



Health
Canada

Santé
Canada

Your health and
safety... our priority.

Votre santé et votre
sécurité... notre priorité.

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Bureau of Chemical Safety
Food Directorate
Health Products and Food Branch

A WHO Collaborating Centre for
Food Contamination Monitoring



July, 2009



Canada

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Health Canada is the federal department responsible for helping the people of Canada maintain and improve their health. We assess the safety of drugs and many consumer products, help improve the safety of food, and provide information to Canadians to help them make healthy decisions. We provide health services to First Nations people and to Inuit communities. We work with the provinces to ensure our health care system serves the needs of Canadians.

Published by Authority of the Minister of Health.

Survey of Bisphenol A in Canned Powdered Infant Formula Products is available on Internet at the following address:

<http://www.hc-sc.gc.ca/fn-an/securit/packag-emball/bpa/index-eng.php>

Également disponible en français sous le titre :

Enquête sur la présence de bisphénol A dans les préparations en poudre vendues en conserve à l'intention des nourrissons.

© Her Majesty the Queen in Right of Canada, represented by the Minister of Health Canada, 2009.

Cat.: H164-79/4-2009E-PDF

ISBN: 978-1-100-12994-5

Survey of Bisphenol A in Canned Powdered Infant Formula Products

TABLE OF CONTENTS

Background	4
Sampling Plan and Analytical Methodology.....	4
BPA Levels in Canned Powdered Infant Formula Products	5
Health Significance of the Survey Results.....	5
Table 1: Concentrations of BPA in canned powdered infant formula products.....	7

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Background

Bisphenol A (BPA) is the common name for 2,2-(4,4'-dihydroxydiphenyl)propane, 4,4'-isopropylidenediphenol, or 2,2'-bis(4-hydroxyphenyl)propane. It is used as an intermediate in the production of epoxy resins which are used in the internal coating for food and beverage cans to protect the food from direct contact with metal. BPA can migrate from cans with epoxy coating into foods, especially at elevated temperatures (for example, for hot-fill or heat-processed canned foods). BPA is one of the 23000 chemical substances on the CEPA (Canadian Environmental Protection Act) Domestic Substance List (DSL) identified for further evaluation under government of Canada's Chemical Management Plan (CMP).

BPA was included in Batch 2 of the Challenge under CMP carried out by Health Canada and Environment Canada. On October 18, 2008, the Government of Canada released its final assessment report, including the Government's proposed risk management approaches to reduce Canadian exposure to BPA. Health Canada has committed to a research and monitoring agenda to further investigate potential human health effects of BPA and improve its understanding of Canadian exposure to this chemical through food sources. The purpose of this survey was to gather occurrence levels of BPA in canned powdered infant formula products to contribute in updating the BPA exposure estimate for Canadians.

Sampling Plan and Analytical Methodology

The survey covered 38 canned powdered infant formula products marketed under 11 brands by 6 different companies. The products were purchased in June 2008 from local grocery stores in Ottawa. Among the 38 products, 31 products were milk based and 7 were soya based.

Health Canada continually works to develop more sensitive methods with detection limits as low as possible for the determination of chemicals in foods in order to support more accurate human exposure assessments. The method used previously by Health Canada for [determination of BPA in liquid infant formula](#) products was adapted and validated for the determination of BPA in canned powdered infant formula products. This method, with an average method detection limit (MDL) of 0.13 ng/g*, was used to determine levels of BPA in canned powdered infant formula products that are sold in Canada. The results of the analyses for each canned powdered infant formula product collected are shown in [Table 1](#).

* 1 ng/g is equivalent to 1 part per billion (ppb)

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Notes:

- ❑ Canned powdered infant formula samples were tested as consumed.
- ❑ It should be noted that the absence of any particular brand from this survey means only that the brand was not included in the survey. No particular inference should be drawn from the presence or absence of any brand.
- ❑ Samples represent a “snapshot” of the market at the time of sampling and do not represent market share. Product names and availability correspond to the time of sampling and may not represent current products on the market. Differences between brands do not necessarily reflect differences in consumer exposure to BPA.
- ❑ The results shown in [Table 1](#) are generated for research purposes and should not be considered as representative of the distribution of BPA in canned powdered infant formula products or to assist or guide product choices for consumers.

BPA Levels in Canned Powdered Infant Formula Products

[Table 1](#) summarizes the results of the analysis for BPA in samples from canned powdered infant formula products. BPA was not detected in any of the 38 products for which the average MDL = 0.13 ng/g*.

Health Significance of the Survey Results

In March, 2008, Health Canada’s Food Directorate completed a [Health Risk Assessment of BPA from food packaging applications](#)⁺ to determine exposure estimates to BPA. Health Canada’s Food Directorate has concluded that:

- ❑ The current dietary exposure to BPA through food packaging is not expected to pose a health risk to the general population, including newborns and infants.
 - The nutritional benefits of baby food products far outweigh any possible risk.
- ❑ In view of uncertainties related to datasets on possible neurodevelopmental and behavioural effects that BPA may have in experimental animals, Health Canada’s Food Directorate has recommended that precaution be exerted on products consumed by the sensitive subset of the population, i.e. infants and newborns, by applying the ALARA (as low as reasonably achievable) principle to reduce their exposure to BPA through food packaging applications.

* 1 ng/g is equivalent to 1 part per billion (ppb)

⁺ Health Risk Assessment of Bisphenol A from Food Packaging Applications. ISBN: 978-0-662-48686-2

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Other international food regulatory agencies – notably in the United States, Europe, the United Kingdom and Australia-New Zealand – have reviewed the “[Health Risk Assessment of Bisphenol A from Food Packaging Applications](#)”⁺, prepared by Health Canada’s Food Directorate, and have confirmed that the conclusions reached are supported by the current scientific evidence as described in the document.

Based on the overall weight of evidence, as described in the “[Health Risk Assessment of BPA from food packaging applications](#)”⁺, the results of this survey further confirms Health Canada’s previous assessment conclusion that the current dietary exposure to BPA through food packaging uses is not expected to pose a health risk to the consumer.

⁺ Health Risk Assessment of Bisphenol A from Food Packaging Applications. ISBN: 978-0-662-48686-2

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Table 1: Concentrations (ng/g) of BPA in canned powdered infant formula products as consumed

- It should be noted that the absence of any particular brand from this survey means only that the brand was not included in the survey. No particular inference should be drawn from the presence or absence of any brand.
- Samples represent a “snapshot” of the market and do not represent market share. Product names and availability correspond to the time of sampling and may not represent current products on the market. Differences between brands do not necessarily reflect differences in consumer exposure to BPA.
- The results shown in the table are exploratory and should not be used to indicate the distribution of BPA in canned infant formula products or to assist or guide product choices for consumers.

Company / Manufacturer	Brand Name	Product Description	Type	Infant age (months)	BPA Concentration (ng/g)
Abbott Laboratories	Similac	Similac Regular Infant Formula with DigestEase and Immunotide, Step 1	Milk	0 +	< MDL
		Similac Sensitive Lactose Free Infant Formula. For Fussiness, Gas or Diarrhea due to Lactose Sensitivity	Milk	0 - 12	< MDL
		Similac Go & Grow, Calcium Enriched, Iron-Fortified Infant Formula with Immunotide, Step2	Milk	6 - 24	< MDL
		Similac Go & Grow, Calcium Enriched, Iron-Fortified Infant Formula with Immunotide + Omega-3 and Omega-6, Step2, Value Size	Milk	6 - 24	< MDL
	Isomil	Isomil Advance Soy Infant Formula with Omega-3 and Omega-6, Step 1	Soya	0 +	< MDL
		Isomil Infant Formula with Soya for Allergy and Sensitivity to Milk Protein, Step 2 for Older Babies	Soya	6 - 24	< MDL
Costco Wholesale Canada Ltd.	Kirkland Signature	Kirkland Infant Formula with Iron	Milk	0 - 12	< MDL
Loblaws Inc.	President's Choice	President's Choice Infant Formula, Step 1	Milk	0 - 12	< MDL
		President's Choice Infant Formula with Iron, Step 1	Milk	0 - 12	< MDL
		President's Choice Infant Formula Plus with Iron + Omega-3 and Omega-6	Milk	0 - 12	< MDL
		President's Choice Organics Infant Formula Plus with Iron, Omega-3 and Omega-6, Step 1	Milk	0 - 12	< MDL
		President's Choice Infant Formula Plus with added Iron and Calcium + Omega-3 and Omega-6, Step 2	Milk	6 - 18	< MDL
		President's Choice Soya Infant Formula Plus with Iron + Omega 3 and Omega-6, Step 1	Soya	0 - 12	< MDL
Mead Johnson Nutritionals	Enfamil	Enfamil Infant Formula with Iron, Value Size	Milk	Birth +	< MDL
		Enfamil A+ Iron Fortified Infant Formula with LIPIL - Blend of DHA Omega-3 and ARA Omega-6. Our Closest Formula to Breast Milk	Milk	Birth +	< MDL
		Enfamil A+ Iron Fortified Infant Formula with LIPIL - Blend of DHA Omega-3 and ARA Omega-6. With Gentlease for Fussiness or Gas.	Milk	0 - 12	< MDL
		Enfamil Thickened A+ Iron Fortified Infant Formula with LIPIL - Blend of DHA Omega-3 and ARA Omega-6. For Babies who Spit up Frequently	Milk	0 - 12	< MDL
		Enfamil Lactose Free Iron Fortified Infant Formula. For Common Feeding Problems	Milk	0 - 12	< MDL
		Enfamil Iron Fortified Soy Infant Formula, Milk Free Formula	Soya	0 - 12	< MDL

Survey of Bisphenol A in Canned Powdered Infant Formula Products

Mead Johnson Nutritionals	Enfagrow	Enfagrow Toddler Nutrition, High in Iron and Calcium, Nutritional Supplement, Plain Flavour	Milk	12 +	< MDL
		Enfagrow Toddler Nutrition, High in Iron and Calcium, Nutritional Supplement, Vanilla Flavour	Milk	12 +	< MDL
	Enfapro	Enfapro Calcium Enriched and Iron Fortified Infant Formula. Helps Build Strong Bones and Teeth	Milk	6 +	< MDL
	Nutramigen	Nutramigen Iron Fortified Infant Formula. Hypoallergenic - For Babies with Cow's Milk Allergy	Milk	0 - 12	< MDL
Nestlé Nutrition	Nestlé	Nestlé Good Start Iron Fortified Infant Formula, Easier to Digest	Milk	0 - 12	< MDL
		Nestlé Good Start Iron Fortified Infant Formula with Omega-3 and Omega-6 + DHA and ARA (Nutrients Naturally Found in Breast Milk). Easier to Digest	Milk	0 - 12	< MDL
		Nestlé Good Start 2 Iron Fortified Infant Formula with Added Calcium, Easier to Digest	Milk	6 - 18	< MDL
		Nestlé Good Start 2 Iron Fortified Infant Formula with Added Calcium and Omega-3 and Omega-6 + DHA and ARA (Nutrients Naturally Found in Breast Milk). Easier to Digest	Milk	6 - 18	< MDL
		Nestlé Follow-Up Transition, Iron Fortified Infant Formula, Calcium Enriched	Milk	6 - 18	< MDL
		Nestlé Alsoy Iron Fortified Soy Infant Formula, Lactose Free and Vegetarian with Omega-3 and Omega-6 +DHA and ARA (Nutrients Found Naturally in Breast Milk)	Soya	0 - 12	< MDL
		Nestlé Alsoy 2 Iron Fortified Infant Formula with Added Calcium and Omega-3 and Omega-6 + DHA and ARA (Nutrients Naturally Found in Breast Milk). Lactose Free and Vegetarian	Soya	6 - 24	<MDL
PBM Nutritionals	Parent's Choice	Parent's Choice Infant Formula with Iron	Milk	0 - 12	< MDL
		Parent's Choice Concentrated Infant Formula with Iron and Omega-3 and Omega-6	Milk	0 - 12	< MDL
		Parent's Choice Organic Infant Formula with Iron and a Blend of Lipids DHA + ARA (Nutrients Found Naturally in Breast Milk), with Omega-3 and Omega-6	Milk	0 - 12	< MDL
		Parent's Choice Gentle Cow's Milk Based Infant Formula Containing Whole Milk Protein and Partially Hydrolyzed Whey Protein with Iron and Omega-3 and Omega-6	Milk	0 - 12	< MDL
		Parent's Choice 2 Infant Formula with Iron and Calcium + Omega-3 and Omega-6. For Older Infants	Milk	6 - 18	< MDL
		Parent's Choice Toddler Nutritional Supplement High in Iron and Calcium. Vanilla Natural and Artificial Flavour	Milk	12+	< MDL
		Parent's Choice Soya-Based Infant Formula with Iron and Omega-3 and Omega-6. Milk free and Lactose Free	Soya	0 - 12	< MDL
	Compliments	Compliments Little Ones Infant Formula with Iron	Milk	0 - 12	< MDL