B376-M1980
(reaffirmed 2019)

Portable Containers for Gasoline and Other Petroleum

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General Instruction No. 3

B376-M1980
April 1989

CSA Standard B376-M1980, *Portable Containers for Gasoline and Other Petroleum Fuels*, was published in July 1980; it consisted of 16 pages, each of which was dated July 1980.

An erratum to Clause 6.4 is incorporated (and identified by a vertical line in the margin) in the attached replacement pages.

CSA Standard B376-M1980 now consists of the following pages:

1–12, 15, and **16** dated **July 1980;**

13 and **14** dated **April 1989.**

These replacement pages are to be inserted into your copy of the Standard; the pages replaced should be kept for reference.

storage for 30 d at 73°F (23°C), the container shall be reweighed (W3), and the percentage loss shall be calculated as follows: (W2 - W3) divided by (W2 - W1) and the quotient multiplied by 100.

5.7 Flammability

5.7.1 Metal Containers. The container shall be filled to its nominal capacity with ASTM reference fuel "A" (iso-octane) and capped. It shall then be placed upright upon a standard fire brick of nominal dimensions 2.5 inches × 4.5 inches × 9 inches (65 mm × 115 mm × 230 mm). Two sheets of crumpled newspaper measuring at least 24 inches × 33 inches (0.6 m × 0.8 m) each, shall be wrapped around the lower part of the container as close to it as possible without being under the container. The newspaper shall then be ignited in at least four places and allowed to burn up completely.

5.7.2 Plastic Materials. Plastic containers and plastic components of all containers shall be exposed to a standard 0.375-inch (10-mm) diameter Bunsen burner with a blue flame approximately 1 inch (25 mm) high with the cone-tip temperature of 1700°F (925°C) and the flame tip impinging on the plastic for 10 s. There shall be no flare-up. Three specimens, at least, of each container or component shall be tested; all shall pass.

5.7.3 One sample plastic container shall be sectioned to determine the locations of the thinnest walls, edges, and corners. At least three other samples shall be tested as follows: Each of the three test containers shall be filled to approximately three-fourths full, using water at room temperature, and capped. A standard 0.375-inch (10-mm) diameter Bunsen burner with a blue flame approximately 1 inch (25 mm) high and adjusted so that the centre cone of the flame is approximately 0.375 inch (10 mm) long with the temperature of the flame just above the cone in the order of 1700°F (925°C) and the temperature of the flame 0.75 inch (20 mm) above the burner maintained at approximately 1550°F (845°C) shall be so placed that the tip of the flame impinges on the container at successive locations, below the liquid level, for a period of 75 s at each location. The end of the burner shall be approximately 0.75 inch (20 mm) away from the container under test and with the burner inclined 13° from the vertical. The fuel used in the Bunsen burner shall be natural gas having a calorific value of approximately 1000 Btu/ft^3 (37 MJ/m^3). The locations on each container shall be at least

(a) three locations on the sides;

(b) three locations on the edges;

(c) three locations on the corners.

The foregoing locations shall include the thinnest walls, edges, and corners.

5.8 Chemical Resistance

5.8.1 Two cleanly cut plastic specimens, approximately 5 inches × 0.5 inch (125 mm × 15 mm), or two plastic components (eg, vent caps) shall be dried at 122°F (50°C) for 18 h. The weight of each specimen (W1) shall be accurately determined. After being immersed in a test medium (see Clause 5.8.2) for 24 h at 73°F (23°C), each shall be wiped dry using a clean dry cloth and reweighed immediately (W2). The change in weight shall be expressed as a percentage of the initial weight, as follows: (W2 - W1) divided by W1 and the quotient multiplied by 100. The average value shall be reported for each test medium.

5.8.2 The two test mediums shall be as follows:

(a) ASTM reference fuel "C" (mixture of 50% iso-octane: 50% toluene by volume);

(b) blend of ASTM reference fuel "A" (iso-octane) and ASTM reference oil No. 3 (considered to be representative of low aniline point automotive lubricating oils, defined by ANSI/ASTM Standard D471, Rubber Property—Effect of Liquids) in a ratio of 16 to 1 by volume.

5.9 Spout Quality

5.9.1 The plastic spout, separately, shall be inserted between smooth, parallel vice jaws with only the base flange of the spout projecting beyond the vice jaws. The vice jaws shall then be closed so that opposite walls of the spout contact each other. The spout shall then be removed from the vice and installed on the container as for normal pouring.

5.9.2 When a flexible spout is a component of a container, the base of the spout shall be rigidly fixed and the flexible portion of the spout moved 2500 times randomly to 45° from the axis of symmetry. Each successive position shall be approximately opposite to the previous position.

5.10 Gasket Material

5.10.1 Gasket material shall not crack, harden, shrink, swell, lose weight, or otherwise deteriorate sufficiently to permit leakage when

(a) exposed for 96 h to oxygen at a gauge pressure of 300 psi (2 MPa) and at a temperature of 158°F (70°C); and

(b) immersed for 70 h in ASTM reference fuel "C" (ANSI/ASTM Standard D471, Rubber Property—Effect of Liquids), and ASTM No. 3 swelling oil. A different sample gasket shall be exposed to each test medium.

5.10.2 Compressibility of gasket material shall be expressed as a percentage, on the basis of 100 times the actual measured compression divided by the original thickness, when the gasket is compressed by a uniformly distributed load of 500 psi (3.5 MPa) of actual gasket area for a period of 5 min. The gasket shall be loaded until the specified load is maintained for the specified time.

5.10.3 Gaskets shall show no cracking when examined after bending through 180° around a 1-inch (25-mm) diameter mandrel at a bend rate of approximately 90°/s at the -40 ± 2°F (-40 ± 1°C) test temperature. The test gaskets and the 1-inch diameter cylindrical bend test mandrel shall be kept at a temperature of -40 ± 2°F (-40 ± 1°C) for at least 2 h before test. Gaskets of a diameter of 0.75 inch (20 mm) and smaller shall be tested as above, except that the mandrel diameter shall be 0.5 inch (13 mm).

5.11 Vapour Pressure Test. The container shall be filled to its nominal capacity with gasoline, the closures secured with all components in place, and stored at an ambient temperature which results in a vapour gauge pressure of at least 5 psi (35 kPa). The closures shall then be released as recommended by the manufacturer. No liquid fuel shall emit, as required by Clause 3.4.7.

5.12 Corrosion Test—Metal Containers. With the container closures secured in the manner normally provided for the container, after a cupful of the salt spray solution has been poured into the container, the container shall be subjected to the tests prescribed in ANSI/ASTM Standard B117, Salt Spray (Fog) Testing. To produce an accelerated test result, the container shall be exposed to a spray of 20% salt solution for 14 d or 5% for 21 d, after which it shall be allowed to dry for 4 h at room temperature.

6. Marking

6.1 Each container shall be clearly and permanently marked with

(a) the manufacturer's name or trademark;

(b) the date of manufacture (month and year);

(c) the nominal capacity in gallons*;

(d) model number;

(e) a caution worded as follows, or similar, in English and French:

PETROLEUM FUEL — FLAMMABLE — DANGER

The letters of this caution shall be not less than 0.25 inch (6 mm) high, except that letters not less than 0.375 inch (10 mm) high shall be used for the word DANGER; and

(f) in accordance with Clause 3.3.1, each container shall bear a legible permanent marking showing the recommended safe maximum filling level.

**Provisions should be made for the marking of metric quantities.*

6.2 Each cap and detachable spout shall bear the manufacturer's registered trademark and the part number of the component.

6.3 Where an interchange of spouts would result in noncompliance with Clause 3.4.7, identification of the manufacturer's recommended spout part number shall be clearly and permanently marked on the container.

6.4 Kerosene containers shall contain the marking shown in Clauses 6.1(a), (b), (c), (d), (f), 6.2, 6.3, 6.5, and 6.6.

6.5 The word KEROSENE shall appear on the container in a type size and style such that it is conspicuous and easily readable.

6.6 Caution Labelling

6.6.1 The following caution markings shall be applied in French and English to each container:

(a) the word CAUTION (English) and ATTENTION (French) in a type size and style that gives it greater prominence than the rest of the caution notice;

(b) DANGER: HARMFUL OR FATAL IF SWALLOWED. IF SWALLOWED, DO NOT INDUCE VOMITING. CALL PHYSICIAN IMMEDIATELY
and
DANGER : CE LIQUIDE PEUT CAUSER DES BLESSURES GRAVES OU ENTRAÎNER LA MORT S'IL EST AVALÉ. NE PAS FAIRE VOMIR. APPELER UN MÉDECIN IMMÉDIATEMENT;

(c) COMBUSTIBLE: CONTAINS PETROLEUM DISTILLATES
and
COMBUSTIBLE : CONTIENT DES DISTILLATS DE PÉTROLE;

(d) DO NOT USE NEAR HEAT, SPARKS, OR FLAME
and
NE PAS UTILISER PRÈS D'UNE SOURCE DE CHALEUR OU D'ÉTINCELLES OU PRÈS D'UNE FLAMME;

(e) KEEP OUT OF REACH OF CHILDREN
and
TENIR HORS DE LA PORTÉE DES ENFANTS;

(f) NEVER USE THIS CONTAINER FOR GASOLINE OR OTHER VOLATILE LIQUIDS AS SMALL AMOUNTS WILL DANGEROUSLY INCREASE RISK OF FIRE OR EXPLOSION
and
NE JAMAIS METTRE D'ESSENCE OU AUTRE LIQUIDE VOLATILE DANS CE CONTENANT. EN PETITE QUANTITÉ, LES LIQUIDES VOLATILES AUGMENTENT DANGEREUSEMENT LES RISQUES D'INCENDIE OU D'EXPLOSION.

April 1989
(Replaces p. 14, July 1987)

General Instruction No. 2

B376-M1980
July 1987

CSA Standard B376-M1980, Portable Containers for Gasoline and Other Petroleum Fuels, was published in July 1980; it consisted of 16 pages, each of which was dated July 1980.

Amendments to the Preface and Clauses 1.1, 3.2.3 (new), 3.2.4 (new), 4.1, 5.2.1.2 (new), 5.2.2.3 (new), 6.4 (new), 6.5 (new), and 6.6 (new) have been formally approved. These amendments are incorporated (and identified by a vertical line in the margin) in the attached replacement pages.

CSA Standard B376-M1980 now consists of the following pages:

3, 4, 7, 8, 15, and **16** dated **July 1980;**

5, 6, and **9—14A** dated **July 1987.**

These replacement pages are to be inserted into your copy of the Standard; the pages replaced should be kept for reference.

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Preface

This is the first edition of CSA Standard B376, Portable Containers for Gasoline and Other Petroleum Fuels. This Standard supersedes CSA Standards B144-1974, Portable Plastic Containers for Petroleum Fuels, and B252-1976, Portable Metal Containers for Gasoline and Other Petroleum Fuels.

It was decided to combine the requirements of CSA Standards B144 and B252 into one document because of the similarity of many features and also to cover the "hybrid-type" container that uses both metal and plastic. Subsequently in 1987, the Standard was amended to include specific requirements for kerosene containers for use particularly in conjunction with kerosene-fired heaters.

This Standard was prepared by the Technical Committee on Portable Containers for Petroleum Fuels under the jurisdiction of the Standards Steering Committee on Fire Safety and Fuel Burning Equipment and was formally approved by these Committees.

April 1987

Notes:
(1) *Use of the masculine gender in this Standard is not meant to exclude the feminine gender. Similarly, use of the singular does not exclude the plural (and vice versa) when the sense allows.*
(2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the user of the Standard to judge its suitability for his particular purpose.*
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B376-M1980

Portable Containers for Gasoline and Other Petroleum Fuels

1. Scope

1.1 This Standard applies to portable containers of up to and including 5 gallons (25 L) nominal capacity, made from metal or plastic, and intended for the storage and transportation of petroleum fuels having a flash point lower than 37.8°C (100°F), but excludes containers that are integral with or attached to any object, single-trip containers in which fuel is prepackaged and those within the Scope of CSA Standard Z102.15, Steel Drums.

1.2 This Standard includes requirements for materials, impact and burst strengths, permeability, and other safety factors. Marking requirements are also included.

1.3 All clauses in this Standard apply to both metal and plastic containers unless specified for one or the other.

1.4 Metric units of measurement in this Standard are in accordance with the International System of Units (SI). If a value for measurement as given in this Standard is followed by an equivalent value in other units, the first stated is to be regarded as the requirement. A given equivalent value may be approximate.

2. Definitions

2.1 The following definitions apply in this Standard:

Adjustable spout means a spout so designed and constructed as to possess the property of maintaining a curved set applied to it by the user of the container to aid in pouring;

Closure means that part of the container which fits over the filling or other orifice and makes a liquid-tight and vapour-tight joint;

Gallon means Canadian gallon;
Note: *One Canadian gallon may be considered to be equal to 1 imperial gallon or 1.2 American gallons.*

Petroleum fuels means liquid petroleum products commonly burned for the generation of heat or light, or used in an engine;

Plastic means a material that contains as an essential ingredient an organic substance of large molecular weight, is solid in its finished state, and at some stage in its manufacture or in its processing into finished articles can be shaped by flow;

Pouring vent means that part of the container enabling free entry of air to replace the liquid being poured out;

Spout means the component through which the contents of the container can be dispensed.

3. General Requirements

3.1 Materials

3.1.1 Materials used for fabricating metal containers for petroleum fuels shall be suitable for the intended application. Where used, solder shall not soften at temperatures lower than 350°F (175°C), and any corrosive flux residue shall be removed.

3.1.2 Materials used for fabricating plastic containers for petroleum fuels shall be suitable for the intended application, and they shall not be significantly affected by exposure to ultraviolet radiation.

3.1.3 Materials from plastic containers exposed to liquids other than water when used in the production tests shall not be re-used in the manufacture of other containers.

3.2 Colour

3.2.1 The body of the finished metal container shall be predominantly coloured red on the outside with a fuel-resistant, corrosion-resistant finish complying with CGSB Standard 1-GP-12c, Standard Paint Colors, Codes: gloss 509-301, semi-gloss 509-201, or flat 509-101, RED.

3.2.2 Plastic containers shall be fabricated from opaque, pigmented plastic. The finished plastic container shall be red in accordance with Clause 3.2.1.

3.2.3 The body of the finished metal containers intended for use with kerosene shall be predominantly coloured blue on the outside with a fuel-resistant, corrosion-resistant finish complying with CGSB Standard 1-GP-12c, Standard Paint Colors, Codes in the range from 502-104 through 502-306, BLUE.

3.2.4 Plastic containers intended for use with kerosene shall be fabricated from opaque, pigmented plastic. The finished plastic container shall be blue in accordance with Clause 3.2.3.