Regulatory Analysis Form

This space for use by IRRC

2001 OCT 26 AM 11:21

REVIEW COMMISSION

(1) Agency

Environmental Protection

(2) I.D. Number (Governor's Office Use)

7-369

IRRC Number: 2227

(3) Short Title

Portable Fuel Containers

(4) PA Code Cite
25 *PA Code* Chapter 130

(5) Agency Contacts & Telephone Numbers

Primary Contact: Sharon Trostle, 783-8727

Secondary Contact: Barbara Sexton, 783-8727

(6) Type of Rulemaking (Check One)

__X__ Proposed Rulemaking
____ Final Order Adopting Regulation
____ Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

__x__ No
___ Yes: By the Attorney General
___ Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

The proposed rulemaking adopts permeation standards for new portable fuel containers and establishes requirements for no-spill fill spouts on new portable fuel containers. Definitions of terms are included in the proposal.

The proposed requirements will minimize permeation of gasoline vapors through the container walls and will reduce or eliminate gasoline spillage during filling of equipment fuel tanks.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

This action is being taken under the authority of Section 5 of the Air Pollution Control Act (35 P.S § 4005.)

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

The proposed regulation is not specifically mandated by law, court order or regulation.

The proposed regulation is part of the Commonwealth's efforts, in conjunction with the other states in the Ozone Transport Region (OTR), to achieve additional reductions of volatile organic compound emissions. These reductions are necessary for continued progress toward attainment and maintenance of the health-related ozone standard in Pennsylvania.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

Large areas of the Commonwealth continue to exceed the health-based standard for ground-level ozone. Additional reductions of volatile organic compounds are necessary to continue to move toward attainment in those areas where the ozone levels exceed the National Ambient Air Quality Standard (NAAQS). This regulation will help move the Commonwealth toward attainment of the health-based standard for ozone, which is in the best interest of the public.

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

When ground-level ozone is present in concentrations in excess of the federal health-based standard, public health is adversely affected. The federal Environmental Protection Agency has concluded that there is an association between ambient ozone concentrations and increased hospital admissions for respiratory ailments, such as asthma. Further, although children, the elderly, and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to ambient ozone while engaged in activity that involves physical exertion. Though such symptoms are often temporary, repeated exposure could result in permanent lung damage.

The implementation of additional measures to address the ozone air quality nonattainment in Pennsylvania is necessary to protect the public health.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

The proposed regulations will result in improved air quality for all citizens of the Commonwealth by reducing ozone precursor emissions. The reduction in ozone precursor emissions will result in improved ozone air quality throughout Pennsylvania. The proposed regulations will result in reduced levels of hazardous air pollutants throughout Pennsylvania. An added benefit is a significant reduction in exposure to harmful fuel vapors when using portable fuel containers. In addition, the proposed regulation reduced spillage and waste of gasoline, and reduced pollution of surface waters during fueling of watercraft.

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)
The proposed revisions will require that manufacturers modify production practices to manufacturer containers with an impermeable barrier on the container wall to minimize loss of gasoline through the container walls. In addition, the manufacturers will be required to produce spill-proof fill spouts for the containers.

The proposed requirements would apply only to containers manufactured after January 1, 2003. Therefore, the only impact to residents of the Commonwealth will be when they purchase new fuel containers, at a higher cost than those presently marketed. A significant portion of the cost increase will be offset by reduced evaporative loss of gasoline and reduced spillage. There are no known manufacturers of portable fuel containers in Pennsylvania.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

Anyone who manufacturers or sells portable fuel containers will be required to comply with the requirements. .

There are no known manufacturers of portable fuel containers in Pennsylvania.

Vendors range from local convenience stores to large national department store and building supply chains.

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

The member states of the Ozone Transport Commission have met over the past 18 months with representatives of the national container manufacturers and related industries. In general, the industry supports the proposed regulation. The production of the spill-proof spouts and treatment of the containers will increase production costs and the cost to the consumer, but the producers believe that the cost increase will not be a significant issue.

The proposed revisions were discussed with the Air Quality Technical Advisory Committee at the May 24, 2001 meeting. In addition, the revisions have been discussed with the Small Business Compliance Advisory Committee.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.
The industry indicates that the requirements may add an additional $6 to $10 to the cost of containers from 1 to 6 gallons respectively. Estimates developed for the Ozone Transport Commission (OTC) indicate that the annual incremental compliance cost for this type of requirement throughout the Ozone Transport Region would be approximately $18,500,000. Based on population, costs to Pennsylvania residents are estimated to be approximately $3,300,000 annually. Estimated VOC emission reductions are estimated to be approximately 5,700 tons per year. If the value of the emission reductions (gasoline saved) is factored in, the annual net cost is approximately $500,000.

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

The final regulations are expected to impose no additional direct costs on local governments.

If, however, a local government purchases portable fuel containers, additional cost commensurate with those for the private sector may be experienced.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

To the extent that state government purchases portable fuel containers, cost will be commensurate with those the private sector will experience.

Nominal costs will be experienced by the Commonwealth to assist in providing training, outreach and assistance to the regulated community. No new staff resources are anticipated to be necessary.

Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	$	$	$	$	$	$
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Savings	0.00	0.00	0.00	0.00	0.00	0.00
COSTS:	0.00	0.00	0.00	0.00	0.00	0.00
Regulated Community	0.00	0.00	3.3M	3.3M	3.3M	3.3M
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Costs	0.00	0.00	3.3M	3.3M	3.3M	3.3M
REVENUE LOSSES:						
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Losses	0.00	0.00	0.00	0.00	0.00	0.00

(20a) Explain how the cost estimates listed above were derived.

The gross costs savings associated with this regulation are based on projected annual incremental costs for the purchase of portable fuel containers that meet the requirements of the proposed regulation. These cost estimates are extrapolated from information developed for the OTC by E.H. Pechan and Associates. The gross costs do not reflect the savings in gasoline purchase costs that will result from the requirements. Emission estimates indicate that approximately 5,700 tons of gasoline are lost annually by permeation through container walls and by spillage. These requirements will reduce the permeation loss by in excess of 96 percent and will essentially eliminate spillage losses. At a value of $1.50 per gallon, this is a savings of approximately $500 per ton. Net costs are approximately $500,000 per year.

Regulatory Analysis Form

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3	FY-2	FY-1	Current FY
Air Quality	28,000,000	28,000,000	26,000,000	24,000,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

The final regulation may result in an estimated annualized cost of approximately $3.3 million. These costs will be offset by the savings in gasoline costs experienced due to reduced permeation loss and spillage. The net cost to consumers is estimated to be approximately $500,000 annually.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

Non-regulatory options are not available.

This final rulemaking is part of the Commonwealth's efforts to achieve emission reductions necessary to attain and maintain the health-based ozone air quality standard. In order for the emissions reductions to be included in the SIP, they must be enforceable. Regulatory requirements are necessary to assure this enforceability.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

There are no other regulatory schemes available that will achieve the level of emission reductions necessary.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulation.

There is no federal counterpart for this proposed regulation.

The VOC emission reductions that will result from this regulation will help reduce ozone air quality and protect public health.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

The proposed regulations are part of a strategy for Pennsylvania and the other jurisdictions in the OTR to attain and maintain the health related ozone NAAQS. The increased cost of the new portable fuel containers will be borne by the consumer. A significant portion of the cost increase will be offset over the life of the container by reduced permeation loss and spillage.

Pennsylvania industry will not be put at a disadvantage by the proposed regulation. There are no manufacturers of these containers known in Pennsylvania. The principal manufacturers, all of whom are located outside of Pennsylvania, are already producing containers for the California market that meet the proposed requirements.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

Three public hearings will be held during a sixty-day comment period.

Regulatory Analysis Form
(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available. No. No recordkeeping and reporting requirements are contained in the proposed rulemaking. If a manufacturer wants to use an alternative compliance strategy, recordkeeping and reporting will be required.
(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers. There are no special provisions.
(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained? The regulation will be effective on the date of publication as final rulemaking in the *Pennsylvania Bulletin.* The requirements would become applicable in January 2003. No special permits or licenses are required.
(31) Provide the schedule for continual review of the regulation. This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

JL-1

FACE SHEET
FOR FILING DOCUMENTS
WITH THE LEGISLATIVE REFERENCE BUREAU

(Pursuant to Commonwealth Documents Law)

[illegible] 2001 OCT 26 AM 11:21
REVIEW COMMISSION

DO NOT WRITE IN THIS SPACE

Copy below is hereby approved as to form and legality. Attorney General (DEPUTY ATTORNEY GENERAL) OCT 01 2001 DATE OF APPROVAL ☐ Check if applicable. Copy not approved. Objections attached.	Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by: DEPARTMENT OF ENVIRONMENTAL PROTECTION ENVIRONMENTAL QUALITY BOARD (AGENCY) DOCUMENT/FISCAL NOTE NO. #7-369 DATE OF ADOPTION: BY: David E. Hess TITLE: DAVID E. HESS, CHAIRMAN (EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)	Copy below is hereby approved as to form and legality. Executive or Independent Agencies. BY: 9/20/01 DATE OF APPROVAL (Deputy General Counsel) ~~(Chief Counsel, Independent Agency)~~ (Strike inapplicable title) ☐ Check if applicable. No Attorney General approval or objection within 30 days after submission.

NOTICE OF
PROPOSED RULEMAKING
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

Portable Fuel Containers

25 Pa. Code, Chapter 130

NOTICE OF PROPOSED RULEMAKING
ENVIRONMENTAL QUALITY BOARD
[25 PA CODE CHAPTER 130]
PORTABLE FUEL CONTAINERS

PREAMBLE

The Environmental Quality Board (Board) proposes to establish a new Chapter 130 (relating to standards for products) to read as set forth in Annex A.

The new Chapter proposes to add Sections 130.101-109 to apply to persons who sell, supply, offer for sale, or manufacture for sale in the Commonwealth of Pennsylvania portable fuel containers or spouts, or both portable fuel containers and spouts, for use in the Commonwealth. This new Chapter will also add new definitions for terms to be used in the substantive provisions of the Chapter.

This notice is given under Board order at its meeting of September 18, 2001.

A. Effective Date.

These amendments will be effective upon publication in the *Pennsylvania Bulletin* as final rulemaking.

B. Contact Persons.

For further information, contact Terry Black, Chief, Regulation and Policy Development Section, Division of Air Resource Management, Bureau of Air Quality, Rachel Carson State Office Building, 12th Floor, P.O Box 8468, Harrisburg, PA 17105-8468, (717) 787-1663, or Bo Reiley, Assistant Counsel, Bureau of Regulatory Counsel, Office of Chief Counsel, Rachel Carson State Office Building, 9th Floor, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060.

C. Statutory Authority.

This proposed rulemaking is being made under the authority of Section 5 of the Air Pollution Control Act (35 PS § 4005) which grants the Board the authority to adopt regulations for the prevention, control, reduction and abatement of air pollution.

D. Background.

When ground-level ozone is present in concentrations in excess of the federal health-based standard, public health is adversely affected. The federal

Environmental Protection Agency (EPA) has concluded that there is an association between ambient ozone concentrations and increased hospital admissions for respiratory ailments, such as asthma. Further, although children, the elderly, and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to ambient ozone while engaged in activity that involves physical exertion. Though such symptoms are often temporary, repeated exposure could result in permanent lung damage. The implementation of additional measures to address ozone air quality nonattainment in Pennsylvania is necessary to protect the public health.

The purpose of this proposed rulemaking is to reduce the volatile organic compounds (VOCs) emitted from portable fuel containers. This proposed rule is part of Pennsylvania's specific action plan to achieve and maintain the ozone national ambient air quality standard in the Commonwealth.

A number of northeastern states have also committed to developing regulations designed to reduce the amount of VOCs emitted into the environment from portable fuel containers. It is anticipated that once these states, together with California, have adopted these regulations, it will have the effect of being a "de facto" national rule.

In addition to reducing VOC emissions, the proposed rule will also reduce public exposure to hazardous constituents present in gasoline such as benzene. Benzene is a toxic air contaminant and a known human carcinogen. Although the risk reductions have not been quantified, it is assumed that the spill-proof features and permeation requirement would significantly reduce benzene emissions.

This proposal would also improve water quality aquifers, lakes and rivers. It would greatly reduce the amount of gasoline spilled onto the ground while refueling lawn, garden, and small construction equipment, and other machines with small gasoline engines. Many marine pleasure craft, especially personal watercrafts, are refueled using portable containers, and threat of fuel spillage during on-water refueling is always present. The spill-proof systems would allow users of pleasure craft to refuel their engines without fuel spillage; this would eliminate the potential discharge of fuel into the aquatic environment from these activities.

This regulation applies to all portable fuel containers and/or spouts except 1) containers with capacity of less than or equal to one quart; 2) rapid refueling devices with capacities equal to or greater than 4 gallons, provided they are designed for use in officially sanctioned off-road motorcycle competitions; and 3) safety cans and portable marine fuel tanks that operate in conjunction with outboard motors.

Portable fuel containers and/or spouts must be equipped with an automatic shut-off device that stops fuel flow before the fuel tank overflows, and an automatic device that closes and seals when it is removed from the fuel tank. There are also other required design specifications, all of which are intended to significantly lessen the possibility of gasoline spillage and reduce emissions.

Compliance with the proposed performance standards are designed to maximize VOC emission reductions. It is estimated that VOCs would be reduced by approximately 75% of total uncontrolled emissions from this sector once the rule is finalized.

The major implementation issues are consumer acceptance and the long life of these containers. These containers will look and operate somewhat differently than those currently on the market. However, based on experiences to date, manufacturers have indicated that consumers prefer the new product after becoming familiar with it. Pennsylvania, through the OTC, has worked with manufacturers of these containers, and manufacturers have indicated that they would be able to provide the products to the market by 2003.

The Department worked with the Air Quality Technical Advisory Committee (AQTAC) in the development of this proposed rulemaking. At its May 24, 2001 meeting, AQTAC recommended adoption of the proposed rulemaking. AQTAC also recommends that the Department continue aggressive efforts with other states to support national standards for these products.

E. Summary of Regulatory Requirements.

The proposed addition of Chapter 130 includes definitions of terms and substantive provisions as well. The new definitions under § 130.102 include "ASTM," "nominal capacity," "outboard engine," "permeation," "portable fuel container," "product category," "spill-proof spout," "spill-proof system," "spout," and "target fuel tank."

The substantive provisions of Chapter 130 include under § 103.101 applicability requirements and a cross reference to Department of Labor and Industry requirements related to portable fuel containers. Section 130.103 establishes performance standards for portable fuel containers and spill-proof spouts. The requirements include, among other things, automatic shut-off spouts that stop fuel flow before the tank overflows. Under §130.104 exemptions are provided for portable fuel containers and spouts manufactured for sale and use outside of the state. Innovative products exemptions are provided for in § 130.105 to encourage the design and manufacture of products that will result in cumulative VOC emissions below those types of containers currently in the market. Administrative requirements under § 130.106 include record keeping and labeling.

Under § 130.107 a person or manufacturer that cannot comply with the requirements of the regulation due to extraordinary circumstances beyond that person's reasonable control may request a variance. Test procedures to determine if performance standards for portable fuel containers and spouts have been met are specified in § 130.108.

These regulatory provisions, if approved, will be submitted to the EPA as an amendment to the State Implementation Plan (SIP).

F. Benefits and Costs.

Executive Order 1996-1 requires a cost/benefit analysis of the proposed amendments.

Benefits.

Overall, the citizens of this Commonwealth will benefit from these required changes because they will result in improved air quality by reducing ozone precursor emissions and encourage new technologies and practices, which reduce emissions. Moreover, it is also anticipated that adoption of this regulation will save consumers money because it will result in reduced evaporative loss from gasoline.

Compliance Costs.

Manufacturers indicate that the requirements may add an additional $6 to $10 to the cost of containers. Cost to Pennsylvania residents is estimated to be approximately $3 million annually with an estimated VOC emission reduction to be approximately 7,500 tons per year. If the value of the emission reductions of gasoline saved is factored in, the net cost to citizens of the Commonwealth will be reduced to be approximately $500,000.

Compliance Assistance Plan.

The Department will continue to work with the other states in the Northeast, with the OTC and with the national product manufacturers to ensure their understanding of the requirements. In addition, the Department is exploring opportunities for partnering with organizations to facilitate the transition to the new products.

Paperwork Requirements.

The regulatory revisions will not increase the paperwork that is already generated during the normal course of business operations.

G. Sunset Review.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether it effectively fulfills the goals for which it was intended.

H. Regulatory Review.

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5 (a)), on October 26, 2001 the Department submitted a copy of the proposed rulemaking to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, if IRRC has objections to any portion of the proposed amendments, it will notify the Department within 10 days following the close of the Committees' review period. The notification shall specify the regulatory review criteria which have not been met by that portion of the proposed amendments to which an objection is made. The Regulatory Review Act specifies detailed procedures for the Department, the Governor and the General Assembly to review these objections prior to final publication of the amendments.

I. Public Comments.

Written Comments – Interested persons are invited to submit comments, suggestions or objections regarding the proposed amendments to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board by January 16, 2002. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by January 16, 2002. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

Electronic Comments – Comments may be submitted electronically to the Board at RegComments@dep.state.pa.us. A subject heading of the proposal and return name and address must be included in each transmission. Comments submitted electronically must also be received by the Board by January 16, 2002.

J. Public Hearings.

The Board will hold three public hearings for the purpose of accepting comments on this proposal. The hearings will be held at 1:00 p.m. as follows:

December 11, 2001, Department of Environmental Protection, Southwest Regional Office, 400 Waterfront Drive, Pittsburgh, PA.

December 13, 2001, Department of Environmental Protection, Southcentral Regional Office, 909 Elmerton Avenue, Harrisburg, PA.

December 17, 2001, Department of Environmental Protection, Southeast Regional Office, Suite 6010, Lee Park, 555 North Lane, Conshohocken, PA.

Persons wishing to present testimony at a hearing are requested to contact Debra Failor at the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least 1 week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to 10 minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons with a disability who wish to attend the hearing and require an auxiliary aide, service or other accommodation in order to participate should contact Debra Failor at (717) 787-4526, or through the Pennsylvania AT&T Relay Service at 1 (800) 654-5984 (TDD) to discuss how the Department may accommodate their needs.

By:

David E. Hess
Chairman

Editor's Note: The following text is new and is printed in regular type to enhance readability.

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 130. STANDARDS FOR PRODUCTS

Subchapter A. Portable Fuel Containers

Sec.

§ 130.101. Applicability.

Except as provided in Section 130.104 (relating to exemptions), this article applies to a person who sells, supplies, offers for sale, or manufactures for sale in this Commonwealth portable fuel containers or spouts, or both portable fuel containers and spouts for use in the state. (For additional requirements, see 35 P. S. § 1247(c) (relating to portable fuel containers) and 37 Pa. Code § 11.7 (relating to container construction)).

§ 130.102. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

ASTM--the American Society for Testing and Materials.

Nominal Capacity-- the volume indicated by the manufacturer that represents the maximum recommended filling level.

Outboard Engine--a spark-ignition marine engine that, when properly mounted on a marine watercraft in the position to operate, houses the engine and drive unit external to the hull of the marine watercraft.

Permeation--the process by which individual fuel molecules may penetrate the walls and various assembly components of a portable fuel container directly to the outside ambient air.

Portable Fuel Container--a container or vessel with a nominal capacity of ten gallons or less intended for reuse that is designed or used primarily for receiving, transporting, storing, and dispensing fuel.

Product Category--the applicable category that best describes the product with respect to its nominal capacity, material construction, fuel flow rate, and permeation rate, as applicable, as determined by the state.

Spill-Proof Spout--a spout that complies with all of the performance standards specified in Section 130.103(b) (relating to performance standards for portable fuel containers and spill-proof spouts).

Spill-Proof System--a configuration of portable fuel container and firmly attached spout that complies with all of the performance standards in Section 130.103(a).

Spout--a device that can be firmly attached to a portable fuel container for conducting pouring through which the contents of a portable fuel container can be dispensed.

Target Fuel Tank--a receptacle that receives fuel from a portable fuel container.

§ 130.103. Performance Standards for Portable Fuel Containers and Spill-Proof Spouts.

(a) Except as provided in Section 130.104 (relating to exemptions), no person shall sell, supply, offer for sale, or manufacture for sale in Pennsylvania on or after January 1, 2003, a portable fuel container or spout, or a portable fuel container and spout which, at the time of sale or manufacture, does not meet the following performance standards for

spill-proof systems:

(1) Has an automatic shut-off that stops the fuel flow before the target fuel tank overflows.

(2) Automatically closes and seals when removed from the target fuel tank and remains completely closed when not dispensing fuel.

(3) Has only one opening for both filling and pouring.

(4) Provides a fuel flow rate and fill level of one of the following:

(i) Not less than one-half gallon per minute for portable fuel containers with a nominal capacity of:

(A) Less than or equal to 1.5 gallons and fills to a level less than or equal to 1 inch below the top of the target fuel tank opening.

(B) Greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1 inch below the top of the target fuel tank opening if the spill-proof system clearly displays the phrase "Low Flow Rate" in type of 34 point or greater on each spill-proof system or label affixed thereto, and on an accompanying package.

(ii) Not less than 1 gallon per minute for portable fuel containers with a nominal capacity greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1.25 inches below the top of the target fuel tank opening.

(iii) Not less than 2 gallons per minute for portable fuel containers with a nominal capacity greater than 2.5 gallons.

(5) Does not exceed a permeation rate of 0.4 grams per gallon per day.

(6) Is warranted by the manufacturer for a period of not less than one year against defects in materials and workmanship.

(b) Except as provided in Section 130.104, no person shall sell, supply, offer for sale, or manufacture for sale in the state on or after January 1, 2003, a spout which, at the time of sale or manufacture, does not meet the following performance standards for spill-proof spouts:

(1) Has an automatic shut-off that stops the fuel flow before the target fuel tank overflows.

(2) Automatically closes and seals when removed from the target fuel tank and remains completely closed when not dispensing fuel.

(3) Provides a fuel flow rate and fill level of one of the following:

(i) Not less than one-half gallon per minute for portable fuel containers with a nominal capacity of one of the following:

(A) Less than or equal to 1.5 gallons and fills to a level less than or equal to 1 inch below the top of the target fuel tank opening.

(B) Greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1 inch below the top of the target fuel tank opening if the spill-proof spout clearly displays the phrase "Low Flow Rate" in type of 34 point or greater on an accompanying package, or for spill-proof spouts sold without packaging, on either the spill-proof spout or a label affixed thereto.

(ii) Not less than 1 gallon per minute for portable fuel containers with a nominal capacity greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1.25 inches below the top of the target fuel tank opening.

(iii) Not less than 2 gallons per minute for portable fuel containers with a nominal capacity greater than 2.5 gallons.

(4) Is warranted by the manufacturer for a period of not less than 1 year against defects in materials and workmanship.

(c) The test procedures for determining compliance with the performance standards in this section are set forth in Section 130.108 (relating to test procedures). The manufacturer of portable fuel containers or spouts or both portable fuel containers and spouts must perform the tests for determining compliance as set forth in Section 130.108 to show that their product meets the performance standards of this section prior to allowing the product to be offered for sale in the state. The manufacturer must maintain records of these compliance tests for as long as the product is available for sale in the state and make those test results available to the Department within 60 days of request.

(d) Notwithstanding the provisions of subsections (a) and (b), a portable fuel container or spout or both portable fuel container and spout manufactured before January 1, 2003, may be sold, supplied, or offered for sale until January 1, 2004 if the date of manufacture or a date code representing the date of manufacture is clearly displayed on the portable fuel container or spout.

§ 130.104. Exemptions.

(a) This subchapter does not apply to a portable fuel container or spout or both portable fuel container and spout manufactured in the state for shipment, sale, and use outside of the state.

(b) This subchapter does not apply to a manufacturer or distributor who sells,

supplies, or offers for sale in the state a portable fuel container or spout or both portable fuel container and spout that does not comply with the performance standards specified in Section 130.103 (relating to performance standards for portable fuel containers and spill-proof spouts), as long as the manufacturer or distributor can demonstrate the following:

(1) The portable fuel container or spout or both portable fuel container and spout is intended for shipment and use outside of the state.

(2) The manufacturer or distributor has taken reasonable prudent precautions to assure that the portable fuel container or spout or both portable fuel container and spout is not distributed in the state.

(c) This subchapter does not apply to portable fuel containers with a nominal capacity less than or equal to 1 quart.

(d) This subchapter does not apply to rapid refueling devices with nominal capacities greater than or equal to 4 gallons, provided such devices are designed for use in officially sanctioned off-highway motorcycle competitions or either create a leak-proof seal against a stock target fuel tank or are designed to operate in conjunction with a receiver permanently installed on the target fuel tank.

(e) This subchapter does not apply to portable fuel tanks manufactured specifically to deliver fuel through a hose attached between the portable fuel tank and the outboard engine for the purpose of operating the outboard engine.

§ 130.105. Innovative Products.

The Department may exempt a portable fuel container or spout or both portable fuel container and spout from one or more of the requirements of Section 130.103 (relating to performance standards for portable fuel containers and spill-proof spouts) if a manufacturer demonstrates to the satisfaction of the Department that, due to the product's design, delivery system, or other factors, the use of the product will result in cumulative VOC emissions below the highest emitting representative spill-proof system or representative spill-proof spout in its product category as determined from applicable testing.

(1) An applicant must apply in writing to Pennsylvania for an innovative product exemption claimed under this section. The application must include the supporting documentation that quantifies the emissions from the innovative product, including the actual physical test methods used to generate the data. In addition, the applicant must provide information necessary to enable the Department to establish enforceable conditions for granting the exemption.

(2) For a portable fuel container or spout or both portable fuel container and spout for which an innovative product exemption has been granted pursuant to this section, the applicant shall notify the Department in writing at least 30 days before the applicant changes a product's design, delivery system, or other factors that may effect the

VOC emissions during recommended usage. The applicant must also notify the Department within 30 days after the applicant learns of information that would alter the emissions estimates submitted to the Department in support of the exemption application.

(3) If the performance standards specified in Section 130.103 are amended for a product category, all innovative product exemptions granted for products in the product category, except as provided in this section, have no force and effect as of the effective date of the amended performance standards.

(4) If the Department believes that a portable fuel container or spout or both portable fuel container and spout for which an exemption has been granted no longer meets the criteria for an innovative product specified in this section, the Department may revoke or modify the exemption.

§ 130.106. Administrative Requirements.

(a) Each manufacturer of a portable fuel container or spout or portable fuel container and spout subject to and complying with Section 130.103(a) (relating to performance standards for portable fuel containers and spill-proof spouts) must clearly display the following on each spill-proof system:

(1) The phrase "Spill-Proof System."

(2) A date of manufacture or representative date.

(3) A representative code identifying the portable fuel container or portable fuel container and spout as subject to and complying with Section 130.103(a).

(b) Each manufacturer of a spout subject to and complying with Section 130.103(b) must clearly display the following on the accompanying package, or for spill-proof spouts sold without packaging, on either the spill-proof spout or a label affixed thereto:

(1) The phrase "Spill-Proof Spout."

(2) A date of manufacture or representative date.

(3) A representative code identifying the spout as subject to and complying with Section 130.103(b).

(c) Each manufacturer subject to subsection (a) or (b) must clearly display a fuel flow rate on each spill-proof system or spill-proof spout, or label affixed thereto, and on an accompanying package.

(d) Each manufacturer of a spout subject to subsection (b) must clearly display the make, model number, and size of only those portable fuel container(s) the spout is designed to accommodate and can demonstrate compliance with Section 130.103(a) on

the accompanying package, or for spill-proof spouts sold without packaging, on either the spill-proof spout, or a label affixed thereto.

(e) Each manufacturer of a portable fuel container or spout or both portable fuel container and spout subject to and complying with Section 130.103 that, due to its design or other features cannot be used to refuel one or more on-road motor vehicles, must clearly display the phrase "Not Intended For Refueling On-Road Motor Vehicles" in type of 34 point or greater.

§ 130.107. Variances.

(a) A person or manufacturer who cannot comply with the requirements set forth in Section 130.103 (relating to performance standards for portable fuel containers and spill-proof spouts), due to extraordinary reasons beyond the person's reasonable control, may apply in writing to the Department for a variance. The variance application must include the following:

(1) The specific grounds upon which the variance is sought.

(2) The proposed date(s) by which compliance with the provisions of Section 130.103 will be achieved.

(3) A compliance report detailing the method(s) by which compliance will be achieved.

(b) A variance shall cease to be effective upon failure of the party to whom the variance was granted to comply with a term or condition of the variance.

(c) Upon the application of a person, the Department may review and modify or revoke a variance from requirements of Section 130.103.

§ 130.108. Test Procedures.

(a) Testing to determine compliance with Section 130.103(b) (relating to performance standards for portable fuel containers and spill-proof spouts) of this article shall be performed by using the following test procedures:

(1) "Test Method 510, Automatic Shut-Off Test Procedure For Spill-Proof Systems and Spill-Proof Spouts," adopted by CARB on July 6, 2000, which is incorporated herein by reference.

(2) "Test Method 511, Automatic Closure Test Procedure For Spill-Proof Systems And Spill-Proof Spouts,"adopted by CARB on July 6, 2000, which is incorporated herein by reference.

(3) "Test Method 512, Determination Of Fuel Flow Rate For Spill-Proof Systems

and Spill-Proof Spouts," adopted by CARB on July 6, 2000, which is incorporated herein by reference.

(b) Testing to determine compliance with Section 130.103(a) shall be performed by using all test procedures in subsection (a) and "Test Method 513, Determination Of Permeation Rate For Spill-Proof Systems," adopted by CARB on July 6, 2000, which is incorporated herein by reference.

California Environmental Protection Agency

Air Resources Board

Spill-Proof System and Spill-Proof Spout Test Procedure

Test Method 510

AUTOMATIC SHUT-OFF TEST PROCEDURE FOR
SPILL-PROOF SYSTEMS AND SPILL-PROOF SPOUTS

Adopted: July 6, 2000
(section numbers corrected September 13, 2000)

Table of Content

NOTE: Language to be added is underlined, and language to be removed is shown in ~~strikeout~~.

Test Method 510
Automatic Shut-Off Test Procedure For Spill-Proof Systems and Spill-Proof Spouts

1. APPLICABILITY

For the purpose of this procedure, the term "ARB" refers to the State of California Air Resources Board, and the term "ARB Executive Officer" refers to the Executive Officer of the ARB or his or her authorized representative or designate. Terms used in this test method are defined in Section ~~2471~~ 2467.1, Article 6, Chapter 9, Title 13 of the California Code of Regulations.

This procedure is used to verify the operation of the automatic shut-off feature of spill-proof systems or portable fuel containers and spill-proof spouts. It is applicable in all cases where a spill-proof system or a spill-proof spout is sold, supplied, offered for sale, or manufactured for use in the State of California

2 PRINCIPAL AND SUMMARY OF TEST PROCEDURE

Using water in place of gasoline, the portable fuel container is filled to its nominal capacity and inverted for a period of time to test for leaks. Water is then dispensed through the spill-proof spout into a test fixture. The test fixture is filled to a specified level to verify the performance of the automatic shut-off feature.

3 BIASES AND INTERFERENCES

The spill-proof system must be free of leaks for the correct operation of the automatic shut-off feature.

4 SENSITIVITY, RANGE, AND PRECISION

This section is reserved for future specification.

5 EQUIPMENT

5.1 0.5 gallon test fixture (see Figure 1)

5.2 Twelve inch ruler accurate to within 1/8 inch.

6 CALIBRATION PROCEDURE

This section is reserved for future specification.

7 TEST PROCEDURE

(1) Fill the portable fuel container of the spill-proof system to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. For spill-proof spouts that are not part of a spill-proof system, select the largest portable fuel container specified for use by the spill-proof spout manufacturer for the test procedure. Fill the selected portable fuel container to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. This assembly is now considered a spill-proof system.

(2) Invert the spill-proof system with the spout in a vertical axis position for a period of five minutes to ensure that there are no leaks. If the spill-proof system is observed leaking, place in the upright position and ensure that the spill-proof spout is correctly and firmly attached. Invert the container again for a period of five minutes. If any leakage of water is observed the spill-proof system is not in compliance with the automatic closure requirements of Section ~~2472~~ 2467.2, (a), (2), Article 6, Chapter 9, Title 13 of the California Code of Regulations.

(3) Prepare the spill-proof system for dispensing per manufacturers recommendations. Following the manufacturers recommendations carefully insert the spill-proof spout into the opening on top of the test fixture (see Figure 1) and begin dispensing water into the test fixture.

(4) Continue dispensing water until the flow stops or until the test fixture overflows. Remove the spill-proof spout from the test fixture and record the outcome on the field data sheet (see figure 2).

(5) For spill-proof systems with a fuel flow rate of less than two gallons per minute use a ruler to measure the distance between the water height in the test fixture and the top of the test fixture opening. Record this measurement on the field data sheet.

(6) Repeat steps (3) through (5) three times for each spill-proof system tested. If the spill-proof system is refilled during this test, the leak test procedure specified in step (2) must be completed before continuing with steps (3) through (5).

8 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

This section is reserved for future specification.

9 RECORDING DATA

Record data on a form similar to the one shown in Figure 2.

10 CALCULATING RESULTS

This section is reserved for future specification.

11 REPORTING RESULTS

Compliance with the automatic shut-off requirements of Section ~~2472~~ 2467.2, Article 6, Chapter 9, Title 13 of the California Code of Regulations is achieved if:

(a) the spill-proof system stops the fuel flow before the test fixture overflows on all three trials.

Compliance with the fill level requirements of Section ~~2472~~ 2467.2, Article 6, Chapter 9, Title 13 of the California Code of Regulations is achieved if:

(a) the spill-proof system fills the test fixture to a level less than or equal to 1 inch below the top of the opening on all three trials for spill-proof systems with fuel flow rates less than one gallon per minute.

(b) the spill-proof system fills the test fixture to a level less than or equal to 1.25 inches below the top of the opening on all three trials for spill-proof systems with fuel flow rates less than two gallons per minute but not less than one gallon per minute.

12 ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is obtained from the ARB Executive Officer. In order to secure the ARB Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating to the ARB Executive Officer's satisfaction that the alternative test procedure is equivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only.

(2) Documentation of any such approvals, demonstrations, and approvals shall be maintained by the ARB Executive Officer and shall be made available upon request.

13 REFERENCES

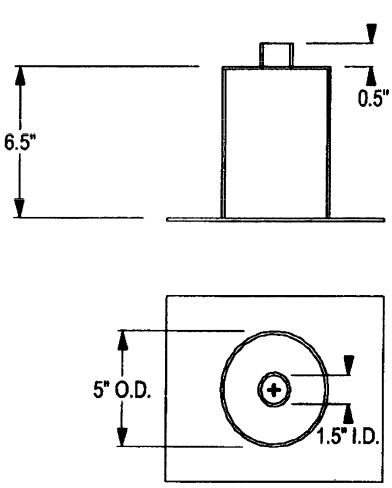
This section is reserved for future specification.

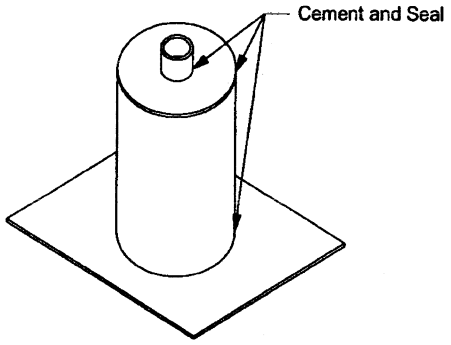
14 FIGURES

Figure 1. Test Fixture

Figure 2. Field Data Sheet

Figure 1. Test Fixture





PART NO.	QTY	DESCRIPTION
5	1	Silicon Sealant
4	1	Clear, Thickened Cement for Acrylic Sheet
3	2	8"x10"x 1/8" thick clear plexiglass
2	1	1 1/2" I.D x 1/8" thickness x 5/8" clear plastic tubing
1	1	5" O.D. x 1/8" thickness x 6.5" clear plastic tubing

Figure 2. Field Data Sheet

Spill-Proof System Manufacturer:_____

OR

Spill-Proof Spout Manufacturer: _____ **AND**

Portable Fuel Container Manufacturer: _____

Container Volume: _____

Tested By:_____ Date:_____ Time:_____

TEST NUMBER	AUTO SHUT-OFF (yes/no)	FILL HEIGHT (inches)	COMMENTS

California Environmental Protection Agency

Air Resources Board

Spill-Proof System and Spill-Proof Spout Test Procedure

Test Method 511

AUTOMATIC CLOSURE TEST PROCEDURE FOR SPILL-PROOF SYSTEMS AND SPILL-PROOF SPOUTS

Adopted: July 6, 2000
(section numbers corrected September 13, 2000)

TABLE OF CONTENT

NOTE: Language to be added is underlined, and language to be removed is shown in ~~strikeout~~.

Test Method 511
Automatic Closure Test Procedure For Spill-Proof Systems and Spill-Proof Spouts

1 APPLICABILITY

For the purpose of this procedure, the term "ARB" refers to the State of California Air Resources Board, and the term "ARB Executive Officer" refers to the Executive Officer of the ARB or his or her authorized representative or designate. Terms used in this test method are defined in Section ~~2471~~2467.1, Article 6, Chapter 9, Title 13 of the California Code of Regulations.

This procedure is used to verify the performance of the automatic closure feature of spill-proof systems or portable fuel containers and spill-proof spouts. It is applicable in all cases where a spill-proof system or a spill-proof spout is sold, supplied, offered for sale, or manufactured for use in the State of California.

2 PRINCIPAL AND SUMMARY OF TEST PROCEDURE

Using water in place of gasoline, the portable fuel container is filled to its nominal capacity and inverted for a period of time to test for leaks. Water is then dispensed through the spill-proof spout into a test fixture. The spill-proof spout is quickly removed when the test fixture is approximately 50 % full to verify the automatic closure feature is operational. Finally, the spill-proof system is pressurized to 10 pounds per square inch (psi) with compressed air and immersed in a water bath for ten minutes to test for leaks.

3 BIASES AND INTERFERENCES

This section is reserved for future specifications.

4 SENSITIVITY, RANGE, AND PRECISION

This section is reserved for future specifications.

5 EQUIPMENT

5.1 Stopwatch accurate to within 0.2 seconds.

5.2 0.5 gallon test fixture (see Figure 2).

5.3 Modified portable fuel container (see Figure 3).

5.4 Pressure gauge, 0-15 psig, 0.2 psi graduation, Grade 2A accuracy or better

5.5 Pressure gauge adapter assembly as shown in Figure 3

6 CALIBRATION PROCEDURE

This section is reserved for future specifications.

7 TEST PROCEDURE

(1) Fill the portable fuel container of the spill-proof system to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. For spill-proof spouts that are not part of a spill-proof system, select the largest portable fuel container specified for use by the spill-proof spout manufacturer for the test procedure. Fill the selected portable fuel container to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. This assembly is now considered a spill-proof system.

(2) Invert the spill-proof system with the spout in a vertical axis position for a period of five minutes to ensure that there are no leaks. Record the outcome on the field data sheet (see figure 1). If the spill-proof system is observed leaking, place the spill-proof system in the upright position and ensure that the spill-proof spout is correctly and firmly attached. Invert the container again for a period of five minutes. Record the outcome on the field data sheet.

(3) Prepare the spill-proof system for dispensing per manufacturers recommendations. Following the manufacturers recommendations carefully insert the spill-proof spout into the opening on top of the test fixture (see figure 2) and begin dispensing water into the test fixture. Stop dispensing water when the test fixture is approximately 50 % full. Gently tap the spill-proof spout against the opening of the test fixture to remove any water which may adhere to the exterior surface of the spout. Verify that the spill-proof spout remains closed and sealed by removing from the test fixture and observing the spill-proof spout for any water leakage while still in the inverted position for one minute. Record observations on the field data sheet. Drain the test fixture and repeat this process three times.

(4) Remove the spill-proof spout and modify the portable fuel container as detailed in figure 3. Fill the portable fuel container to its nominal capacity with water and attach the spill-proof spout per manufacturers recommendations. Using a sufficient ballast, place the modified spill-proof system upright in a water bath large enough to completely cover the portable fuel container and spout plus six inches. Using a compressed air source, pressurize the spill-proof system to 10 psi. Observe the spill-proof system for evidence of leakage for ten minutes. Leakage shall be detected by the evidence of bubbles from the portable fuel container or the spout. Record observations

on the field data sheet.

8 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

This section is reserved for future specification.

9 RECORDING DATA

Record data on a form similar to the one shown in Figure 1.

10 CALCULATING RESULTS

This section is reserved for future specifications.

11. REPORTING RESULTS

Compliance with the automatic closure requirements of Section ~~2472~~ 2467.2, Article 6, Chapter 9, Title 13 of the California Code of Regulations is achieved if:

(1) no water leaks when the spill-proof system is inverted for five minutes

and

(2) no water leaks on all three trials when the spill-proof system is removed from the test fixture and observed for one minute

and

(3) no leakage is observed while the modified spill-proof system is immersed in the water bath.

12 ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is obtained from the ARB Executive Officer. In order to secure the ARB Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating to the ARB Executive Officer's satisfaction that the alternative test procedure is equivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only.

(2) Documentation of any such approvals, demonstrations, and approvals shall be maintained by the ARB Executive Officer and shall be made available upon request.

13 REFERENCES

This section is reserved for future specification.

14 FIGURES

Figure 1. Field Data Sheet

Figure 2. 0.5 Gallon Test Fixture

Figure 3. Modified Portable Fuel Container

Figure 1. Field Data Sheet

Spill-Proof System Manufacturer: _____

OR

Spill-Proof Spout Manufacturer: _____ **AND**

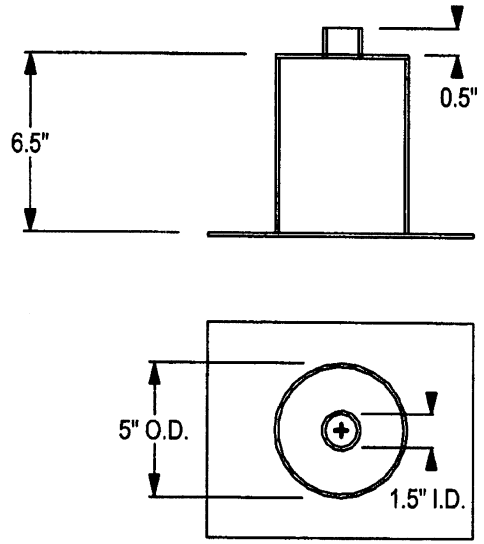
Portable Fuel Container Manufacturer: _____

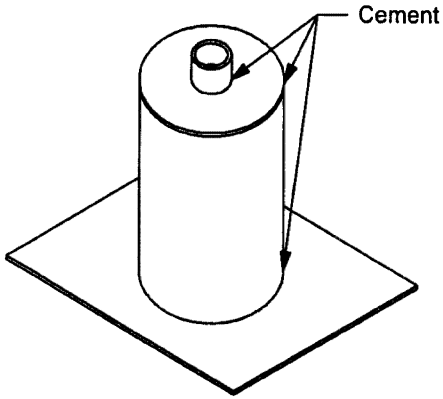
Container Volume:_____

Tested By: _____ Date: _____ Time: _____

INVERTED LEAK TEST RESULTS (pass/fail)	AUTOMATIC CLOSURE TEST RESULTS (pass/fail)			PRESSURE TEST		
	Trial 1	Trial 2	Trial 3	Start Time	Stop Time	Results (pass/fail)

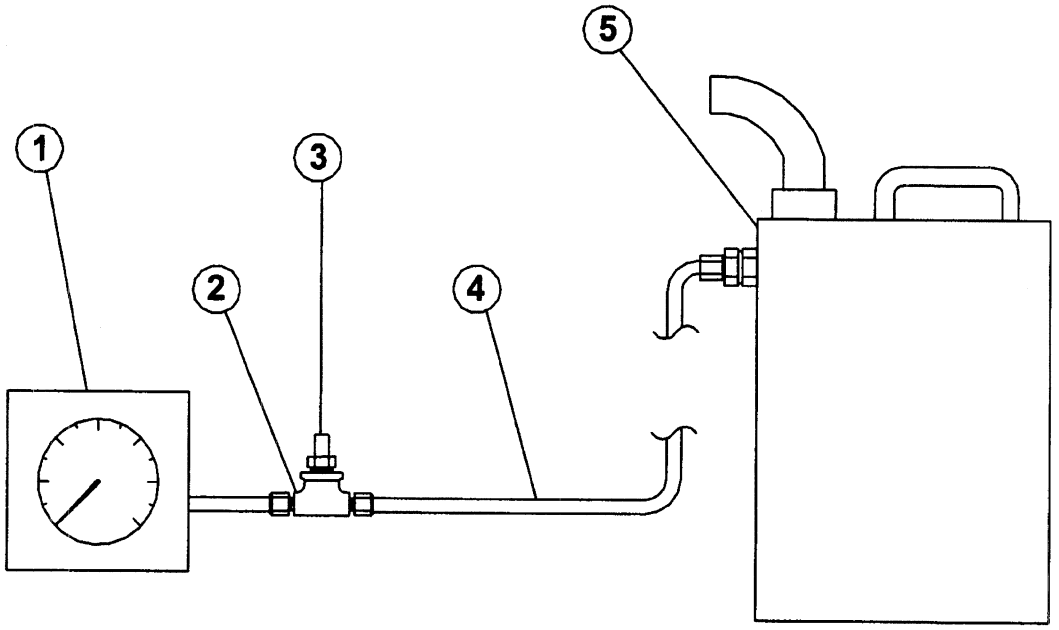
Figure 2. 0.5 Gallon Test Fixture





PART NO.	QTY	DESCRIPTION
5	1	Silicon Sealant
4	1	Clear, Thickened Cement for Acrylic Sheet
3	2	8"x10"x 1/8" thick clear plexiglass
2	1	1 1/2" I.D x 1/8" thickness x 5/8" clear plastic tubing
1	1	5" O.D. x 1/8" thickness x 6.5" clear plastic tubing

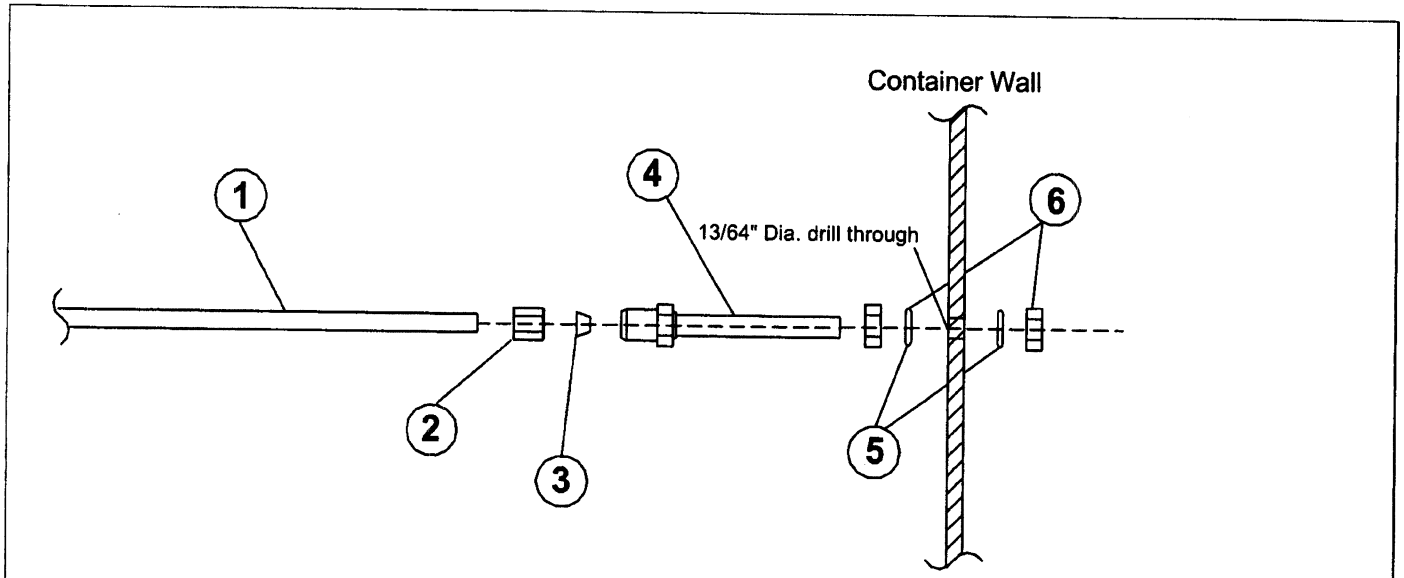
Figure 3. Modified Portable Fuel Container



Note: 1. Page 1 of 2

PART NO.	QTY	DESCRIPTION
5	1	Modified Portable Fuel Container
4	1	1/4" O.D. x 3/16" I.D. Teflon Tubing
3	1	1/8" Male NPT Tank Valve
2	1	1/8" NPT Female Branch Tee With 1/4" Tube Ports
1	1	Grade 2A 0-15psi Pressure Gauge

Figure 3. Modified Portable Fuel Container



Notes: 1. Install 1/8" NPT bulkhead fitting though container wall. Place one Jam nut on each side of container wall with o-rings located between jam nuts and container wall.

2. If necessary, use a suitable epoxy sealant at the bulkhead and container wall joint.

3. Page 2 of 2

PART NO.	QTY	DESCRIPTION
6	2	5/8" Hex Jam Nut
5	2	7/32" x 11/32" O-ring
4	1	1/8" NPT x 1/4" Tubing Bulkhead Fitting
3	1	1/4" Tube Fitting Ferrule
2	1	1/4" Tube Fitting Cap
1	1	1/4" O.D. x 3/16" I.D. Teflon Tubing

California Environmental Protection Agency

Air Resources Board

Spill-Proof System and Spill-Proof Spout Test Procedure

Test Method 512

DETERMINATION OF FUEL FLOW RATE FOR SPILL-PROOF SYSTEMS AND SPILL-PROOF SPOUTS

Adopted: July 6, 2000
(section numbers corrected September 13, 2000)

TABLE OF CONTENTS

NOTE: Language to be added is underlined, and language to be removed is shown in ~~strikeout~~.

Test Method 512
Determination of Fuel Flow Rate for
Spill-Proof Systems and Spill-Proof Spouts

1 APPLICABILITY

For the purpose of this procedure, the term "ARB" refers to the State of California Air Resources Board, and the term "ARB Executive Officer" refers to the Executive Officer of the ARB or his or her authorized representative or designate. Terms used in this test method are defined in Section ~~2471~~ 2467.1, Article 6, Chapter 9, Title 13 of the California Code of Regulations.

This procedure is used to quantify the fuel flow rate of spill-proof systems or portable fuel containers and spill-proof spouts. It is applicable in all cases where a spill-proof system or a spill-proof spout is sold, supplied, offered for sale, or manufactured for use in the State of California.

2 PRINCIPAL AND SUMMARY OF TEST PROCEDURE

Using water in place of gasoline, the portable fuel container is filled to its nominal capacity and inverted for a period of time to test for leaks. Water is then dispensed through the spill-proof spout while the event is timed. The spill-proof system is pre and post weighed to determine the amount of water dispensed and an average flow rate is calculated in gallons per minute.

3 BIASES AND INTERFERENCES

The balance used to determine the amount of water dispensed must be of sufficient capacity to accurately weigh large volume spill-proof systems filled to their nominal capacity with water.

Allowing spill-proof systems to empty during the test procedure can cause errors in the final measurement of the flow rate.

Any leaks from either the spill-proof spout or the portable fuel container can cause errors in the final measurement of the weight of water dispensed.

4 SENSITIVITY, RANGE, AND PRECISION

Range of measurement of water dispensed is approximately 2000 to 26,000 grams; upper range depends upon the volume of the spill-proof system.

5 EQUIPMENT

5.1 A Stopwatch accurate to within 0.2 seconds.

5.2 A high capacity top loading balance capable of a maximum weight measurement of not less than 2,000 grams greater than weight of the largest water filled spill-proof system tested with a minimum readability of 1 gram and a reproducibility of ± 0.2 grams.

6 CALIBRATION PROCEDURE

The high capacity top loading balance shall be calibrated prior to use per the manufacturers specifications.

7 TEST PROCEDURE

(1) Fill the container of the spill-proof system to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. For spill-proof spouts that are not part of a spill-proof system, select the largest portable fuel container specified for use by the spill-proof spout manufacturer for the test procedure. Fill the selected portable fuel container to its nominal capacity with water and attach the spill-proof spout per manufacturer recommendations. This assembly is now considered a spill-proof system.

(2) Invert the spill-proof system with the spout in a vertical axis position for a period of five minutes to ensure that there are no leaks. If the spill-proof system is observed leaking, place in the upright position and ensure that the spill-proof spout is correctly and firmly attached. Invert the container again for a period of five minutes. If any leakage of water is observed the spill-proof system is not in compliance with the automatic closure requirements of Section ~~2472~~ 2467.2, (a), (2), Article 6, Chapter 9, Title 13 of the California Code of Regulations.

(3) Carefully place the filled spill-proof system on the high capacity balance. Record the pre test weight *(PRE)* on the field data sheet.

(4) Invert the spill-proof system to a vertical spout axis position over a suitable receptacle. Manually open the spill-proof spout while simultaneously starting the stopwatch. Continue to hold the spill-proof system in the inverted position with the spill-proof spout manually opened. Close the spill-proof spout and simultaneously stop the stopwatch before the container is completely empty leaving approximately one pint of fluid in the container. Record the elapsed time *(t)* on the field data sheet

(5) Carefully place the spill-proof system on the high capacity balance. Record the post test weight *(POST)* on the field data sheet.

(6) Repeat this process three times for each spill-proof system tested.

8 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

This section is reserved for future specification.

9 RECORDING DATA

Record data on a form similar to the one shown in Figure 1.

10 CALCULATING RESULTS

The *flow rate* in gallons/minute for each individual test is calculated as follows:

$$FlowRate = \frac{(PRE - POST) * 60}{d * t}$$

Where:

FlowRate	=	The flow rate in gallons/minute
PRE	=	The weight of the filled container in grams
POST	=	The weight of the empty container in grams
d	=	3774 grams/gallon, the density of water at 25 °C
t	=	The elapsed time in seconds

11 REPORTING RESULTS

After calculating the flow rate for each individual test an average of the three tests is calculated to determine the final flow rate in gallons per minute.

12 ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is obtained from the ARB Executive Officer. In order to secure the ARB Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating to the ARB Executive Officer's satisfaction that the alternative test procedure is equivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only.

(2) Documentation of any such approvals, demonstrations, and approvals shall be maintained by the ARB Executive Officer and shall be made available upon request.

13 REFERENCES

This section is reserved for future specification.

14 FIGURES

Figure 1. Field Data Sheet

Figure 1
Field Data Sheet

Spill-Proof System Manufacturer: _____

OR

Spill-Proof Spout Manufacturer: _____ **AND**

Portable Fuel Container Manufacturer: _____

Container Volume: _____

Tested By: _____ Date: _____ Time: _____

TEST	PRE – WEIGHT	POST – WEIGHT	ELAPSED TIME

California Environmental Protection Agency

Air Resources Board

Proposed

Spill-Proof System Test Procedure

Test Method 513

DETERMINATION OF PERMEATION RATE FOR SPILL-PROOF SYSTEMS

Adopted: July 6, 2000
(section numbers corrected September 13, 2000)

TABLE OF CONTENT

NOTE: Language to be added is underlined, and language to be removed is shown in ~~strikeout~~.

Test Method 513
Determination of Permeation Rates For Spill-Proof Systems

1 APPLICABILITY

For the purpose of this procedure, the term "ARB" refers to the State of California Air Resources Board, and the term "ARB Executive Officer" refers to the Executive Officer of the ARB or his or her authorized representative or designate. Terms used in this test method are defined in Section ~~2471~~ 2467.1, Article 6, Chapter 9, Title 13 of the California Code of Regulations.

This procedure is used to determine the permeation rate of spill-proof systems with non-metallic portable fuel containers. It is applicable in all cases where a non-metallic spill-proof system is sold, supplied, offered for sale, or manufactured for use in the State of California.

This test procedure involves the use of flammable materials and operations and should only be used by or under the supervision of those familiar and experienced in the use of such materials and operations. Appropriate safety precautions should be observed at all times while performing this test procedure.

2 PRINCIPAL AND SUMMARY OF TEST PROCEDURE

Portable fuel containers are subjected to 1000 pressure/vacuum cycles and then filled with gasoline and allowed to precondition at ambient temperature and pressure for a minimum of four weeks. The portable fuel containers are then emptied, blown dry and immediately refilled with Phase II California Reformulated Certification (CERT) Fuel. A High Density Polyethylene (HDPE) coupon is then fusion welded over the container opening, the containers are weighed and subjected to a 24-hour variable temperature profile. The containers are then re-weighed and the weight loss in grams is calculated.

3 BIASES AND INTERFERENCES

Portable fuel containers incorrectly sealed will emit evaporative emissions, which can effect the final weight loss calculations.

To accurately quantify the losses attributed to permeation during the test procedure the portable fuel containers must be exposed to the variable temperature for 24-hours ± 30 minutes.

The balance used to determine the weight lost between 24-hour variable temperature profiles must be of sufficient capacity to accurately weigh large volume portable fuel containers filled to their nominal capacity with CERT fuel.

4 SENSITIVITY, RANGE, AND PRECISION

Range of measurement of filled portable fuel containers is approximately 1,750 grams to 26,000 grams; upper range depends on the volume of the portable fuel container.

5 EQUIPMENT

5.1 A hand held Teflon coated aluminum hot plate thermostatically controlled to approximately 425 °F (hand held fusion welder) and 1/4" thick HDPE coupons. Both the hand held fusion welder and HDPE coupons must be of sufficient diameter to completely cover the opening of the portable fuel container.

5.2 A high capacity top loading balance capable of a maximum weight measurement of not less than 2,000 grams greater than the weight of the largest fuel filled portable fuel container tested with a minimum readability of 1 gram and a reproducibility of ± 0.2 grams.

5.3 Sealed Housing For Evaporative Determination (SHED). Either a fixed or variable volume enclosure as specified in 40 CFR, Chapter 1, Part 86, Section 1207-96 with a temperature conditioning system capable of controlling the internal enclosure air temperature with an instantaneous tolerance of ± 3.0 °F of the nominal temperature versus time profile throughout the test, and an average tolerance of ± 2.0 °F over the duration of the test.

6 CALIBRATION PROCEDURE

The high capacity top loading balance shall be calibrated prior to use per the manufacturer specifications.

7 DURABILITY PROCEDURE

Pressurize the empty portable fuel container to 5 pounds per square inch gauge (psig) using room air heated to 120 °F and then evacuate to 2 inches mercury ("hg). Repeat the pressure/vacuum process until the portable fuel container has been subjected to not less than 1000 cycles in approximately 8 hours.

8 PRECONDITIONING PROCEDURE

Fill the portable fuel container of the spill-proof system to its nominal capacity with gasoline and firmly attach either the spill-proof spout or an appropriate plug or cap. Place the portable fuel container in a suitable vented enclosure. Record the preconditioning start date on the field data sheet (see figure 2). The portable fuel container shall remain undisturbed

for a period of not less than four weeks.

9 SEALING PROCEDURE

(1) After preconditioning, remove the portable fuel container from the enclosure to a well-ventilated area. Record the preconditioning end date on the field data sheet. Remove the cap, plug, or spill-proof spout and empty the portable fuel container. The portable fuel container must not remain empty for more than fifteen minutes. Quickly dry the interior of the portable fuel container with compressed air. Immediately refill the portable fuel container to its nominal capacity with CERT fuel. Fusion weld the HDPE coupon over the portable fuel container opening taking care to completely seal the container opening.

Heat the sealed portable fuel container until positive pressure (container swelling) is observed. This could be accomplished in several ways. One method is to place the portable fuel container in a well-ventilated area exposed to direct sunlight for two to four hours. If positive pressure (container swelling) is not observed after heating, the closure or portable fuel container is leaking. Carefully check the fusion weld and use good engineering practices to correct the problem. Once positive pressure is observed test the integrity of the closure and sealant by completely immersing the portable fuel container in a water bath for a period of two minutes. Select a water bath large enough to completely cover the portable fuel container plus six inches. Place the portable fuel container upright in the water bath making sure to position it so that no fuel is in contact with the closure. To accomplish this it may be necessary to tilt the portable fuel container back slightly so that the closure is the highest point while holding it under water. Observe the portable fuel container and the closure for any leaks. Leak points will be visible as a bubble or stream of bubbles while immersed in the water bath. Identify and mark any leak points. If leaks are observed remove and dry the portable fuel container and repair all leaks. Continue this process until no leaks are observed.

10 TEST PROCEDURE

(1) Make sure that the exterior surface of the sealed portable fuel container is clean, dry, and free of dirt and debris. Carefully place the sealed portable fuel container on the high capacity balance. Record the initial weight (*Wi*), date, and start time on the field data sheet.

(2) Immediately place the sealed portable fuel container in the SHED. Begin the 24-hour variable temperature profile (see figure 1). If more than one hour elapses between the time the sealed portable fuel container was weighed and the initiation of the variable temperature profile, the sealed portable fuel container must be re-weighed before initiating the 24-hour variable temperature profile.

(3) At the conclusion of the 24-hour variable temperature profile immediately remove the sealed portable fuel container from the SHED and ensure that the exterior surface is clean, dry, and free of dirt and debris. Carefully place the sealed portable fuel container on the high capacity balance. Record the final weight (*Wf*), date, and end time on the field data sheet. If more than one hour elapses between the conclusion of the 24-hour variable temperature profile and the final weighing of the sealed portable fuel container, the final weight is invalid and should not be used in future calculations. If this occurs, the test procedure must be reinitiated. Calculate the difference between the initial weight (*Wi*) and the final weight (*Wf*). This is the weight loss (*Wl*) due to permeation. Record the weight loss (*Wl*) on the field data sheet.

(4) Repeat this process until the weight loss (*Wl*) from five consecutive 24-hour cycles displays a standard deviation of 0.25 grams.

(5) When sufficient weight loss data have been collected, move the sealed portable fuel container to a well-ventilated area. Place the sealed portable fuel container on a clean surface such as a large sheet of paper or cardboard. Carefully remove the threaded plug or cap allowing the loose sealant to fall on the paper. Drain the contents of the portable fuel container into an appropriate receptacle through a finely screened funnel. Dry the interior of the portable fuel container with compressed air. Check the screened funnel for any sealant that may have fallen into the portable fuel container during remove of the cap or plug. Place any particles of sealant found in the screened funnel on the paper or cardboard and allow them to air dry. Collect the particles of sealant from the paper or cardboard, the cap or plug, and the portable fuel container and place them on the high capacity balance. Record this weight on the field data sheet as the tare weight (*Wt*).

11 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

This section is reserved for future specification.

12 RECORDING DATA

Record data on a form similar to the one shown in Figure 2.

13 CALCULATING RESULTS

The weight loss in grams is calculated for each 24-hour cycle as follows:

$$Wl = Wi - Wf$$

Where:

Wl = The weight loss in grams

Wi = The initial weight of the portable fuel container in grams
Wf = The final weight of the portable fuel container in grams

The standard deviation of five consecutive diurnal cycles is calculated as follows:

$$SDV = \sqrt{\frac{\sum_{i=1}^{n} \left(xi - \overline{x}\right)^2}{n-1}}$$

Where:

SDV	=	Standard Deviation
n	=	number of samples
Xi	=	ith weight loss in grams
$\bar{x}$	=	mean of weight losses in grams

The permeation rate in grams per gallon per day for each 24-hour cycle is calculated as follows:

$$P = \frac{Wl}{\left(\frac{Wi - Wt}{d}\right)}$$

Where:

P	=	The permeation rate in grams/gallon/day
Wl	=	The weight loss in grams
Wi	=	The initial weight of the portable fuel container in grams
Wt	=	The tare weight of the portable fuel container in grams
d	=	The density of CERT fuel in grams/gallon

14 REPORTING RESULTS

After calculating the permeation rate for each 24-hour cycle, an average of the five consecutive rates selected is calculated to determine the final permeation rate in grams per gallon per day.

15 ALTERNATIVE TEST PROCEDURES

Test procedures, other than specified above, shall only be used if prior written approval is

obtained from the ARB Executive Officer. In order to secure the ARB Executive Officer's approval of an alternative test procedure, the applicant is responsible for demonstrating to the ARB Executive Officer's satisfaction that the alternative test procedure is equivalent to this test procedure.

(1) Such approval shall be granted on a case-by-case basis only.

(2) Documentation of any such approvals, demonstrations, and approvals shall be maintained by the ARB Executive Officer and shall be made available upon request.

16 REFERENCES

This section is reserved for future specification.

17 FIGURES

Figure 1. 24-Hour Variable Temperature Profile
Figure 2. Field Data Sheet

Figure 1
24-Hour Variable Temperature Profile

HOUR	MINUTE	ET / MIN	TEMP °F
0	0	1440	65.0
1	60	1380	66.6
2	120	1320	72.6
3	180	1260	80.3
4	240	1200	86.1
5	300	1140	90.6
6	360	1080	94.6
7	420	1020	98.1
8	480	960	101.2
9	540	900	103.4
10	600	840	104.9
11	660	780	105.0
12	720	720	104.2
13	780	660	101.1
14	840	600	95.3
15	900	540	88.8
16	960	480	84.4
17	1020	420	80.8
18	1080	360	77.8
19	1140	300	75.3
20	1200	240	72.0
21	1260	180	70.0
22	1320	120	68.2
23	1380	60	66.5
24	1440	0	65.0

Figure 2. Field Data Sheet

Spill-Proof System Manufacturer:_____

Container Volume:_____

Container I.D:_____

Tested By:_____

Water Bath Test (pass/fail):_____

Tare Weight (*Wt*) (grams):_____

DATE/TIME START		DATE/TIME END		INITIAL WEIGHT *Wi* (grams)	FINAL WEIGHT *Wf* (grams)	WEIGHT LOSS *Wl* (grams)

Pennsylvania Department of Environmental Protection

Rachel Carson State Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
October 26, 2001

The Secretary

Phone: 717-787-2814
E-Mail: DavidHess@state.pa.us

Mr. Robert E. Nyce, Executive Director
Independent Regulatory Review Commission
14th Floor, Harristown #2
333 Market Street
Harrisburg, PA 17120

RE: Proposed Rulemaking: Portable Fuel Containers (#7-369)

Dear Bob:

Enclosed is a copy of a proposed regulation for review and comment by the Commission pursuant to Section 5(a) of the Regulatory Review Act. This proposal is scheduled for publication as a proposed rulemaking in the *Pennsylvania Bulletin* on November 10, 2001, with a 67-day public comment period. Three public hearings have been scheduled as indicated on the enclosed public notice. This proposal was approved by the Environmental Quality Board (EQB) on September 18, 2001.

This proposal will control volatile organic compound (VOC) emissions from portable fuel containers by establishing permeability requirements designed to reduce the loss of gasoline through fuel container walls. The proposal also reduces gasoline loss due to spillage by adding "no-spill" fill spout requirements. Manufacturers of portable fuel containers and/or spouts will be responsible for developing and distributing compliant products for sale in Pennsylvania by January 1, 2003. The proposal does not affect portable fuel containers currently in use.

The proposal is based on the Ozone Transport Commission (OTC) model rule and the California Air Resources Board (CARB) regulations, and it is part of Pennsylvania's strategy to achieve and maintain the health-based ozone standard in the Commonwealth. There is no federal rule relating to portable fuel containers. A number of states in the Ozone Transport Region (OTR) have committed to adopting similar regulations to help establish a regional market to address what the Environmental Protection Agency (EPA) has identified as "shortfalls" in emission reductions needed to attain the one-hour National Ambient Quality Standard (NAAQS) for ozone.

The Air Quality Technical Advisory Committee (AQTAC) endorsed a draft of the proposal on May 24, 2001, and favors aggressive efforts in conjunction with other states for adoption of national requirements in this area.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this proposal. Section 5(g) of the Act provides that the Commission may, within ten days after the expiration of the Committee review period, notify the agency of any objections to the proposed regulation. The Department will consider any comments or suggestions received by the Commission, together with Committee and other public comments prior to final adoption.

For additional information, please contact Sharon Trostle, Regulatory Coordinator, at 787-4526.

Sincerely,

David E. Hess
Secretary

Enclosures

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

I.D. NUMBER:	7-369
SUBJECT:	Portable Fuel Containers
AGENCY:	DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

X Proposed Regulation

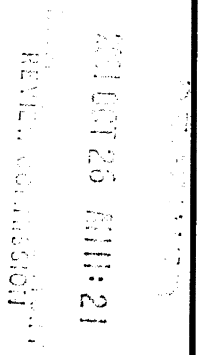
Final Regulation

Final Regulation with Notice of Proposed Rulemaking Omitted

120-day Emergency Certification of the Attorney General

120-day Emergency Certification of the Governor

Delivery of Tolled Regulation
a. With Revisions b. Without Revisions



FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
10/26	Cindy Bevan	HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10-26	Dorothy A Castelli	SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/26/01	Elena Pazan	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL
10/26/01	C. Lee Brown	LEGISLATIVE REFERENCE BUREAU

October 3, 2001