



Designation: F2874 – 20

Standard Specification for One Time Use Portable Emergency Fuel Containers (PEFC) for Use by Consumers¹

This standard is issued under the fixed designation F2874; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification establishes nationally recognized construction, performance, and marking standards for portable emergency fuel containers intended for attended transport of fuel and for one time use by consumers. This specification is not for containers intended for unattended storage of fuel.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D975 Specification for Diesel Fuel

D4814 Specification for Automotive Spark-Ignition Engine Fuel

D5798 Specification for Ethanol Fuel Blends for Flexible-Fuel Automotive Spark-Ignition Engines

F2517 Specification for Determination of Child Resistance of Portable Fuel Containers for Consumer Use

2.2 *Other References:*

16 CFR 1500 Federal Hazardous Substance Act³

16 CFR 1500.121 Labeling Requirements; Prominence, Placement, and Conspicuousness³

¹ This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.10 on Standards for Flammable Liquid Containers.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Code of Federal Regulations, available from U.S. Government Printing Office, Washington, DC 20402.

Children's Gasoline Burn Prevention Act Public Law 110-278 [H.R. 814]

3. Terminology

3.1 *Definitions:*

3.1.1 *bag-in-box, n*—any container consisting of an inner non-rigid plastic container supported by an outer rigid container with the inner container fitted with a fill neck fitting that is interconnected to the outer rigid container.

3.1.2 *constrictor, n*—part of the nozzle that prevents refilling the container with fuel.

3.1.3 *diesel, n*—hydrocarbon/FAME mixture obtained from petroleum distillation and/or biomass processing.

3.1.4 *fill neck, n*—part of the container where the fuel can be dispensed into at the fuel station.

3.1.5 *gasoline, n*—a hydrocarbons/alcohol mixture obtained from petroleum distillation and/or biomass processing, generally containing small amounts of additives, suitable for use as a fuel in spark-ignition, internal combustion engines.

3.1.6 *portable emergency fuel container (PEFC), n*—a vessel designed to be carried by hand and to be used only one time in emergencies to transport fuel from distribution points to stranded motor vehicles.

3.1.7 *rated capacity, n*—volume indicated on the container, may also be termed nominal capacity or maximum filling level.

3.1.8 *spout, n*—component through which the contents of the container can be dispensed.

3.1.9 *total volume, n*—rated capacity plus any remaining space within the container.

4. Requirements

4.1 The container shall be a bag-in-box design, show evidence of good workmanship, and meet the following requirements:

4.1.1 All container tests shall be performed after closures are secured as usage dictates.

4.2 *Capacity*—The maximum rated capacity shall be 5 L (1.3 gal).

4.2.1 The total volume of the container shall exceed its rated capacity by at least 5 %.

4.3 *Stability*—Each container shall not tip over when tested in accordance with 6.1.

4.4 *Handle*—Each container shall be provided with a handle that passes the test described in 6.8.

4.5 *Drop Strength*—Containers shall show no evidence of leakage when tested in accordance with 6.2.

4.6 *Internal Pressure*—Containers must pass the test described in 6.4 with pressure vent held closed or bypassed.

4.7 *Exposure Test*—Containers must pass the test described in 6.4 (internal pressure test) after 6.6 for each fuel type tested.

4.8 *Openings*—Openings in containers shall be provided with a means of closure.

4.8.1 *Pour Spout*—The fill neck shall accept a pouring spout. The pouring spout shall be designed to permit fuel to be poured without leakage. The fill spout must contain a constrictor to prevent refilling. The closures on the container shall not leak when tested in accordance with 6.5. The fuel must dispense without spilling when dispensed into a typical on-road vehicle. All closures must also meet Specification F2517 for the first use only as applicable. Portable Emergency Fuel Containers are exempt from the sections of Specification F2517 dealing with reuse or second use such as to open and close the closure for 250 cycles or the adult-re-securing portion of the test.

4.8.2 *Constrictor*—The pouring spout must contain a non-removable restriction that will not allow refilling of the container. The maximum internal diameter of the constrictor shall be 19 mm (0.75 in.). The constrictor must not be removable by unscrewing and must not be removable by hand without tools in accordance with 6.7.

4.8.3 *Pressure Vent*—The container with spout installed shall vent between ¼ psi and 2 psi per 6.3.

4.8.4 *Fill Neck*—The fill neck shall have a minimum diameter of 28 mm (1.125 in.) in order to receive a fuel dispensing nozzle.

4.9 *Fuels*:

4.9.1 Diesel fuel is allowed to contain up to 20 % biodiesel, such as specified in Specification D975.

4.9.2 Gasoline shall comply with Specification D4814 or D5798 and is allowed to contain up to 85 % alcohol oxygenates, typically ethanol.

5. Marking

5.1 The lettering shall be of block style and shall be of a style consistent with the requirements listed in 16 CFR 1500. The color and contrast shall also be consistent with 16 CFR 1500.121. Because this product is not sold with hazardous chemicals inside at the time of retail sale, it is acceptable to include an outer removable package without warning labels. The marking requirements must be on the outer surface on the functional carrier that contains the hazardous fuel *after* filling.

5.2 The information required is for a single panel or label, or both. If, because of size restrictions, the information must be divided, the main panel shall contain language consistent with the requirements in 16 CFR 1500 and a statement, “Read carefully other cautions on the _____ panel.”

NOTE 1—If the information is divided, it would be a good practice to

have a statement “Harmful or Fatal if swallowed” and “If swallowed, do not induce vomiting, call physician immediately,” together.

5.3 The following information shall appear on either the top or two opposing side of all PEFCs included in an ANSI style hazard window with ANSI hazard triangle:

DANGER
EXTREMELY FLAMMABLE
VAPORS CAN EXPLODE
HARMFUL OR FATAL IF SWALLOWED
THIS CONTAINER APPROVED FOR (LIST SPECIFIC FUELS APPROVED
FROM SUBSECTION 6.6)
DO NOT EVER USE FUELS TO IGNITE FIRES

- If swallowed, do not induce vomiting, call physician immediately.
- Keep out of reach of children.
- Avoid prolonged breathing of vapors.
- Do not siphon by mouth.
- Do not store anywhere unattended.
- Vapors can be ignited by spark or flame source many feet away.
- Keep away from flame, pilot lights, stoves, heaters, electric motors, and other sources of ignition.
- Keep container closed.

5.4 In addition, the following information shall appear on either the top or two prominent opposing sides of the container. Letters shall be ¾ in. tall or more and included in an ANSI style hazard window with ANSI hazard triangle.

- Emergency One Time Use Only
- Do Not Attempt to Refill

5.5 In addition, the following information shall appear on the top or two prominent opposing sides of the container. Letters shall be ⅜ in. tall or more and included in an ANSI style hazard window with ANSI hazard triangle.

- Warning: It is unlawful to store fuel in this container unattended. Filled container must be in your possession until drained.
- This container is approved for Gasoline, E85 and Diesel (also list any additional specialty fuels approved in 6.6, Exposure Test).

5.6 In addition, the following information shall appear on a removable sticker or cap that must be removed from the fill neck prior to filling:

- Warning: Once filled, it is unlawful to leave the filled container unattended at any time.

5.7 The container shall be clearly marked with at least one of the following:

- 5.7.1 The manufacturer’s name.
- 5.7.2 The private labeler’s name.
- 5.7.3 The month and year of manufacture.

5.8 The container shall be marked with its rated capacity in liters and in gallons.

5.9 The top of the container must also be clearly marked with “Top” or “This side up”.

6. Test Methods

6.1 *Stability Test*—Fill the sample container with water to its rated capacity by volume. Secure the closures as for attended transportation. Place the container on an inclined plane forming an angle of 0.35 rad (20°) with the horizontal. Orient the container so that the top is facing up. During the test, rotate the container about its vertical axis so that stability can be checked with the sample facing any direction. The sample must remain stable and not tip over at any point of the rotation.