	27	12	6	3
2830	120	120	117	113	101	75	44	20	11	3
7080	210	209	203	197	174	133	78	35	20	3

Buffer Zone Table 285 Air Exchange Rate/hr: 0.2 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	6	6	6	6	5	3	3	3	3	3
1420	11	11	11	9	8	3	3	3	3	3
2830	17	17	17	15	14	9	3	3	3	3
7080	30	30	29	27	24	17	9	3	3	3

Buffer Zone Table 286 Air Exchange Rate/hr: 0.2 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	5	5	5	5	5	3	3	3	3	3
280	8	8	8	6	6	3	3	3	3	3
710	14	14	12	12	11	6	3	3	3	3
1420	20	20	20	18	15	11	3	3	3	3
2830	32	32	30	29	24	17	9	3	3	3
7080	58	58	55	53	44	30	17	6	3	3

Buffer Zone Table 287 Air Exchange Rate/hr: 0.2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	8	8	6	6	6	5	3	3	3	3
280	11	11	11	11	8	6	3	3	3	3
710	18	18	18	17	15	11	5	3	3	3
1420	29	29	27	26	23	15	8	3	3	3
2830	46	46	44	43	35	24	14	3	3	3
7080	84	82	79	76	64	44	24	11	5	3

Buffer Zone Table 288 Air Exchange Rate/hr: 0.2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	9	9	8	8	8	5	3	3	3	3
280	14	14	14	12	11	8	3	3	3	3
710	24	24	23	21	18	14	6	3	3	3
1420	38	38	37	35	29	20	11	3	3	3
2830	59	59	56	53	46	32	17	6	3	3
7080	107	107	102	99	84	58	30	14	6	3

Buffer Zone Table 289 Air Exchange Rate/hr: 0.2 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	3	3	3	3	3	3
60	9	9	8	8	6	5	3	3	3	3
140	17	17	15	15	14	9	6	3	3	3
280	26	26	24	24	21	15	8	3	3	3
710	47	46	46	43	38	26	15	6	3	3
1420	72	72	70	67	58	43	23	9	3	3
2830	111	110	107	104	90	66	35	15	8	3
7080	195	195	189	180	158	117	64	27	15	3

Buffer Zone Table 290 Air Exchange Rate/hr: 0.2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	8	8	6	6	6	3	3	3	3	3
60	14	14	12	12	11	8	5	3	3	3
140	24	24	23	23	20	14	8	5	3	3
280	38	38	37	35	30	23	14	6	3	3
710	67	67	66	62	55	41	23	11	5	3
1420	104	104	101	96	85	62	35	15	8	3
2830	157	157	152	146	130	98	56	24	14	3
7080	274	271	264	255	227	171	102	44	24	5

Buffer Zone Table 291 Air Exchange Rate/hr: 0.5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	6	6	6	5	3	3	3	3	3	3
1420	12	12	12	11	9	5	3	3	3	3
2830	20	18	18	18	15	11	3	3	3	3
7080	35	34	32	30	26	20	11	3	3	3

Buffer Zone Table 292 Air Exchange Rate/hr: 0.5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	5	5	5	5	3	3	3	3	3	3
280	8	8	8	6	5	3	3	3	3	3
710	15	14	14	14	11	6	3	3	3	3
1420	23	23	21	21	18	12	5	3	3	3
2830	35	35	34	32	27	20	11	3	3	3
7080	66	64	62	59	50	35	20	9	3	3

Buffer Zone Table 293 Air Exchange Rate/hr: 0.5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	8	8	8	8	6	3	3	3	3	3
280	12	12	12	11	9	5	3	3	3	3
710	21	21	20	20	17	11	3	3	3	3
1420	34	34	32	30	26	18	9	3	3	3
2830	53	52	50	47	41	27	15	5	3	3
7080	96	96	91	87	73	50	26	12	6	3

Buffer Zone Table 294 Air Exchange Rate/hr: 0.5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	6	6	6	5	5	3	3	3	3	3
140	11	11	9	9	8	5	3	3	3	3
280	15	15	15	14	12	8	3	3	3	3
710	27	27	26	26	21	15	6	3	3	3
1420	44	44	43	40	34	23	12	3	3	3
2830	69	69	66	62	53	35	20	8	3	3
7080	126	125	120	114	96	66	35	15	9	3

Buffer Zone Table 295 Air Exchange Rate/hr: 0.5 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	6	6	6	6	5	5	3	3	3	3
60	12	12	11	11	9	6	3	3	3	3
140	20	20	20	18	17	12	6	3	3	3
280	32	30	30	29	24	17	9	3	3	3
710	56	56	55	52	44	30	17	5	3	3
1420	87	87	84	81	70	49	26	11	3	3
2830	134	133	128	123	108	76	41	18	9	3
7080	235	233	226	216	191	139	73	30	18	3

Buffer Zone Table 296 Air Exchange Rate/hr: 0.5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	11	11	11	9	8	6	3	3	3	3
60	17	17	15	15	14	9	6	3	3	3
140	30	30	29	27	24	18	9	3	3	3
280	47	46	46	44	38	27	15	5	3	3
710	82	82	79	76	67	49	26	11	3	3
1420	125	125	122	117	104	76	41	18	9	3
2830	191	189	184	177	157	117	64	27	15	3
7080	331	329	320	309	274	207	119	50	26	6

Buffer Zone Table 297 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	6	6	5	5	3	3	3	3	3	3
1420	12	12	11	11	9	5	3	3	3	3
2830	18	18	18	17	14	11	5	3	3	3
7080	32	32	30	29	24	18	9	3	3	3

Buffer Zone Table 298 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	6	6	6	5	3	3	3	3	3	3
710	14	14	14	12	11	6	3	3	3	3
1420	21	21	21	20	17	12	5	3	3	3
2830	35	35	34	32	26	18	11	3	3	3
7080	62	62	59	56	47	32	18	8	3	3

Buffer Zone Table 299 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	6	6	6	5	3	3	3	3	3	3
280	11	11	11	11	8	3	3	3	3	3
710	20	20	20	18	15	11	3	3	3	3
1420	32	32	30	29	24	17	9	3	3	3
2830	50	50	49	46	40	26	14	6	3	3
7080	91	90	87	82	70	47	24	12	6	3

Buffer Zone Table 300 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	9	9	9	8	6	3	3	3	3	3
280	15	15	14	14	11	6	3	3	3	3
710	26	26	26	24	20	14	6	3	3	3
1420	43	41	40	38	32	21	12	3	3	3
2830	66	66	62	59	50	35	18	8	3	3
7080	120	119	114	108	91	62	32	15	8	3

Buffer Zone Table 301 Air Exchange Rate/hr: 1 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	8	8	8	6	6	5	3	3	3	3
60	12	12	11	11	9	6	3	3	3	3
140	20	20	20	18	15	11	3	3	3	3
280	30	30	29	29	24	17	8	3	3	3
710	56	56	53	52	44	29	15	5	3	3
1420	87	87	84	79	67	47	24	11	3	3
2830	134	134	130	123	107	73	40	17	9	3
7080	239	236	229	219	191	134	70	29	17	3

Buffer Zone Table 302 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	11	11	11	11	9	6	3	3	3	3
60	17	17	17	15	14	9	5	3	3	3
140	30	30	29	27	24	17	9	3	3	3
280	47	47	46	44	38	26	14	3	3	3
710	84	84	81	78	67	47	24	11	3	3
1420	128	128	123	119	104	75	40	17	9	3
2830	198	197	191	183	160	116	62	26	14	3
7080	344	343	332	320	280	207	113	47	24	6

Buffer Zone Table 303 Air Exchange Rate/hr: 2 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	5	5	5	3	3	3	3	3	3	3
1420	11	11	9	9	8	5	3	3	3	3
2830	17	15	15	15	12	8	3	3	3	3
7080	27	27	26	24	20	14	5	3	3	3

Buffer Zone Table 304 Air Exchange Rate/hr: 2 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	5	5	3	3	3	3	3	3	3	3
710	12	12	12	11	9	5	3	3	3	3
1420	20	20	18	18	15	11	5	3	3	3
2830	30	30	29	27	23	17	8	3	3	3
7080	56	56	53	50	43	27	14	3	3	3

Buffer Zone Table 305 Air Exchange Rate/hr: 2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	9	9	9	8	6	3	3	3	3	3
710	18	18	18	17	14	9	3	3	3	3
1420	29	29	27	26	21	15	8	3	3	3
2830	47	46	44	43	35	23	12	5	3	3
7080	82	82	79	76	62	43	20	6	3	3

Buffer Zone Table 306 Air Exchange Rate/hr: 2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	8	8	8	6	3	3	3	3	3	3
280	14	14	12	12	9	5	3	3	3	3
710	24	24	23	21	18	12	5	3	3	3
1420	40	40	37	35	29	20	11	3	3	3
2830	61	61	58	55	47	30	17	6	3	3
7080	110	110	105	99	82	56	27	11	3	3

Buffer Zone Table 307 Air Exchange Rate/hr: 2 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	6	6	6	6	5	3	3	3	3	3
60	11	11	9	9	8	3	3	3	3	3
140	18	18	18	17	14	9	3	3	3	3
280	29	29	27	26	21	15	6	3	3	3
710	52	52	50	47	41	27	14	3	3	3
1420	79	79	76	73	62	44	21	9	3	3
2830	123	122	117	113	98	69	35	15	8	3
7080	215	213	209	200	171	122	62	24	12	3

Buffer Zone Table 308 Air Exchange Rate/hr: 2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	11	11	11	9	8	5	3	3	3	3
60	17	15	15	15	12	8	3	3	3	3
140	29	29	27	26	23	15	6	3	3	3
280	44	44	43	41	35	24	12	3	3	3
710	79	78	75	72	62	44	23	9	3	3
1420	120	119	116	110	96	69	37	15	8	3
2830	181	180	175	168	146	105	58	23	12	3
7080	315	312	303	291	253	187	104	43	20	3

Buffer Zone Table 309 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 310 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	8	8	8	6	5	3	3	3	3	3
1420	9	9	9	8	6	3	3	3	3	3
2830	9	9	8	6	5	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 311 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	6	6	5	5	3	3	3	3	3	3
710	12	12	11	11	9	5	3	3	3	3
1420	15	15	14	14	11	6	3	3	3	3
2830	18	18	17	15	12	5	3	3	3	3
7080	18	17	15	12	3	3	3	3	3	3

Buffer Zone Table 312 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	8	8	8	8	6	3	3	3	3	3
710	15	15	14	14	12	8	3	3	3	3
1420	21	21	21	20	15	9	3	3	3	3
2830	29	29	27	24	18	9	3	3	3	3
7080	40	40	34	29	18	3	3	3	3	3

Buffer Zone Table 313 Air Exchange Rate/hr: 10 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	12	12	11	11	8	3	3	3	3	3
280	18	18	18	17	14	9	3	3	3	3
710	34	34	32	30	24	17	9	3	3	3
1420	53	53	50	47	40	24	11	3	3	3
2830	82	82	78	73	61	35	12	3	3	3
7080	145	143	137	128	104	52	3	3	3	3

Buffer Zone Table 314 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	3	3	3	3	3	3	3	3
60	11	11	9	9	6	3	3	3	3	3
140	20	20	18	18	15	9	3	3	3	3
280	32	30	29	27	23	15	8	3	3	3
710	58	56	55	52	43	27	14	5	3	3
1420	90	88	85	81	67	44	20	6	3	3
2830	140	139	133	126	105	67	26	5	3	3
7080	247	245	236	224	186	117	34	3	3	3

Aeration Time 8 hours or less
Active Aeration – No Stacks

Buffer Zone Table 315 Air Exchange Rate/hr: 0.1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 316 Air Exchange Rate/hr: 0.1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 317 Air Exchange Rate/hr: 0.1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 318 Air Exchange Rate/hr: 0.1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 319 Air Exchange Rate/hr: 0.1 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	17	17	15	11	3	3	3	3	3	3
1420	44	44	43	40	32	14	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 320 Air Exchange Rate/hr: 0.1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	5	3	3	3	3	3
60	8	8	8	8	6	5	3	3	3	3
140	12	12	11	11	8	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	38	38	37	34	27	3	3	3	3	3
1420	72	70	69	66	56	37	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	119	117	108	99	3	3	3	3	3	3

Buffer Zone Table 321 Air Exchange Rate/hr: 0.2 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 322 Air Exchange Rate/hr: 0.2 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 323 Air Exchange Rate/hr: 0.2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	17	15	14	8	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 324 Air Exchange Rate/hr: 0.2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	30	29	27	26	17	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 325 Air Exchange Rate/hr: 0.2 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	5	3	3	3	3	3
60	8	8	8	8	6	5	3	3	3	3
140	11	11	11	9	6	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	37	37	35	32	26	3	3	3	3	3
1420	69	69	66	62	53	35	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	111	108	101	90	3	3	3	3	3	3

Buffer Zone Table 326 Air Exchange Rate/hr: 0.2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	8	8	8	8	6	5	3	3	3	3
60	12	12	12	11	9	6	3	3	3	3
140	18	18	18	17	14	9	3	3	3	3
280	23	23	21	18	3	3	3	3	3	3
710	61	59	58	55	47	29	3	3	3	3
1420	101	101	98	93	81	59	27	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	213	212	204	195	158	66	3	3	3	3

Buffer Zone Table 327 Air Exchange Rate/hr: 0.5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 328 Air Exchange Rate/hr: 0.5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	18	18	15	11	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 329 Air Exchange Rate/hr: 0.5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	37	37	35	32	24	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 330 Air Exchange Rate/hr: 0.5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	3	3	3	3	3	3	3	3	3
60	6	6	6	5	5	3	3	3	3	3
140	6	6	5	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	21	21	20	17	3	3	3	3	3	3
1420	49	49	47	44	37	18	3	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 331 Air Exchange Rate/hr: 0.5 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	8	6	6	6	6	5	3	3	3	3
60	11	11	11	11	9	6	3	3	3	3
140	18	17	17	15	14	8	3	3	3	3
280	20	20	18	15	3	3	3	3	3	3
710	55	55	53	50	43	26	3	3	3	3
1420	91	91	88	85	75	55	24	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	195	192	184	175	140	3	3	3	3	3

Buffer Zone Table 332 Air Exchange Rate/hr: 0.5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	11	11	9	9	8	6	3	3	3	3
60	15	15	15	15	14	9	6	3	3	3
140	27	27	26	26	21	15	5	3	3	3
280	40	40	38	35	29	3	3	3	3	3
710	81	81	79	76	66	47	18	3	3	3
1420	130	130	125	122	107	81	46	3	3	3
2830	117	116	108	98	3	3	3	3	3	3
7080	297	294	285	274	236	162	3	3	3	3

Buffer Zone Table 333 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 334 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	29	27	26	24	17	3	3	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 335 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	5	5	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	20	18	17	14	3	3	3	3	3	3
1420	44	44	41	40	32	17	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 336 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	3	3	3	3	3	3
60	6	6	6	6	5	3	3	3	3	3
140	9	9	8	8	5	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	29	29	27	26	20	3	3	3	3	3
1420	56	56	53	52	44	29	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	69	66	3	3	3	3	3	3	3	3

Buffer Zone Table 337 Air Exchange Rate/hr: 1 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	8	8	8	8	6	5	3	3	3	3
60	12	12	12	12	11	8	5	3	3	3
140	20	20	20	18	15	11	3	3	3	3
280	26	26	24	23	17	3	3	3	3	3
710	62	62	61	58	50	34	3	3	3	3
1420	102	102	99	94	84	61	32	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	221	218	212	203	168	93	3	3	3	3

Buffer Zone Table 338 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	12	12	11	11	9	8	5	3	3	3
60	18	18	17	17	14	11	6	3	3	3
140	32	32	30	29	24	17	8	3	3	3
280	46	46	44	43	35	20	3	3	3	3
710	90	90	87	84	75	55	27	3	3	3
1420	142	140	137	133	117	90	53	17	3	3

2830	146	145	137	128	93	3	3	3	3	3
7080	328	326	315	302	265	189	3	3	3	3

Buffer Zone Table 339 Air Exchange Rate/hr: 2 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 340 Air Exchange Rate/hr: 2 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	34	34	32	30	24	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 341 Air Exchange Rate/hr: 2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	3	3	3	3	3	3	3
60	6	6	6	6	5	3	3	3	3	3
140	8	8	6	6	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	24	24	23	21	12	3	3	3	3	3
1420	49	47	46	44	38	24	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 342 Air Exchange Rate/hr: 2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	5	3	3	3	3	3
60	8	8	8	6	6	5	3	3	3	3
140	11	11	11	9	8	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	34	34	32	30	24	3	3	3	3	3
1420	59	59	58	55	49	34	3	3	3	3

2830	3	3	3	3	3	3	3	3	3	3
7080	99	98	91	81	3	3	3	3	3	3

Buffer Zone Table 343 Air Exchange Rate/hr: 2 – Dosage: 8, 12, or 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	9	8	8	8	8	5	3	3	3	3
60	14	14	14	12	11	8	5	3	3	3
140	23	23	21	20	18	12	3	3	3	3
280	30	30	29	27	23	3	3	3	3	3
710	64	64	62	59	52	38	12	3	3	3
1420	102	101	99	94	84	64	38	3	3	3
2830	81	79	70	3	3	3	3	3	3	3
7080	218	216	210	203	175	116	3	3	3	3

Buffer Zone Table 344 Air Exchange Rate/hr: 2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	12	12	12	12	11	8	5	3	3	3
60	20	20	18	18	15	12	8	3	3	3
140	34	34	32	30	27	20	11	3	3	3
280	49	49	47	44	38	26	3	3	3	3
710	91	90	88	85	75	56	32	3	3	3
1420	140	139	136	131	117	90	56	24	3	3
2830	157	155	149	142	114	3	3	3	3	3
7080	314	311	303	291	258	191	88	3	3	3

Aeration Time more than 8 hours

Active Aeration – Attached Vertical Stacks

Stack Height: 3 m

Buffer Zone Table 345 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 346 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 347 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 348 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3
14160	135	135	120	100	3	3	3	3

Buffer Zone Table 349 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3
14160	205	200	190	170	115	3	3	3

Buffer Zone Table 350 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	115	110	95	80	3	3	3
14160	315	315	300	285	240	115	3

Buffer Zone Table 351 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	150	150	145	140	115	3	3
2830	3	3	3	3	3	3	3
7080	320	320	305	290	240	115	3
14160	530	530	515	495	435	315	115

Buffer Zone Table 352 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 352 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 353 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 354 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 355 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 356 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3
14160	290	285	245	85	3	3	3	3

Buffer Zone Table 357 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	85	80	70	3	3	3	3
1420	165	165	155	145	90	3	3
2830	3	3	3	3	3	3	3
7080	390	385	365	345	260	3	3
14160	640	635	615	590	505	290	3

Buffer Zone Table 358 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 359 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 360 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 361 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure	Retention Rate

Size (m ³)	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 362 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 363 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 364 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 365 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%

	%									
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	5	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 366 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	10%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3

Buffer Zone Table 367 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 368 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 369 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	10%
30	3	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 370 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 371 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 372 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 373 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 374 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 375 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 376 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 377 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 378 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 379 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 380 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 381 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 382 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 383 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 384 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 385 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours
Active Aeration – Attached Vertical Stacks
Stack Height: 8 m

Buffer Zone Table 386 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 387 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 388 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 389 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3

2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	135	135	120	100	3	3	3

Buffer Zone Table 390 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	205	200	190	170	115	3	3

Buffer Zone Table 391 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	255	250	230	130	3	3	3

Buffer Zone Table 392 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	255	250	225	3	3	3	3
14160	510	505	490	470	405	255	3

Buffer Zone Table 393 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3

1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 394 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 395 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 396 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 397 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 398 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate								
	100%	99%	95%	90%	75%	50%	25%	10%	
30	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3
14160	290	285	245	85	3	3	3	3	3

Buffer Zone Table 399 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate								
	100%	99%	95%	90%	75%	50%	25%	10%	
30	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3
14160	585	580	555	525	410	3	3	3	3

Buffer Zone Table 400 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 401 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3

140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 402 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 403 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 404 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 405 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3

140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 406 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 407 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	5	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 408 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	
30	3	3	3	3	3	3	3	
60	3	3	3	3	3	3	3	
140	3	3	3	3	3	3	3	
280	3	3	3	3	3	3	3	
710	3	3	3	3	3	3	3	
1420	3	3	3	3	3	3	3	
2830	3	3	3	3	3	3	3	
7080	3	3	3	3	3	3	3	

Buffer Zone Table 409 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 410 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 411 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3

Buffer Zone Table 412 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3

Buffer Zone Table 413 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	1%
30	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 414 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 415 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 416 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 417 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3

2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 418 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 419 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 420 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 421 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 422 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 423 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 424 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 425 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 426 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 427 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours

Active Aeration – Attached Vertical Stacks

Stack Height: 15 m

Buffer Zone Table 428 Air Exchange Rate/hr: 1 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 429 Air Exchange Rate/hr: 1 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 430 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 431 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	
30	3	3	3	3	3	3	3	
60	3	3	3	3	3	3	3	
140	3	3	3	3	3	3	3	
280	3	3	3	3	3	3	3	
710	3	3	3	3	3	3	3	
1420	3	3	3	3	3	3	3	
2830	3	3	3	3	3	3	3	
7080	3	3	3	3	3	3	3	
14160	135	135	120	100	3	3	3	

Buffer Zone Table 432 Air Exchange Rate/hr: 1 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	
30	3	3	3	3	3	3	3	
60	3	3	3	3	3	3	3	
140	3	3	3	3	3	3	3	
280	3	3	3	3	3	3	3	
710	3	3	3	3	3	3	3	
1420	3	3	3	3	3	3	3	
2830	3	3	3	3	3	3	3	
7080	3	3	3	3	3	3	3	
14160	205	200	190	170	115	3	3	

Buffer Zone Table 433 Air Exchange Rate/hr: 1 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate							
	100%	99%	95%	90%	75%	50%	25%	
30	3	3	3	3	3	3	3	
60	3	3	3	3	3	3	3	
140	3	3	3	3	3	3	3	
280	3	3	3	3	3	3	3	
710	3	3	3	3	3	3	3	
1420	3	3	3	3	3	3	3	
2830	3	3	3	3	3	3	3	
7080	3	3	3	3	3	3	3	
14160	255	250	230	130	3	3	3	

Buffer Zone Table 434 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	405	400	385	360	275	3	3

Buffer Zone Table 435 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 436 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 437 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 438 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 439 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 440 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 441 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 442 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 443 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 444 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 445 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 446 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 447 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 448 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 449 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	5	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 450 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 451 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 452 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 453 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 454 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size	Retention Rate

(m ³)	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 455 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 456 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 457 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 458 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 459 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 460 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 461 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 462 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 463 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 464 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 465 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 466 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
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Buffer Zone Table 467 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 468 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 469 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours
Active Aeration – Open-Area Vertical Stacks
Stack Height: 2 m

Buffer Zone Table 470 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	10	10	10	10	5	3	3
280	10	10	10	10	10	5	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 471 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	3	3	3	3
140	15	15	15	15	10	10	3
280	20	20	20	20	15	10	5
710	3	3	3	3	3	3	3
1420	15	15	3	3	3	3	3
2830	55	50	45	30	3	3	3
7080	110	105	100	90	3	3	3
14160	165	160	150	140	65	3	3

Buffer Zone Table 472 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	10	10	10	10	5	3	3
140	20	20	20	20	15	10	5
280	30	30	30	25	25	15	10
710	35	30	30	25	10	3	3
1420	60	60	60	55	35	3	3
2830	100	100	95	90	70	3	3
7080	175	175	165	155	125	3	3
14160	255	255	240	230	190	65	3

Buffer Zone Table 473 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	15	10	10	10	10	5	3
140	25	25	25	25	20	15	10
280	40	40	40	35	30	20	10
710	55	50	50	45	35	3	3
1420	85	85	80	80	60	15	3
2830	135	135	130	120	100	55	3
7080	225	225	220	205	175	110	3
14160	330	330	315	300	255	165	3

Buffer Zone Table 474 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	15	15	15	15	10	5	3
140	30	30	30	30	25	20	10
280	45	45	45	45	35	25	15
710	65	65	65	60	50	20	3
1420	105	105	100	95	80	45	3
2830	160	160	155	150	125	80	3

7080	270	270	260	250	215	145	3
14160	395	390	380	365	315	210	3

Buffer Zone Table 475 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	25	25	20	20	20	10	5
140	45	45	40	40	35	25	15
280	60	60	60	55	50	35	20
710	95	95	90	85	75	50	3
1420	145	145	140	135	115	80	3
2830	215	215	210	200	175	125	40
7080	360	355	350	335	295	215	100
14160	520	515	505	485	430	315	150

Buffer Zone Table 476 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	25	25	20	20	20	10	3
60	40	40	40	35	30	25	10
140	65	65	65	60	55	45	25
280	95	95	90	90	80	60	35
710	150	150	145	145	125	95	50
1420	225	225	220	210	190	145	80
2830	335	335	325	315	280	215	125
7080	545	545	530	515	465	360	215
14160	795	790	775	745	675	520	315

Buffer Zone Table 477 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	5	5	5	5	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 478 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3
140	10	10	10	10	10	5	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 479 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	10	10	10	10	10	5	3
140	15	15	15	15	10	10	3
280	10	10	5	5	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 480 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	3	3	3	3
60	15	15	10	10	10	5	3
140	20	20	20	20	15	10	5
280	15	15	15	15	10	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 481 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	5	3	3
60	15	15	15	15	10	10	3
140	25	25	25	25	20	15	5
280	25	25	25	20	15	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 482 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	20	20	20	20	15	10	5
140	40	35	35	35	30	20	10
280	45	45	45	40	30	15	3
710	3	3	3	3	3	3	3
1420	85	80	70	50	3	3	3
2830	135	135	125	110	3	3	3

7080	235	235	220	205	3	3	3
14160	345	340	320	295	3	3	3

Buffer Zone Table 483 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	25	25	20	20	20	10	5
60	40	40	35	35	30	20	10
140	60	60	60	55	50	40	20
280	85	85	80	80	70	45	15
710	125	125	120	115	95	3	3
1420	195	190	185	175	145	85	3
2830	285	285	275	265	225	135	3
7080	475	470	455	440	375	235	3
14160	690	685	660	630	530	345	3

Buffer Zone Table 484 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 485 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	5	5	5	5	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 486 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	10	10	10	10	5	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 487 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	5	3	3
60	10	10	10	10	10	5	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 488 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	15	10	10	10	10	5	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 489 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	20	15	15	15	15	10	5
140	15	15	15	10	5	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 490 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	20	20	20	20	15	10	5
60	35	35	30	30	25	20	10
140	45	45	45	40	30	15	3
280	45	45	35	25	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3

7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 491 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 492 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 493 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 494 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 495 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 496 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 497 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	15	15	15	15	10	10	3
60	10	10	5	5	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 498 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 499 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 500 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 501 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 502 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 503 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 504 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Aeration Time more than 8 hours

Active Aeration – Open-Area Vertical Stacks

Stack Height: 3 m

Buffer Zone Table 505 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 506 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	105	100	3	3	3	3	3

Buffer Zone Table 507 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	3	3	3	3
60	10	10	10	5	5	3	3
140	10	10	10	10	5	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	55	50	3	3	3	3	3
7080	150	150	140	130	70	3	3
14160	235	230	220	205	160	3	3

Buffer Zone Table 508 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	5	3	3
60	10	10	10	10	10	3	3
140	15	15	15	15	10	3	3
280	20	20	15	15	3	3	3
710	3	3	3	3	3	3	3
1420	50	45	3	3	3	3	3
2830	110	110	105	95	55	3	3
7080	210	210	200	190	150	3	3
14160	315	310	295	285	235	105	3

Buffer Zone Table 509 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	5	5	3	3
60	15	15	10	10	10	5	3
140	20	20	20	20	15	5	3
280	30	30	25	25	15	3	3
710	3	3	3	3	3	3	3
1420	85	85	80	70	3	3	3
2830	145	145	140	130	100	3	3
7080	260	255	245	235	195	110	3
14160	380	380	365	350	295	185	3

Buffer Zone Table 510 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	10	5	3
60	20	20	15	15	15	10	3
140	35	35	35	30	25	15	3
280	50	50	50	45	35	15	3
710	80	80	75	70	45	3	3
1420	135	135	130	120	100	3	3
2830	205	205	200	190	165	100	3
7080	350	345	340	325	285	195	3
14160	510	505	495	475	415	295	3

Buffer Zone Table 511 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	20	20	20	20	15	10	5
60	35	35	30	30	25	20	10
140	60	60	60	55	50	35	15
280	90	85	85	80	70	50	15
710	145	145	140	135	115	80	3
1420	220	220	210	205	180	135	3
2830	330	325	320	305	270	205	100
7080	540	540	525	510	455	350	195
14160	790	785	765	740	665	510	295

Buffer Zone Table 512 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 513 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 514 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 515 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 516 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	5	5	5	5	3	3	3
60	10	10	5	5	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 517 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	10	10	10	10	5	3	3
60	15	15	15	10	10	3	3
140	15	15	15	10	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	195	190	155	3	3	3	3
14160	305	300	275	225	3	3	3

Buffer Zone Table 518 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	20	20	15	15	15	10	3
60	30	30	30	25	20	15	3
140	50	50	50	45	35	15	3
280	70	70	70	65	45	3	3
710	100	100	90	80	3	3	3
1420	175	175	165	155	115	3	3
2830	270	265	260	245	200	3	3
7080	460	455	440	420	350	195	3
14160	670	665	645	615	510	305	3

Buffer Zone Table 519 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 520 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 521 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 522 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 523 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 524 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 525 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	15	15	15	10	10	3	3
60	15	15	15	15	5	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 526 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 527 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 528 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 529 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 530 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 531 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 532 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 533 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 534 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 535 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size	Retention Rate
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(m ³)	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 536 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 537 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 538 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 539 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours

Active Aeration – Open-Area Vertical Stacks

Stack Height: 8 m

Buffer Zone Table 540 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 541 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 542 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 543 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	235	230	210	180	3	3	3

Buffer Zone Table 544 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	175	175	150	3	3	3	3
14160	325	320	305	285	205	3	3

Buffer Zone Table 545 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	135	130	105	3	3	3	3
7080	310	305	295	280	220	3	3
14160	475	470	455	435	370	205	3

Buffer Zone Table 546 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	180	180	170	160	120	3	3
2830	295	295	285	275	235	135	3
7080	520	515	500	480	425	310	3
14160	770	765	740	715	640	475	205

Buffer Zone Table 547 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 548 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 549 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 550 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 551 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 552 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 553 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	395	385	365	335	215	3	3
14160	610	605	575	540	425	3	3

Buffer Zone Table 554 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 555 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 556 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 557 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 558 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 559 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 560 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 561 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 562 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 563 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 564 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 565 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 566 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 567 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size	Retention Rate
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(m ³)	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14160	3	3	3	3	3	3	3

Buffer Zone Table 568 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 569 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 570 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 571 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 572 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 573 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 574 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours

Active Aeration – Open-Area Vertical Stacks

Stack Height: 15 m

Buffer Zone Table 575 Air Exchange Rate/hr: 5 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 576 Air Exchange Rate/hr: 5 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 577 Air Exchange Rate/hr: 5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 578 Air Exchange Rate/hr: 5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 579 Air Exchange Rate/hr: 5 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 580 Air Exchange Rate/hr: 5 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	350	345	320	275	3	3	3

Buffer Zone Table 581 Air Exchange Rate/hr: 5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	440	435	420	395	320	3	3
14 160	695	690	670	645	555	350	3

Buffer Zone Table 582 Air Exchange Rate/hr: 10 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 583 Air Exchange Rate/hr: 10 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 584 Air Exchange Rate/hr: 10 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 585 Air Exchange Rate/hr: 10 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 586 Air Exchange Rate/hr: 10 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 587 Air Exchange Rate/hr: 10 – Dosage: 12 kg/100 m³

Enclosure Size	Retention Rate
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(m ³)	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 588 Air Exchange Rate/hr: 10 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	420	405	3	3	3	3	3

Buffer Zone Table 589 Air Exchange Rate/hr: 20 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 590 Air Exchange Rate/hr: 20 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 591 Air Exchange Rate/hr: 20 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 592 Air Exchange Rate/hr: 20 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 593 Air Exchange Rate/hr: 20 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 594 Air Exchange Rate/hr: 20 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 595 Air Exchange Rate/hr: 20 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 596 Air Exchange Rate/hr: 50 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 597 Air Exchange Rate/hr: 50 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 598 Air Exchange Rate/hr: 50 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 599 Air Exchange Rate/hr: 50 – Dosage: 6.5 kg/100 m³

Enclosure Size	Retention Rate
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(m ³)	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 600 Air Exchange Rate/hr: 50 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 601 Air Exchange Rate/hr: 50 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 602 Air Exchange Rate/hr: 50 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3

Buffer Zone Table 603 Air Exchange Rate/hr: 70 – Dosage: 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 604 Air Exchange Rate/hr: 70 – Dosage: 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 605 Air Exchange Rate/hr: 70 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 606 Air Exchange Rate/hr: 70 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 607 Air Exchange Rate/hr: 70 – Dosage: 8 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3

60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 608 Air Exchange Rate/hr: 70 – Dosage: 12 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Buffer Zone Table 609 Air Exchange Rate/hr: 70 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate						
	100%	99%	95%	90%	75%	50%	25%
30	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3

Aeration Time more than 8 hours

Active Aeration – No Stacks

Buffer Zone Table 610 Air Exchange Rate/hr: 0.1 – Dosage: 1 or 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3

Buffer Zone Table 611 Air Exchange Rate/hr: 0.1 – Dosage: 2.5 or 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	3	3	3	3	3	3	3	3	3	3
28 320	29	29	24	17	3	3	3	3	3	3
70 790	67	66	61	56	40	3	3	3	3	3
141 580	137	136	131	123	102	59	3	3	3	3
283 170	242	241	233	223	191	128	47	3	3	3

Buffer Zone Table 612 Air Exchange Rate/hr: 0.1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	40	38	35	32	3	3	3	3	3	3
28 320	59	58	55	50	38	3	3	3	3	3
70 790	108	107	104	98	78	40	3	3	3	3
141 580	200	198	191	180	154	102	27	3	3	3
283 170	335	332	322	308	267	191	91	3	3	3

Buffer Zone Table 613 Air Exchange Rate/hr: 0.1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	11	9	9	8	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	34	32	29	24	3	3	3	3	3	3
21 240	61	59	56	52	40	3	3	3	3	3
28 320	81	81	78	73	59	29	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
70 790	143	142	137	130	108	67	3	3	3	3
141 580	251	248	241	232	200	137	59	3	3	3
283 170	416	413	401	386	335	242	128	3	3	3

Buffer Zone Table 614 Air Exchange Rate/hr: 0.1 – Dosage: 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	14	14	12	12	8	3	3	3	3	3
1420	27	27	26	24	21	12	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	44	43	40	37	21	3	3	3	3	3
14 160	94	93	90	85	70	41	3	3	3	3
21 240	136	134	128	123	104	70	3	3	3	3
28 320	169	168	163	155	133	91	38	3	3	3
70 790	280	279	271	259	226	158	78	3	3	3
141 580	439	439	439	430	375	276	154	49	3	3
283 170	439	439	439	439	439	439	267	114	35	3

Buffer Zone Table 615 Air Exchange Rate/hr: 0.1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	8	8	8	6	5	3	3	3	3	3
280	8	8	6	6	3	3	3	3	3	3
710	24	24	23	21	18	11	3	3	3	3
1420	43	43	41	40	34	23	9	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	81	81	76	73	59	30	3	3	3	3
14 160	149	148	143	137	116	79	29	3	3	3
21 240	204	203	197	187	162	114	55	3	3	3
28 320	248	247	239	230	203	146	76	3	3	3
70 790	411	408	396	381	332	245	134	40	3	3
141 580	439	439	439	439	439	405	239	102	27	3
283 170	439	439	439	439	439	439	396	191	91	3

Buffer Zone Table 616 Air Exchange Rate/hr: 0.2 – Dosage: 1 or 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	3	3	3	3	3	3	3	3	3	3
28 320	3	3	3	3	3	3	3	3	3	3
70 790	37	35	30	21	3	3	3	3	3	3
141 580	85	84	81	76	61	24	3	3	3	3
283 170	143	142	137	133	113	75	3	3	3	3

Buffer Zone Table 617 Air Exchange Rate/hr: 0.2 – Dosage: 2.5 or 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	35	35	32	29	3	3	3	3	3	3
28 320	50	49	47	44	34	3	3	3	3	3
70 790	91	90	87	82	69	37	3	3	3	3
141 580	151	149	145	140	122	85	24	3	3	3
283 170	239	238	230	221	195	143	75	3	3	3

Buffer Zone Table 618 Air Exchange Rate/hr: 0.2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	9	9	9	8	5	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	38	37	35	32	3	3	3	3	3	3
21 240	58	58	55	52	43	3	3	3	3	3
28 320	73	73	70	67	56	34	3	3	3	3
70 790	126	125	122	117	101	69	3	3	3	3
141 580	204	203	197	187	165	122	61	3	3	3
283 170	312	311	302	291	258	195	113	29	3	3

Buffer Zone Table 619 Air Exchange Rate/hr: 0.2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	5	5	3	3	3	3	3	3	3	3
1420	14	14	14	12	9	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	53	52	50	47	38	3	3	3	3	3
21 240	75	75	72	69	58	35	3	3	3	3
28 320	93	91	88	85	73	50	3	3	3	3
70 790	155	155	151	145	126	91	37	3	3	3
141 580	247	245	239	230	204	151	85	3	3	3
283 170	378	375	364	354	312	239	143	56	3	3

Buffer Zone Table 620 Air Exchange Rate/hr: 0.2 – Dosage: 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	5	5	5	5	3	3	3	3	3	3
280	5	3	3	3	3	3	3	3	3	3
710	17	17	17	15	12	6	3	3	3	3
1420	29	29	27	26	23	15	5	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	61	61	58	56	46	20	3	3	3	3
14 160	104	104	101	96	84	59	3	3	3	3
21 240	137	136	133	126	111	82	43	3	3	3
28 320	165	163	158	154	136	102	56	3	3	3
70 790	271	268	261	251	224	169	101	21	3	3
141 580	416	413	402	389	346	265	165	76	3	3
283 170	439	439	439	439	439	408	258	133	67	3

Buffer Zone Table 621 Air Exchange Rate/hr: 0.2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	9	9	8	8	6	5	3	3	3	3
280	12	12	12	11	8	3	3	3	3	3
710	26	26	24	24	21	14	3	3	3	3
1420	43	41	41	40	34	24	14	3	3	3
2830	41	41	38	35	23	3	3	3	3	3
7080	93	91	88	85	75	52	3	3	3	3
14 160	148	146	143	139	122	90	50	3	3	3
21 240	192	191	186	178	158	120	72	3	3	3
28 320	229	227	221	215	192	145	88	34	3	3

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
70 790	375	372	363	351	312	241	149	69	3	3
141 580	439	439	439	439	439	370	236	122	61	3
283 170	439	439	439	439	439	439	361	195	113	3

Buffer Zone Table 622 Air Exchange Rate/hr: 0.5 – Dosage: 1 or 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	15	3	3	3	3	3	3	3	3	3
28 320	35	35	34	30	3	3	3	3	3	3
70 790	69	69	66	62	50	3	3	3	3	3
141 580	116	116	111	107	93	62	3	3	3	3
283 170	178	177	172	166	146	108	52	3	3	3

Buffer Zone Table 623 Air Exchange Rate/hr: 0.5 – Dosage: 2.5 or 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	9	9	8	8	5	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	40	38	37	34	21	3	3	3	3	3
21 240	58	56	55	52	43	15	3	3	3	3
28 320	72	70	69	66	56	35	3	3	3	3
70 790	122	120	117	113	98	69	3	3	3	3
141 580	186	184	180	174	154	116	62	3	3	3
283 170	279	277	271	261	233	178	108	32	3	3

Buffer Zone Table 624 Air Exchange Rate/hr: 0.5 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
710	6	6	6	5	3	3	3	3	3	3
1420	15	15	14	14	11	5	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	26	24	21	3	3	3	3	3	3	3
14 160	58	58	56	53	44	21	3	3	3	3
21 240	79	79	76	73	62	43	3	3	3	3
28 320	96	96	93	88	78	56	3	3	3	3
70 790	160	158	154	149	133	98	50	3	3	3
141 580	241	239	233	226	203	154	93	3	3	3
283 170	358	355	347	335	300	233	146	66	3	3

Buffer Zone Table 625 Air Exchange Rate/hr: 0.5 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	11	11	11	9	6	3	3	3	3	3
1420	20	20	18	18	15	9	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	41	41	40	37	26	3	3	3	3	3
14 160	73	73	72	69	58	40	3	3	3	3
21 240	98	98	94	90	79	58	15	3	3	3
28 320	116	116	113	108	96	72	35	3	3	3
70 790	192	191	186	178	160	122	69	3	3	3
141 580	287	285	277	270	241	186	116	46	3	3
283 170	424	421	411	398	358	279	178	88	32	3

Buffer Zone Table 626 Air Exchange Rate/hr: 0.5 – Dosage: 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	3	3	3	3	3	3	3
140	8	8	8	6	5	3	3	3	3	3
280	11	11	9	9	6	3	3	3	3	3
710	23	23	21	21	18	12	3	3	3	3
1420	35	35	35	34	29	21	11	3	3	3
2830	38	38	35	32	3	3	3	3	3	3
7080	82	82	79	76	67	47	3	3	3	3
14 160	128	126	123	120	107	81	44	3	3	3
21 240	162	160	157	152	136	105	62	3	3	3
28 320	192	191	184	178	160	125	78	30	3	3
70 790	311	309	302	291	264	207	133	62	3	3
141 580	439	439	439	433	390	308	203	107	55	3
283 170	439	439	439	439	439	439	300	166	99	3

Buffer Zone Table 627 Air Exchange Rate/hr: 0.5 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	3	3	3	3	3	3	3	3
60	6	6	6	6	5	3	3	3	3	3
140	12	12	12	11	9	6	3	3	3	3
280	17	17	17	15	14	8	3	3	3	3
710	32	32	32	30	26	20	9	3	3	3
1420	49	49	47	46	41	32	18	5	3	3
2830	62	61	59	56	49	27	3	3	3	3
7080	116	116	113	108	96	72	38	3	3	3
14 160	174	172	169	163	146	114	70	21	3	3
21 240	218	216	212	207	184	145	93	43	3	3
28 320	256	255	248	242	216	171	111	56	3	3
70 790	418	415	404	393	354	280	183	98	50	3
141 580	439	439	439	439	439	415	276	154	93	3
283 170	439	439	439	439	439	439	407	233	146	3

Buffer Zone Table 628 Air Exchange Rate/hr: 1 – Dosage: 1 or 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	3	3	3	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	3	3	3	3	3	3	3	3	3	3
21 240	38	37	35	32	15	3	3	3	3	3
28 320	50	50	47	44	35	3	3	3	3	3
70 790	90	88	87	82	70	40	3	3	3	3
141 580	142	142	139	133	117	84	29	3	3	3
283 170	215	213	209	201	178	136	75	3	3	3

Buffer Zone Table 629 Air Exchange Rate/hr: 1 – Dosage: 2.5 or 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	5	3	3	3	3	3	3	3	3	3
1420	14	14	12	12	9	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	53	53	50	49	40	3	3	3	3	3
21 240	73	72	70	67	58	38	3	3	3	3
28 320	88	88	85	82	72	50	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
70 790	148	146	143	139	122	90	40	3	3	3
141 580	221	219	215	209	186	142	84	3	3	3
283 170	328	326	319	309	277	215	136	56	3	3

Buffer Zone Table 630 Air Exchange Rate/hr: 1 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	11	11	9	9	6	3	3	3	3	3
1420	20	20	18	18	15	9	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	41	41	40	37	26	3	3	3	3	3
14 160	75	73	72	69	59	40	3	3	3	3
21 240	98	98	94	90	79	58	15	3	3	3
28 320	116	116	113	108	96	72	35	3	3	3
70 790	191	189	184	178	158	122	70	3	3	3
141 580	283	282	274	265	239	186	117	46	3	3
283 170	419	416	405	393	352	277	178	90	30	3

Buffer Zone Table 631 Air Exchange Rate/hr: 1 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	14	14	14	14	11	5	3	3	3	3
1420	24	24	23	23	20	14	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	55	55	53	50	41	3	3	3	3	3
14 160	91	90	88	85	75	53	3	3	3	3
21 240	117	116	113	110	98	73	38	3	3	3
28 320	139	137	134	130	116	88	50	3	3	3
70 790	226	224	218	212	191	148	90	3	3	3
141 580	335	332	325	315	283	221	142	67	3	3
283 170	439	439	439	439	419	328	215	114	56	3

Buffer Zone Table 632 Air Exchange Rate/hr: 1 – Dosage: 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100 %	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	5	5	5	5	5	3	3	3	3	3
140	9	9	9	9	8	5	3	3	3	3
280	14	14	14	12	11	5	3	3	3	3

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
710	27	27	26	26	23	17	6	3	3	3
1420	43	43	41	40	35	26	15	3	3	3
2830	52	52	49	47	38	3	3	3	3	3
7080	101	101	98	93	82	61	26	3	3	3
14 160	151	149	146	142	126	99	59	3	3	3
21 240	191	189	183	178	160	125	79	32	3	3
28 320	223	221	216	210	189	148	96	44	3	3
70 790	363	360	352	341	308	242	158	82	30	3
141 580	439	439	439	439	439	358	239	133	76	3
283 170	439	439	439	439	439	439	352	201	125	3

Buffer Zone Table 633 Air Exchange Rate/hr: 1 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	5	5	5	5	5	3	3	3	3	3
60	8	8	8	8	6	5	3	3	3	3
140	15	14	14	14	12	8	3	3	3	3
280	21	21	21	20	17	12	3	3	3	3
710	40	38	38	37	32	24	14	3	3	3
1420	58	58	56	55	49	38	23	9	3	3
2830	78	76	75	72	62	43	3	3	3	3
7080	137	136	133	128	116	88	52	3	3	3
14 160	204	203	198	192	172	136	87	40	3	3
21 240	253	253	247	241	215	171	113	58	15	3
28 320	297	296	290	280	253	201	133	72	35	3
70 790	439	439	439	439	413	326	216	122	70	3
141 580	439	439	439	439	439	439	323	186	117	3
283 170	439	439	439	439	439	439	439	277	178	30

Buffer Zone Table 634 Air Exchange Rate/hr: 2 – Dosage: 1 or 1.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	3	3	3	3	3	3	3	3	3	3
1420	5	5	5	3	3	3	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	3	3	3	3	3	3	3	3	3	3
14 160	29	27	24	20	3	3	3	3	3	3
21 240	47	47	46	43	32	3	3	3	3	3
28 320	61	61	58	55	46	23	3	3	3	3
70 790	107	105	102	99	84	56	3	3	3	3
141 580	163	163	158	154	136	101	47	3	3	3
283 170	245	244	238	230	206	157	91	3	3	3

Buffer Zone Table 635 Air Exchange Rate/hr: 2 – Dosage: 2.5 or 3 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	8	8	6	6	3	3	3	3	3	3
1420	17	17	15	15	12	5	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	32	30	27	24	3	3	3	3	3	3
14 160	64	64	61	59	50	29	3	3	3	3
21 240	85	84	82	79	69	47	3	3	3	3
28 320	102	102	99	94	84	61	23	3	3	3
70 790	168	168	163	157	140	107	56	3	3	3
141 580	251	250	244	236	212	163	101	24	3	3
283 170	369	366	358	347	311	245	157	73	3	3

Buffer Zone Table 636 Air Exchange Rate/hr: 2 – Dosage: 5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	3	3	3	3	3	3	3	3	3	3
280	3	3	3	3	3	3	3	3	3	3
710	14	14	12	12	9	3	3	3	3	3
1420	23	23	21	21	18	12	3	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	52	52	49	46	38	3	3	3	3	3
14 160	87	85	82	79	70	50	3	3	3	3
21 240	111	110	108	104	91	69	32	3	3	3
28 320	131	131	126	123	110	84	46	3	3	3
70 790	215	215	210	204	180	140	84	3	3	3
141 580	319	315	309	299	270	212	136	61	3	3
283 170	439	439	439	439	396	311	206	108	49	3

Buffer Zone Table 637 Air Exchange Rate/hr: 2 – Dosage: 6.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	3	3	3	3	3	3	3	3	3	3
140	5	5	5	5	3	3	3	3	3	3
280	6	6	5	3	3	3	3	3	3	3
710	18	17	17	15	14	8	3	3	3	3
1420	29	27	27	26	23	17	5	3	3	3
2830	3	3	3	3	3	3	3	3	3	3
7080	66	66	62	61	52	32	3	3	3	3
14 160	105	104	102	98	87	64	29	3	3	3
21 240	133	133	128	125	111	85	47	3	3	3

28 320	157	155	152	146	131	102	61	3	3	3
70 790	255	253	248	241	215	168	107	38	3	3
141 580	376	373	364	354	319	251	163	82	24	3
283 170	439	439	439	439	439	369	245	134	73	3

Buffer Zone Table 638 Air Exchange Rate/hr: 2 – Dosage: 14.5 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	3	3	3	3	3	3	3	3	3	3
60	6	6	6	6	5	3	3	3	3	3
140	12	12	11	11	9	6	3	3	3	3
280	17	17	17	15	14	8	3	3	3	3
710	32	32	30	29	26	20	9	3	3	3
1420	49	49	47	46	41	30	18	3	3	3
2830	62	61	59	56	49	27	3	3	3	3
7080	114	113	110	107	96	72	38	3	3	3
14 160	171	169	165	160	143	113	70	20	3	3
21 240	213	213	209	203	181	143	91	43	3	3
28 320	250	248	244	236	213	168	110	55	3	3
70 790	407	404	395	384	344	274	180	99	47	3
141 580	439	439	439	439	439	402	270	154	93	3
283 170	439	439	439	439	439	439	396	230	146	3

Buffer Zone Table 639 Air Exchange Rate/hr: 2 – Dosage: 24 kg/100 m³

Enclosure Size (m ³)	Retention Rate									
	100%	99%	95%	90%	75%	50%	25%	10%	5%	1%
30	6	6	6	5	5	3	3	3	3	3
60	9	9	9	9	8	5	3	3	3	3
140	17	17	17	15	14	9	5	3	3	3
280	24	24	24	23	20	14	5	3	3	3
710	44	44	43	41	37	27	17	3	3	3
1420	66	66	62	61	55	43	27	12	3	3
2830	88	88	85	82	73	53	3	3	3	3
7080	155	154	151	145	131	102	62	3	3	3
14 160	229	227	221	215	195	154	101	50	3	3
21 240	285	283	277	268	242	194	128	69	32	3
28 320	334	331	325	315	283	226	151	84	46	3
70 790	439	439	439	439	439	366	247	140	84	3
141 580	439	439	439	439	439	439	361	212	136	3
283 170	439	439	439	439	439	439	439	311	206	49