Canadian General Standards Board

Office des normes générales du Canada

CGSB

ONGC

136-GP-Series
Série des 136-GP

CANCELLATION

April 1983

CANADIAN GENERAL
STANDARDS BOARD

Standard for

POLICE EQUIPMENT

All fourteen provisional standards in this series are hereby cancelled due to a lack of interest. These standards are listed on the following pages.

ANNULATION

Avril 1983

OFFICE DES NORMES
GÉNÉRALES DU CANADA

Norme

MATÉRIEL POLICIER

Les quatorze normes provisoires de cette série sont annulées par la présente parce qu'elles ne suscitent plus aucun intérêt. Ces normes sont énumérées aux pages suivantes.

Canada

Ottawa, Canada K1A 1G6

Standard No. Nº de norme	Title Titre	Date of Issue Date de parution
*136-GP-1P	Silica, Colloidal, Synthetic Silice colloïdal synthétique	May 75 Mai 75
*136-GP-2P	Chemical Agent, CS Agent chimique, CS	May 75 Mai 75
*136-GP-3P	Chemical Agent, CS 1 Agent chimique, CS 1	October 75 Octobre 75
*136-GP-4P	Chemical Agent, CS 2 Agent chimique, CS 2	October 75 Octobre 75
*136-GP-5P	Chemical Agent, CR Agent chimique, CR	October 75 Octobre 75
136-GP-10MP	Grenades, Tear Gas, Pyrotechnic Type, for Open Area Use Grenades lacrymogènes de type pyrotechnique utilisées en milieu ouvert	March 79 Mars 79
136-GP-12MP	Grenades, Tear Gas, Pyrotechnic Type, for Enclosed Space Use Grenades lacrymogènes de type pyrotechnique utilisées en milieu fermé	March 79 Mars 79

*Unilingual Standard
Norme unilingue

Standard No. Nº de norme	Title Titre	Date of Issue Date de parution
136-GP-14MP	Cartridges, Tear Gas, 12 Gauge, for Enclosed Space Use Cartouches, gaz lacrymogène, calibre 12, utilisées en milieu fermé	March 79 Mars 79
136-GP-18MP	Grenades, Smoke, White Grenades à fumée blanche	March 79 Mars 79
*136-GP-25P	Highway Fusees, Red Torches à flamme rouge, pour autoroutes	October 75 Octobre 75
136-GP-26MP	Thunderflashes Pétards	May 77 Mai 77
136-GP-27MP	Paraflares, Hand-Held Fusées éclairantes à parachute, à main	March 79 Mars 79
136-GP-85MP	Sunglasses, for Police Use Lunettes de soleil pour policiers	June 77 Juin 77
136-GP-90MP	Ink, Fingerprint Encre, empreintes digitales	April 77 Avril 77

*Unilingual Standard
Norme unilingue

Specifications Board
Supply and Services Canada

Office des Normes
Approvisionnements et Services Canada

Provisional Standard for : Chemical Agent, CR

This provisional standard applies to commercial grade CR, one type of chemical known as dibenz (b,f)-1,4-oxazepine.

Withdrawn/Retirée

136-GP-5P
October 1975

Price Code A

Pour l'édition française commander (F)136-GP-5P

This provisional standard has been issued to meet a procurement need. It has not been ratified by the Board.

Standards Officer - H.E. Mitton, CGSB

Withdrawn/Retirée

FOREWORD

The CANADIAN GOVERNMENT SPECIFICATIONS BOARD under whose auspices this standard has been developed is a federal government agency engaged in the production of voluntary standards in a wide range of subject areas through the medium of technical committees and the consensus process. The technical committees are representative of relevant interests including producers, consumers and other users, retailers, governments, educational institutions, technical, professional and trade societies, and research and testing organizations. The CGSB has been accredited by the Standards Council of Canada as a national standards writing organization. The standards that it develops and offers as National Standards of Canada conform to the criteria and procedures established for this purpose by the Standards Council of Canada. In addition to standards it publishes as National Standards, CGSB produces standards to meet particular needs, in response to requests from a variety of sources in both the public and private sectors.

Although the intended primary application of each standard is stated in its Definition or Scope clause, it is important to note that it remains the responsibility of the user of the standard to judge its suitability for his particular purpose.

CGSB standards are subject to periodic review to ensure that they keep abreast of technological progress. Suggestions for their improvement, which are always welcome, are brought to the notice of the technical committees concerned. Changes to standards are issued either as separate amendment sheets or in revised editions of the standards.

An up-to-date listing of CGSB standards, including details on latest issues and amendments, and ordering instructions, will be found in the Catalogue of Standards which is published annually with cumulative supplements, and is available without charge upon request.

Further information on the CGSB and its services and standards may be obtained from:

Canadian Government Specifications Board
6th Floor, 88 Metcalfe Street
Ottawa, Ontario
Canada
K1A 0S5

Withdrawn/Retired

136-GP-5P
October 1975

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Provisional Standard
for

CHEMICAL AGENT, CR

1. DEFINITION

1.1 This provisional standard applies to commercial grade CR, one type of chemical chemically known as dibenz (b,f)-1,4-oxazepine.

1.2 For uses see par. 6.2.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this standard:

2.1.1 American Society for Testing and Materials (ASTM)

E 29 Recommended practice for Indicating which Places of Figures are to be Considered Significant in Specified Limiting Values.

E 300 Recommended Practice for Sampling Industrial Chemicals

E 324 Relative Initial and Final Melting Points, and the Melting Range of Industrial Organic Chemicals.

2.1.2 Canadian Transport Commission (CTC)

Regulations for the Transportation of Dangerous Commodities by Rail.

2.1.3 Code of Federal Regulations (CFR)

49 CFR 171-179 Department of Transport Transportation Rules and Regulations for the Transportation of Explosives and Other Dangerous Articles.

2.2 Reference to the above publications and to test methods therein, is to the latest issues, unless otherwise specified.

3. DETAIL REQUIREMENTS

NOTICE: The CR shall comply with the detail requirements below, the limits of which are absolute, and not subject to correction for tolerances of test methods (par. 5.4).

3.1 Melting Point Range - The melting point of the CR shall not be less than 69°C and the melting point range shall not be greater than 2°C.

ASTM E 324

3.2 Purity - The purity shall be not less than 96% CR.

Par. 5.3.1

3.3 Turbidity - There shall be no turbidity or undissolved residue when dissolved in ethyl alcohol.

Par. 5.3.2

3.4 Optical density - The optical density of a 10% by mass solution of CR in alcohol shall be less than 0.04 between 800 nm and 500 nm, shall not exceed 0.1 at 450 nm and shall be less than 0.14 at 440 nm.

Par. 5.3.3

3.5 Solubility - CR shall be completely soluble in propylene glycol.

Par. 5.3.4

Withdrawn/Retirée

4. PREPARATION FOR DELIVERY

4.1 Packaging and Packing - Details of packaging and packing shall be as specified in the purchase documents.

4.2 Marking - In addition to any special markings required by the purchase documents, unit packages and shipping containers shall be marked in accordance with CTC (or DOT) regulations.

5. INSPECTION

5.1 General - Unless otherwise stipulated in the contract, it is the prime contractor's responsibility to satisfy the inspection authority that the commodity conforms to this standard. This may be accomplished either by performing the tests specified in this standard or by demonstrating to the satisfaction of the inspection authority that manufacturing processes and techniques are so controlled that conformity to this standard is ensured. The contractor may, for this purpose, utilize his own facilities or other testing establishment acceptable to the inspection authority.

5.2 Sampling - A representative sample of about 500 g shall be taken for inspection tests in accordance with good sampling practice. ASTM E 300 provides guidance on sampling solids (powders).

5.3 Testing -

5.3.1 *Purity* - A gas chromatogram of the sample shall be performed. The standard shall be pure CR as prepared by either method given in Appendix A and resublimed just prior to use. The purity of the CR sample shall be determined by a comparison of peak areas (par. 3.2). The gas chromatogram shall be performed under the following conditions:

(a) Instrument - Varian Aerograph Model 2800, 1800 or equivalent
(b) Column - Glass 6 ft x 1/4 in I.D., packed with 15% QF-1 on Chromasorb W, AW-DMCS.
(c) Column Temperature - 140°C
(d) Carrier Flow Nitrogen, 96.5 kPa (14 psi)
(e) Solvent - Benzene
(f) Detector - FID (Flame Ionization Detection) Hydrogen flow at 25 ml/min; Air flow at 300 ml/min.

5.3.2 *Turbidity* - A 10% by mass solution of CR in 95% ethyl alcohol shall be prepared and viewed with the unaided eye in good light. The presence of any undissolved residue in the solution or turbidity shall be reported.

5.3.3 *Optical Density* - A 10% by mass solution of CR in 95% ethyl alcohol shall be prepared. The optical density of this solution shall be measured by means of spectrophotometer at the following wavelengths: 800 nm, 700 nm, 600 nm, 500 nm, 450 nm and 440 nm.

5.3.4 *Solubility* - Prepare a 1% by mass solution of CR in propylene glycol (U.S.P. grade). The mixture may be stirred and heated to a temperature not in excess of 50°C. After 24 h, the solution shall be examined for evidence of undissolved material.

5.4 Assessment of Conformance to the Standard - For tests carried out by the inspecting laboratory, average results will be used if multiple determinations are made. For those test methods where repeatability data are given, the average value derived from the individual results that agree within the repeatability limits may be used at the discretion of the Inspection Authority, provided an indication is given of the total number of results obtained and of the number falling outside the repeatability limits. To determine conformance with each requirement, an observed value or calculated value shall be rounded off to the nearest unit in the last right-hand place of figures used in expressing the limiting value, in accordance with the rounding off-procedure given in ASTM E 29.

6. NOTES

6.1 Ordering Data - Purchase documents for chemical agents to this standard should specify the following:

(a) Title, number and date of this standard.
(b) Quantity required.
(c) Inspection Authority.
(d) Special marking, if any, required (par. 4.2).

6.2 Intended Use - CR is intended for use in riot control.

Withdrawn/Retired

6.3 Precaution - CR produces irritating physiological effects, such as stinging sensations to moist skin, running nose, sneezing, coughing, and burning of the eyes accompanied by a copious flow of tears. It should be handled with care. Surgical rubber gloves and goggles should be worn and tests should be performed under a hood.

6.4 Column and column packing is available from Chromatographic Supplies Ltd., P.O. Bag 1150, 300 Laurier Boulevard, Brockville, Ontario, K6V 5W1.

6.5 The publications listed in par. 2.1.1 may be obtained from the American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. U.S.A.

6.6 The publication listed in par. 2.1.2 may be obtained from Information Canada, 171 Slater Street, Ottawa, Ont. K1A OS9. For interpretation consult the Canadian Transport Commission, 275 Slater Street, Ottawa, Ont., K1A ON9.

6.7 The publication listed in par. 2.1.3 may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402. Orders should cite "49 CFR 171-179".

6.8 Acknowledgement - This provisional standard is technically similar to a Canadian Forces Purchase Description and acknowledgement is made of assistance received from this source.

6.9 Système International (Metric) Units - The SI (Metric) equivalents for customary yard/pound units are shown in this standard. Since the equivalents are not exact, the SI values are provided for information only to familiarize readers with metric units. Readers are cautioned that the multiples and sub-multiples of the units used in this standard may not be the same as those eventually established as a result of deliberations by the Metric Commission. This is NOT a soft conversion.

Withdrawn/Retired

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GRAY/OSAKA METHODS FOR THE PREPARATION OF HIGHLY PURE CR FOR USE AS A GAS CHROMATOGRAPHIC STANDARD

METHOD 1 - Column Chromatography

Apply a solution of 20 g of CR in 50 ml of hot petroleum ether (boiling range: 60-80°C) and 20 ml of benzene to a 5 cm chromatographic column containing 450 g of Fisher Alumina A540 (previously packed in petroleum ether). Elute the CR with petroleum ether/benzene (1:1), collecting only the initial bright yellow band. Evaporate solvent to yield a syrup which dissolve in hot petroleum ether (100 to 200 ml) and treat with 1 g of activated charcoal (Norite is suggested). After careful filtration through Celite and partial removal of the solvent under reduced pressure a yield of about 18 g of CR should be obtained as fine, light yellow needles having a melting point at 72-73°C. Thin layer chromatography (TLC) on Woelm silica gel plates, developed with chloroform and visualized with iodine vapor, will probably show an impurity as a very faint spot at Rf 0.36. 5 g of this material sublimed at 50°C at 1.3 Pa (0.01 ml Hg) will yield about 3.3 g of pale yellow needles, melting at 72-73°C and TLC will show only one spot. For use as a Gas Chromatographic Standard this material must be resublimed just before use. Stock solutions must be used the same day that they are prepared.

METHOD 2 - Dry Column Chromatograph

Using the technique of Loev (Note 1), pack a 100 x 5 cm nylon tube with Woelm silica gel for dry column chromatography (deactivated to Brockmann activity II). Prepare a suspension of 10 g of crude CR in 30 ml of chloroform with approximately 40 g of the Woelm silica gel used in packing the column. Evaporate the solvent in a rotary evaporator to yield a dry powder which is placed in the column followed by 25 mm of sand.

Elute using chloroform with a constanc head of 2 to 5 cm until the solvent front reaches the bottom of the column (approximately 1 h). When the nylon column is viewed under ultra-violet light, two bands will be seen near the bottom. Cut these out and extract with boiling $CH_3OH/CH\ Cl_3$ (1:1). Thin layer chromatography will probably show a contaminant and so the extract must be dried over anhydroux Na_2SO_4 and evaporated to yield a yellow oil. Crystalization with petroleum ether will yield 1 g of pale yellow needles, melting at 71.5-73°C. Sublimation will yield about 0.6 g of solid CR showing one spot on TLC. For use as Gas Chromatographic Standard this material must be resublimed just just before use. Stock solutions must be used the same day that they are prepared.

Withdrawn/Retired

NOTES

(1) Loev, B. and Goodman, M.M. Chemistry and Industry, 2026 (1967)