

paragraph (a) as paragraph (b), and adding paragraph (a) to read as follows:

§ 2091.3-1 Segregation.

(a) If a proposal is made to exchange public lands administered by the BLM or National System lands administered by the Forest Service, such lands may be segregated by a notation on the public land records for a period not to exceed 5 years from the date of notation (See § 2201.1-2).

* * * * *

14. Section 2091.3-2 is revised to read as follows:

§ 2091.3-2 Opening.

(a) If a proposal or an application described in § 2091.3-1 of this title is not

denied, modified, or otherwise terminated prior to the end of the segregative periods set out in § 2091.3-1 of this part, the segregative effect of the proposal or application automatically terminates either upon:

(1) Issuance of a patent or other document of conveyance to the affected lands; or

(2) The expiration of the applicable segregation period set out in § 2091.3-1 of this part commencing on the date of record notation or on the date the application is filed, whichever occurs first.

(b) If the proposal or application described in § 2091.3-1 of this part is denied, modified, or otherwise terminated prior to the end of the

segregation periods, the lands are opened by publication in the **Federal Register** of an opening order specifying the date and time of opening.

(c) Lands conveyed to the United States by exchange shall be segregated automatically for 90 days after acceptance of title by the United States, and the public land records shall be noted accordingly. The segregative effect will automatically terminate at the end of the 90-day period. (See § 2201.1-2)

Dated: September 16, 1991.

Richard Roldan,

Acting Assistant Secretary of the Interior.

[FR Doc. 91-22880 Filed 10-1-91; 8:45 am]

BILLING CODE 4310-84-M

Registered Federal Trade

Wednesday
October 2, 1991

Part III

Department of Transportation

Research and Special Programs
Administration

49 CFR Parts 171, 172, 173, and 174
Elevated Temperature Materials; Final
Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, and 174

[Docket No. HM-198A; Amdt. Nos. 171-13, 172-125, 173-227, and 174-69]

RIN 2137-AB31

Elevated Temperature Materials

AGENCY: Research and Special Programs Administration (RSPA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: RSPA is amending the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180) to regulate materials which pose a hazard due to their being offered for transportation or transported at elevated temperatures. Included are materials in a liquid phase having temperatures at or above 100 °C (212 °F) and materials in a solid phase having temperatures at or above 240 °C (464 °F). RSPA is also regulating, as flammable liquids, materials in a liquid phase with flash points at or above 37.8 °C (100 °F) which are intentionally heated and offered for transportation or transported in bulk quantities at or above their flash points. The intended effects of these regulatory changes are to communicate the hazards of these elevated temperature materials by means of marking, shipping papers and placarding, and to prescribe packaging requirements for these materials. The changes are necessary to alert the public and emergency response personnel to the risks posed by these materials and to specify minimum levels of packaging for them in order to minimize the possibility of their unintentional release.

DATES: These amendments are effective March 30, 1992. However, compliance with the regulations as amended herein is authorized as of October 30, 1991.

FOR FURTHER INFORMATION CONTACT: Beth Romo, Office of Hazardous Materials Standards, (202) 366-4488, or James K. O'Steen, Office of Hazardous Materials Technology, (202) 366-4545, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION:**I. Background**

In several previous rulemaking actions, RSPA has endeavored to develop appropriate definitions and regulatory controls for flammable solids, including materials offered for transportation or transported at elevated temperatures. In an Advance

Notice of Proposed Rulemaking (ANPRM) published under Docket HM-178 on May 7, 1981 (46 FR 25492), RSPA requested comments on making the definition of a flammable solid more specific and proposed methods for testing which would enable shippers to determine if their products were flammable solids for purposes of transportation. The ANPRM addressed solids or molten materials shipped at temperatures exceeding 315 °C (600 °F) because of the potential of these materials to ignite combustible materials. The ANPRM also solicited comments on types of packaging controls for these materials.

In a subsequent rulemaking action, RSPA incorporated criteria for distinguishing between "liquid" and "solid" materials. A final rule published April 20, 1987 (Docket HM-166U; 52 FR 13634), added definitions for "liquid" and "solid" to § 171.8 of the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180). The definitions are based on American Society for Testing and Materials (ASTM) D 4359-84 entitled, "Standard Test Method for Determining whether a Material is a Liquid or Solid."

On January 19, 1985, a tractor with two tank trailers filled with molten sulfur collided with the concrete median barrier on the southbound lanes of Interstate 680 on the Benecia-Martinez Bridge in Benecia, California. The molten sulfur ignited and sprayed onto other vehicles traveling in the northbound lanes. As a result of the fire and smoke from the burning sulfur, two persons died, 26 persons were taken to local hospitals, surrounding areas were evacuated, and the roadway was closed for 15 hours. Because molten sulfur was not subject to the HMR, the hazards of the material were not communicated to emergency responders, thereby hampering emergency response efforts. As a result of its investigation into this accident, the National Transportation Safety Board (NTSB) on August 12, 1985 issued Safety Recommendation I-85-19, which recommended that RSPA (1) regulate molten materials, as appropriate, as hazardous materials; (2) prescribe packaging and handling standards; and (3) incorporate information relating to the hazards of these materials into warning devices and publications available to emergency responders and others involved in the transportation of molten materials. The NTSB expressed concern that unregulated molten materials in the transportation system pose a substantial risk to persons and property, and could cause major disruptions to communities.

In a subsequent comment, the NTSB referenced an October 21, 1986, accident

that occurred near Berrien Springs, Michigan, which involved a load of molten aluminum and resulted in two fatalities. The driver of a tractor trailer hauling a crucible of molten aluminum failed to negotiate a right-hand curve. The vehicle crossed the center line and overturned in the oncoming lanes. The tractor collided with an automobile and pushed it off the road and into a gully. Despite the overturn, the molten aluminum crucible remained chained to the trailer, and the lid of the vat remained bolted in place. However, one of the hinges on the top lid broke upon impact, allowing the molten aluminum to leak into the gully. The molten aluminum flowed underneath the automobile, igniting gasoline in the fuel tank. Subsequent autopsies indicated that the two passengers died of smoke inhalation before extensive tissue damage caused by the hot metal and before injuries due to the accident or explosion could cause death. As a result of this accident, the NTSB recommended that DOT consider the hazards posed by molten materials in the various transportation modes.

There appeared to be a need for hazard communication requirements for elevated temperature materials to alert emergency response personnel and the general public to the potential hazards posed by the release of these materials. There also appeared to be a need to impose minimal packaging standards on packagings used in the transportation of elevated temperature materials.

On November 21, 1986, therefore, RSPA published an NPRM in the *Federal Register* (Docket HM-198; Notice No. 86-6; 51 FR 42114), proposing to regulate molten sulfur as a hazardous material and soliciting information concerning other molten materials. A final rulemaking on molten sulfur was published on May 13, 1988 (51 FR 42114), and included the announcement that RSPA would address other molten materials in a future rulemaking action.

Historical Summary of Docket HM-198A

The current HMR do not adequately address elevated temperature materials. Most elevated temperature materials are not currently regulated. Therefore, RSPA has limited information concerning numbers of incidents and accidents involving these materials.

On September 21, 1989, RSPA published notice of proposed rulemaking (54 FR 38930) under Docket HM-198A, concerning elevated temperature materials. The notice proposed to regulate all materials offered for transportation which pose a thermal

hazard: i.e. liquids and solids hot enough to damage human tissue; liquids and solids which would ignite combustible materials; and liquids transported at or above their flash points that are not currently regulated as flammable liquids. RSPA proposed to regulate, in the ORM-C hazard class (see § 173.500), all liquids offered for transportation or transported at temperatures above 212 °F (100 °C), as well as solid materials offered for transportation or transported at temperatures greater than 464 °F (240 °C). RSPA proposed to require that liquid elevated temperature materials and solid materials capable of igniting combustible materials be subject to specific packaging standards, because packaging quality is the only way to prevent a spill or release if an accident occurs. RSPA further proposed that liquids offered for transportation at or above their flash points be classified and packaged as flammable liquids since there is a greater tendency for those materials to burn in the presence of an ignition source.

This notice was consistent with the regulation of molten sulfur. By requiring specific packaging for liquids offered for transportation or transported at temperatures greater than 212 °F (100 °C), the greater hazard of liquid materials was recognized and controlled. The notice addressed the flow characteristics of liquids, the ignitability characteristics of the hotter solid materials, and the regulation of liquid materials transported at or above their flash points.

The NPRM proposed to regulate a number of materials not currently addressed by the HMR, particularly those materials offered for transportation or transported at temperatures at or above their flash points. In addition to compliance with the proposed packaging requirements, shippers of newly-regulated materials would be required to prepare shipping papers, mark packages, and, for materials transported at or above their flash points, affix placards. Shippers of currently-regulated materials meeting the definition of an elevated temperature material or a flammable liquid would be required to indicate the thermal hazard of the material through additional shipping paper and marking requirements. Other requirements proposed for shippers and carriers of previously unregulated materials would include incident reporting (for carriers) and, for flammable liquids, unloading/loading and attendance requirements, coupler vertical restraint systems on tank cars, and train placement of placarded rail cars.

Discussion of Comments

RSPA received over 50 written comments to Docket HM-198A. The City and County of Denver and the Ohio Public Utilities Commission (PUC) expressed complete support for the proposals. The Ohio PUC believed the proposal would provide needed hazard communication and packaging specifications. Denver stated that the new requirements would ensure elevated temperature materials and materials transported at or above their flash points are adequately described and packaged. Denver did not anticipate any need for significant investments for training or equipment.

The majority of comments were provided by trade associations or individual companies involved in the transport of asphalt, molten sulfur, or molten aluminum. Other types of materials identified by commenters as meeting the proposed definitions for elevated temperature materials or flammable liquids included dimethyl terephthalate, phthalic anhydride, steel slabs and coils, molten iron and steel, hot cinders, amorphous polypropylenes, ortho-toluenediamine and meta-toluenediamine.

Proposed hazard communication requirements. Several commenters believed that annotating the word "hot" on shipping papers and packages would be confusing because some shippers use the word "hot" to indicate a shipment that needs to be expedited. Some commenters stated that the imposition of emergency response communication standards would be an unnecessary burden on transporters of a material whose only hazardous characteristic is its temperature. Other commenters, such as the International Association of Fire Chiefs, stated that elevated temperature materials must be placarded and a bill of lading available to prevent death and disabling injuries to firefighters and first responders. The National Tank Truck Carriers (NTTC) supported efforts to better inform emergency response personnel, and believed the proposed addition of the word "HOT" to shipping papers for affected products is appropriate.

Materials offered for transportation or transported at or above their flash points. The NPRM proposed that materials offered for transportation or transported at or above their flash points (flash point materials) be classified (or reclassified) as flammable liquids, and that all HMR requirements for flammable liquids apply to them.

RSPA received nine comments that offered in-depth discussion of this issue; four additional commenters also

addressed the other categories of materials proposed for regulation under Docket HM-198A. Commenters listed products that would fall into the category of materials offered for transportation or transported at or above their flash points to include asphalts, oils, beverage concentrates, dimethyl terephthalate (DMT), and phthalic anhydride (PA). Packaging identified by commenters as being used to transport materials at or above their flash points were split about evenly between bulk and non-bulk packagings. DMT is transported in dedicated AAR tank cars, specially designed insulated stainless steel non-specification tanks, or in DOT specification containers. A commenter believed the tank cars would require substantial modification to meet the proposed packaging requirements. Safety vents would need to be replaced with valves, and each would need to be equipped with double shelf-couplers. Commenters maintained that DMT and PA cargo tanks are non-specification tanks similar to MC-307 cargo tanks, but they do not comply with MC-307 venting or outlet valve requirements. There are no known vents or outlet valves which would provide satisfactory service for DMT or PA. These tanks may not comply with accident damage protection or circumferential reinforcement requirements. The Truck Trailer Manufacturers Association (TTMA) stated that requiring DMT and PA to be transported in specification packagings would render a large fleet obsolete and unusable. TTMA asserted that the fleet is in dedicated service for which there is little other use. TTMA further stated that replacement of the DMT and PA fleet would create an enormous financial burden on owners, many of whom are small, independent business operators.

As proposed in the NPRM, RSPA believes that hazard communication and classification requirements for Class 3 (flammable liquid) materials should apply to materials offered for transportation or transported at or above their flash points. However, after further review, RSPA agrees that requiring packaging suitable for flammable liquids may be too stringent for these materials. RSPA believes that a balance is needed between the specification packaging requirements for Class 3 materials and the non-specification requirements authorized for a material offered for transportation or transported above its flash point are similar to those for Class 3 materials, except provisions have been made to account for the unique solidification

properties of these materials and their lower level of hazard.

Another major concern, identified by nine commenters, is the difficulty they foresee in shipping a material having a flash point between 100°–130 °F under conditions which might cause the temperature of the material to rise to a point that the material would become subject to regulation as a flammable liquid. Factors identified by the commenters that could impact the temperature of the material include: (1) Weather and seasonal conditions; (2) different geographical locations (e.g., transport through the desert); (3) shipping time; (4) driver's route; (5) any mechanical difficulties encountered; (6) ventilation in the trailer; (7) color of the trailer; and (8) traffic conditions. The hazard classification may change several times during transport and could be "contingent upon climatic conditions . . . over which shippers have no control" asserted 3M Corporation. The Conference on Safe Transportation of Hazardous Articles (COSTHA) maintained that the shipper would have "no way of predicting the temperature to which a material may be subjected within a vehicle, rail car or freight container in the course of transportation." The National Soft Drink Association predicted that this could create "considerable confusion" and a "significant potential for non-compliance." Two commenters indicated that computerized classification systems could not be utilized, thus "increasing the risk of human error." Several commenters indicated that a packed and labeled product might be placed in a tank car storage yard, cargo tank staging area, or in a warehouse for months before transport. These commenters maintained that the only way to know the actual temperature of a product is to open the package and place a thermometer in the product, which could raise environmental, health and product quality issues. Commenters also asked who would assume responsibility for monitoring product temperatures in transit. In summary, the commenters were of the opinion that, if this proposal were adopted in a final rule, compliance would be "practically unmanageable," "difficult, if not impossible," and violated "on a regular basis." RSPA agrees with the commenters that it would be very difficult to correctly classify a material which is environmentally heated to a temperature at or above its flash point. Data indicates that environmental heating of bulk packagings very rarely exceeds 105 °F for insulated packagings

and 115 °F for uninsulated packagings and the frequency of environmentally-heated shipments in this temperature range is small. It appears that the economic impact of regulating these occurrences may be significant, whereas the benefits are minimal. Therefore, in this final rule, RSPA is excepting from regulation as an elevated temperature material or flammable liquid all materials with flash points at or above 37.8 °C (100 °F) which are offered for transportation or transported at or above their flash points when they are in non-bulk packagings or in bulk packagings when the lading is not intentionally heated prior to or during transportation.

Asphalt. Commenters addressing proposals for regulating asphalt as a flammable liquid or an elevated temperature material included shippers, cargo tank manufacturers, carriers, asphalt pavement and roofing associations, and one state. Asphalt materials consist of various grades of asphalts and asphalt products. Grades include asphalt cement (AC), slow curing, cut back asphalt (SC), medium curing cut back asphalt (MC), and rapid curing cut back asphalt (RC). Many RC asphalts are classed as "flammable" under current regulations. MC and some SC asphalts would be subject to regulation because they are transported at or above their flash points or are transported above the threshold 212 °F. Bitumen (asphalt or coal tar) is used in roofing operations and is normally transported at 300°–500 °F. Bitumen would never be transported at or above its flash point. One commenter explained that materials are shipped at elevated temperatures so the materials can be unloaded without additional heating; reheating is potentially dangerous and could result in severe burns to employees from steam or products. Another commenter noted that most major oil companies do not maintain private fleets for asphalt service, but depend on the availability of contract or common carriers. Several commenters cited the generally good safety record for the transportation of asphalts, and noted that most incidents occurred during the loading and unloading process.

No non-bulk packagings were identified by the commenters. Commenters reported shipments of AC in insulated tank trucks and tank cars with electric or steam heater coils. RC asphalts, classed as flammable, are transported in MC-306 cargo tanks, with certain exceptions as allowed in current 49 CFR 173.131. MC and SC asphalts are being transported in non-specification

atmospheric pressure tanks having open vents, which are protected from product loss while the tank is upright by various baffling arrangements. The vents have no moving parts. Bitumen is transported in kettles ranging in size from 100–1,500 gallons and tankers which hold 2,000–5,000 gallons. The tankers house a heating system to maintain the temperature of the bitumen in transit. To make a kettle or tanker leak-tight would create the potential for an explosion. There are currently no existing venting systems or internal valves available that would comply with the proposed requirements without risking explosions. Commenters alleged that current cargo tanks used for RC asphalts do not meet proposed venting, manhole, or certification requirements, and stated that replacement of many asphalt tanks and all asphalt spray applicators would be required. The State of Texas requested clarification as to whether vehicles such as asphalt distributors would be affected. Commenters believed it would make far more sense to require proposed equipment modifications on newly manufactured vehicles, while allowing existing equipment to be utilized for its normal service life without retrofit. They stated that the proposed requirement for MC-306 venting or alternative venting would necessitate the development of technologies not presently available. Commenters further stated that conventional low pressure vents will not work because exposed vents in tops of tanks are not fully heated by the product; they stick shut and become plugged by the product. The commenters alleged that the only venting system possible would be a large pressure vent (6 inches set at 25–35 psi) constructed of seals of non-sticking material such as teflon. This concept would not meet requirements of HM-183, and the 1994 "Smart Vent" would be impossible. Several commenters noted that use of a pressure tank would introduce a new burn hazard to the operator because asphalt would boil and expand as the manhole is opened. One commenter asserted that if an MC-306/406 or MC-307/407 tank vent plugs due to heavy viscous liquids, the cargo tank could overpressurize, threatening the integrity of the tank. Also, if the vent were plugged, cooling of the product could result in a vacuum being created within the tank. Commenters alleged that replacement of currently authorized cargo tanks would place an enormous financial burden on owners, many of whom are small, independent business operators.

One commenter maintained that the proposals would have a significant cost impact if measured as a percent of total cost for handling asphalts, as well as affecting small governmental jurisdictions. Another commenter reported that over 90 percent of the pavement in the U.S. is hot mix asphalt and nearly all road construction is funded with tax monies by governmental agencies at all levels. The commenter stated that small governmental jurisdictions would pay more because of the increased cost of transporting asphalt cement. The commenter also stated that these small governmental jurisdictions would be further affected as spraying equipment would have to be replaced. According to the commenter, many or most independent road oil applicators are small businesses who would be impacted by the regulation. One commenter believed the financial burden on the not-for-profit government jurisdictions could reduce the overall safe operation of asphalt tanks, but did not elaborate on how overall safety might be reduced.

Numerous commenters maintained that all equipment now in service should be allowed to operate to the end of normal service life, and the effective date should be tied to a period related to development of equipment required to meet the new requirements. After further deliberation, RSPA partially agrees and has provided for the continued use of existing equipment not fully conforming to applicable requirements for 20 years from the date of manufacture provided such equipment meets the performance requirements for closures and, for bitumen and asphalt, also meets the accident damage protection and package marking requirements. In addition, a delayed compliance period has been provided to allow for an orderly transition for manufacturers to conform to the new requirements.

Molten sulfur. Shippers, carriers, The Fertilizer Institute, The Sulphur Institute and the U.S. Department of the Interior (DOI) furnished comments and general statistics on molten sulfur. Molten sulfur is transported at temperatures of 250°–290°F in rail cars, trucks, and barges. Shipment net weight varies from 10 long tons in trucks to 8,000 tons in unit trains; no non-bulk packaging was cited. Transportation equipment is in dedicated service using special rail tank cars, trucks, and barges. Some specialized molten sulfur trailers are equipped with dry material hoppers for dry fertilizer backhaul, in addition to combination tank trailers for molten

sulfur/phosphatic fertilizer solutions. Accident statistics reported are company accident statistics, except for the DOI, which stated that in addition to incidents cited in the Notice, two minor accidents occurred involving spills with no injuries or loss of life.

In general, commenters did not believe that equipment now in use would meet proposed packaging requirements. One commenter believed a rule requiring manhole covers to be closed is warranted, although changing tank specifications would not prevent a recurrence of the type of accident which occurred in Benecia, California. The Sulphur Institute was concerned that ASTM D 4359–84, "Standard Test Method for Determining Whether a Material is a Liquid or a Solid", may be inappropriate if used at the maximum temperature of a material. Several commenters were particularly concerned that the proposed rule is not clear whether tank trucks must have pressure and vacuum control equipment and suggested that DOT clarify this section. One commenter stated that vacuum and pressure controls would depend on loading temperature, length of haul, time elapsed between loading and unloading, trailer capacity, quantity of lading, and temperature at unloading. According to commenters, the current manhole cover on a molten sulfur tank truck consists of a ½ inch-thick stainless steel plate with EPDM sheet gasket covering the area where the cover sits on the manhole collar. The cover is fastened with hold-down bolts. Commenters reported that, during transit, sulfur splashes on the cover and the joint between the cover and the collar and then hardens after cooling. This seals the collar to the cover. The Sulphur Institute noted that the duration of a tank truck shipment of molten sulfur is usually less than a few hours; therefore, based on existing experience, it is unlikely that either pressure buildup or a vacuum develops. The Sulphur Institute also stated that the duration of a rail tank car shipment is usually several days. During the shipment, sulfur solidifies and forms a thick crust on the upper surface and interior walls, adding thickness to the tank and eliminates the need for additional pressure or vacuum controls.

Commenters addressing equipment modification or replacement alleged the impracticality or impossibility of using a rupture disk, creating a leak test, or using an MC 307-type manhole cover. One commenter believed RSPA has not provided criteria for evaluating a lading's potential for pressure deviation, and maintained that the standard safety

vent is adequate to prevent rupture or collapse of a tank car from heating or cooling and to prevent release of material in the event of an overturn. Several commenters asserted that pressure and vacuum controls should not be required for tanks currently in service. Commenters asserted that replacement or modification costs of existing equipment would be significant. The Fertilizer Institute requested that DOT rewrite the section to allow existing tank trucks with proven performance records to operate for the remainder of their service lives. The Sulphur Institute requested that the continued use of existing rail cars be allowed throughout their useful service lives. RSPA agrees and is revising the packaging requirements to allow the continued use of existing equipment not in conformance with the general requirements for 20 years from the date of manufacture, provided closures meet minimum performance requirements. A one-year transition period is provided after which construction of new equipment must be in conformance with the new packaging requirements.

Molten aluminum. Commenters addressing molten aluminum included two shippers, the Aluminum Association, the Aluminum Recycling Association (ARA) and the U.S. Department of the Interior. They reported that molten aluminum is shipped in custom-designed dedicated crucibles by highway. None of the commenters was aware of any non-bulk or rail shipments. Commenters reported that shipping temperatures range between 1200° and 1600°F. According to commenters, during the past three years there have been one spill involving a fatality and two spills involving only damage to the road and the transport vehicle. In addition, commenters noted seven collisions with no spillage and minimal injuries and vehicle damage. ARA member companies reported 19 accidents with four fatalities over 17 years. These fatalities occurred during four different years; in each incident, only the driver died and the deaths may have been cardiac-related.

Most commenters addressing molten aluminum stressed that incident reporting should not apply to loading, unloading or maintenance on shippers' or customers' plant sites where "small" spills may be unavoidable. They stated that small spills occur on a regular basis and that incident reporting should apply only to significant incidents which: (1) occur outside the property of a shipper or receiver; (2) occur on public thoroughfares; (3) cause injury or damage; and (4) are over a certain

weight (e.g., 50 pounds). These commenters believed it is very important that transporters and customers should not be subjected to any reporting burden involving loading or unloading off public highways. They said that incident reporting of all spills during loading, unloading, or transport would impose an unnecessary burden. RSPA, through prior interpretation, has stated that a small amount of unavoidable spillage of hazardous materials during loading and/or unloading is excepted from the reporting requirements. This interpretation does not encompass major spills, ruptured piping, or catastrophic failures which occur during loading or unloading, but rather the small, inadvertent spills which are not the result of package failure, occur at the facility where there are provisions to contain the release, and pose no significant risk to personnel or the environment.

Several commenters reported that custom-designed crucibles are in dedicated service, have a steel plate shell, are refractory lined and insulated, have a steel plate cover bolted or chained to the frame to create an integral unit, and are sealed with special gasketing material. These commenters said they could not furnish data to indicate whether the current packaging would meet the proposed standards, but claimed that the proposed requirement for closures implies verification by demonstration of leaktightness in any orientation. According to commenters, crucibles used to transport molten aluminum may not be leak-tight and are never turned upside down to verify they are leak-tight. The commenters believed this requirement should be revised to read "substantially leak tight in any orientation by design." RSPA agrees and has rewritten the requirements for closures to require substantial leak-tightness in design, but RSPA will allow, in the event of an incident, dripping or trickling from closures.

Other molten materials. Other molten materials identified by commenters included molten iron, molten steel, and molten glass. Several commenters reported that submarine ladles are used to transport molten metals by rail.

They reported that the ladles are bottle-shaped in design with an opening located at the top center of the ladle. Commenters asserted that maintenance procedures on thermos iron ladles contribute to accident-free transport, and the torpedo-type body is lined with 12" thick refractory brick, which is periodically inspected for thin spots and repaired with gunnite or relined by trained employees. Commenters report

that, while the torpedo car is approximately 56' long overall, the cylinder is approx 29' long and mounted in the center of the car, which is equipped with double trucks at each end and two independent brake systems on each car. Gross weight when loaded can be 800,000–850,000 pounds. Molten iron is loaded between 2400°–2700°F; the skin of the car is approximately 550°F. The car attains a maximum speed of 15 mph, which greatly reduces any potential of harm or injury to the public. One company has transported molten iron by rail for over 60 years without incident.

All commenters stated that to completely encapsulate a submarine ladle car would involve designing a lid or cork-like device to be placed in or over the opening. They maintained that there would be three critical flaws to enclose the cars: (1) The procedure necessary to remove and replace the lid each time metal is loaded and poured would require utilization of an overhead crane and an operator positioned above the ladle to remove and replace the lid. This would be dangerous as well as costly and time-consuming; (2) the continual routine of pouring hot metal would cause the car's lip to wear with each pour, making it impossible to enclose the car with an air-tight lid; and (3) no such lid or cork device is currently being manufactured or available. In view of the unique packaging and transportation conditions, at the present time RSPA believes that molten metals and molten glass should be excepted from liquid elevated temperature material packaging requirements if transported by rail at speeds no greater than 15 miles per hour, and has provided a regulatory exception to this effect.

Other liquid elevated temperature materials. Commenters identified Amorphous Polypropylene Copolymer and Amorphous Polypropylene Homopolymer as two materials which would become subject to the HMR. Two other materials, Ortho-Toluenediamine, and Meta-Toluenediamine, are currently regulated in the ORM-A hazard class. Commenters reported that the temperature range of these materials is 240°–375°F when offered for transportation, but these materials are not transported at temperatures above their flash points. Commenters stated that specialized, dedicated cargo tanks are used to transport Amorphous Polypropylene, as well as an occasional shipment in DOT 111A100W tank cars. They stated that cargo tanks have been modified to add exterior heating elements, insulation, and jacketing as a means to maintain temperature. According to several commenters, actual

transportation experience indicates cargo tanks and tank cars currently transporting this type of material will meet proposed packaging requirements.

Solid elevated temperature materials. RSPA received five in-depth comments addressing solid materials are offered for transportation or transported at temperatures exceeding 464°F. The five commenters (three steel companies and two rail carriers) furnished comments on the rail transport of solid elevated temperature materials. Materials identified by the commenters included hot steel slabs, not rolled steel coils, hot cinder, ingots, and solid iron and steel shipped in various forms including rolls of rough sheets referred to as "hot bands." Commenters cited different loading temperatures by commenters ranging from 400°F–2800°F.

Commenters reported that most of the shipments of these hot solid materials are over short distances, both intrastate and interstate by rail.

The trains are in dedicated or unit train service. One company indicated that it owns the cars, and uses engines and crews provided by various railroads. One rail carrier group asserted that they have been involved in the transport of elevated temperature materials for over 100 years, and none of their carriers transporting elevated temperatures materials has ever been involved in an accident where the public's safety was in any way threatened. The other rail carrier maintained that solid iron and steel transported at elevated temperatures has been transported over portions of their lines for over 30 years without any problems. The steel companies reported no accidents or incidents while in transit.

Commenters identified types of equipment used for these rail shipments as gondola cars, some specially designed with steel floor and V bottom troughs, steel floor gondolas with special pipe racks for loading coils, and specially designed flatcars with steel V bottom troughs. They stated that cinder ladles are used to transport hot cinder. These ladles are pot-shaped, approximately 28 feet long, and have a large open top. Slab racks used to transport hot slabs were described by commenters as large heavy-duty flat cars with end bulkheads and risers.

The major concern of three commenters was the proposed packaging requirements for solid elevated temperature materials. These commenters cited the difficulty of encapsulating or enclosing the rail cars. They maintained that it would be extremely costly and impractical, and

that there is currently no technology available to enclose this type of car. They asserted that encapsulating the cars would be counter-productive because the intent is to dissipate the heat through the use of open cars. The additional weight necessary for encapsulation, according to all three commenters, would reduce the amount of product that could be transported in each car, thus resulting in the need for more equipment and higher costs.

All five commenters contended that materials such as hot ingots, hot slabs, and other forms of hot metals should not be classified as "bulk" and therefore not subject to the regulations. RSPA stated in the NPRM that the hazards posed by solid elevated temperature materials are considerably less than for liquid elevated temperature materials because solid materials do not flow away from a release site. After further review, RSPA agrees with commenters that the level of regulation proposed for these solid elevated temperature materials may be too stringent. However, RSPA believes that a hazard communication marking requirement is necessary to warn of the thermal danger of the product and its packaging. Therefore, RSPA is only requiring the marking of the word "HOT" on each side and each end of a bulk packaging containing a solid elevated temperature material.

II. Summary

Under this final rule, materials offered for transportation or transported at or above their flash points are classified as Class 3 (flammable liquid) materials if they are in bulk packagings and intentionally heated before or during transportation. New entries, "Flammable liquid, elevated temperature material, n.o.s." and "Aluminum, molten" are added to the § 172.101 Table. Liquid elevated temperature materials are regulated in the Class 9 (miscellaneous) hazard class. Hazard communication requirements (shipping papers, marking, labeling, placarding, and emergency response communications) are being imposed. The intent of these changes from those proposed in the NPRM is to ensure adequate communication of the hazards posed by these materials, but with appropriate exceptions for environmentally-heated materials and materials in non-bulk packagings. A new performance-based packaging section is provided for these materials. In addition, this section authorizes existing equipment to be used for significant periods of time, provided closures meet minimum performance standards. Based upon rigid operational controls, an exception from packaging

requirements has been provided for molten metals and molten glass transported in rail cars.

The proposed § 172.101 Table entry for "Elevated temperature material, solid, n.o.s." has been revised. Solid elevated temperature materials are not subject to any requirements of the HMR except for marking the word "HOT" on the package.

The following is a section-by-section review of this final rule:

A. Part 171: General Information, Regulations, and Definitions

Section 171.8. Two new definitions, "Elevated temperature material" and "Liquid phase," are added. Both definitions have been clarified from those proposed in the NPRM. Temperatures are indicated in centigrade as the metric standard, in conformance with the December 21, 1990 final rule under HM-181, with Fahrenheit temperatures in parentheses for information purposes only.

B. Part 172: Hazardous Materials Table, Special Provisions and Hazardous Materials Communication Regulations

Section 172.101. In new paragraph (i)(3)(iii), for consistency with the December 21, 1990 final rule under HM-181, the proposed reference to ORM materials is replaced by a reference to a Class 9 material and the proposed packaging reference changed from § 173.990 to § 173.247.

Section 172.101 Hazardous Materials Table. The proposed revision of the entry for "asphalt, at or above its flashpoint," classed as a flammable liquid, was modified under the Docket HM-181 final rule published December 21, 1990. However, the bulk packaging section (§ 173.242) authorized in that final rule is now revised to § 173.247. Entries for molten sulfur, for both domestic and international transportation, have been revised to change the bulk packaging authorization to § 173.247. The proposed entry for "Elevated temperature material, solid, n.o.s., ORM-C, NA9260" has been revised to reference § 173.247, which provides exceptions for these materials. The entry for "Elevated temperature material, liquid, n.o.s." is revised to clarify that this entry applies only to a material that is transported at or above 100 °C and below its flash point. In addition, the proposed hazard class for "Elevated temperature material, liquid, n.o.s." is changed from ORM-C to Class 9, for consistency with the HM-181 final rule. The entry for "Elevated temperature material at or above its flash point" is revised to reference a new entry "Flammable liquid, elevated

temperature material, n.o.s." which authorizes § 173.247 as the bulk packaging section. A new entry has been added for "Aluminum, molten" with its own unique identification number.

Section 172.203. Paragraph (g)(3) is added to alert rail carriers to additional operating requirements for elevated temperature materials excepted under § 173.247. Paragraph (n) is added to require the word "HOT" to precede the proper shipping name of an elevated temperature material if the shipping name does not indicate that it is an elevated temperature material. Exceptions for the proper shipping names "Molten aluminum" and "Molten sulfur" are also added.

Section 172.325. This section is added to require the word "HOT" to be marked on each side and each end of a bulk packaging containing an elevated temperature material. The size, style and method of marking is specified, and an exception is included for molten aluminum and molten sulfur.

C. Part 173: Shippers, General Requirements for Shipments and Packagings

Section 173.24. Paragraph (b)(2) is adopted as proposed in the NPRM to require package effectiveness to be maintained for the entire range of temperatures encountered during transportation.

Section 173.29. This section is adopted essentially as proposed in the NPRM. Proposed paragraph (d) is amended as new paragraph (g) and permits a package containing a residue of an elevated temperature material to remain marked as if it contained a greater quantity of the material.

Section 173.120. Proposed paragraph (a) has been revised for consistency with the final rule issued under Docket HM-181. It is further amended by adding a definition for flammable liquid as a liquid with a flash point at or above 37.8 °C (100°F) which is intentionally heated and offered for transportation or transported at or above its flash point in a bulk packaging. This definition has been revised from the definition proposed in the NPRM to except these materials if they are in non-bulk packagings or not intentionally heated. Examples of intentionally-heated materials include: materials retaining heat as a result of a manufacturing process and which still may be hot when loaded into a packaging; materials which are heated prior to transportation for ease of loading; or materials which are heated while in transportation to maintain their desired physical state.

Section 173.140. A new paragraph is added to this section, as adopted under the Docket HM-181 final rule, to clarify that a material which meets the definition of an elevated temperature material in § 171.8 is classed as a Class 9 material only if it does not meet any other hazard class. In addition to meeting the definition of an elevated temperature material, any material which meets the definition of another hazard class would remain in that hazard class, with the addition of "HOT" on the shipping paper and package marking to convey the subsidiary hazard posed by elevated temperature materials. For example, a Class 8 (corrosive) material, which also meets the definition of an elevated temperature material, would continue to be described, classed and packaged as a Class 8 material, with the additional shipping paper and package marking requirements to indicate the material is also an elevated temperature material.

Section 173.247. Paragraph (a) is adopted as proposed in the NPRM. The general requirements in proposed paragraphs (b)(1) through (b)(6) have been clarified, based on comments indicating difficulties which would be encountered in attempting to conform with the requirements as proposed in the NPRM. Concerning proposed paragraph (b)(1), commenters noted that the use of self-closing pressure and vacuum control devices might prove impractical or impossible to safely implement for packagings containing certain hazardous materials. These materials would, because of their unique physical properties, prevent pressure and vacuum control devices currently in use from operating properly and safely. RSPA acknowledges that, although packagings utilizing open pressure and vacuum controls would not meet the proposed requirements, these materials have been safely transported in such packagings for many years. Therefore, proposed paragraph (b)(1) is revised to allow such devices.

Proposed paragraphs (b)(1) (i) and (ii) have been revised in response to several commenters' contention that conformance to these paragraphs would be difficult due to the diverse use and nature of the various ladings and packagings addressed in this rulemaking. According to commenters, in both paragraphs the term "normal operating condition" cannot be interpreted in the same manner for all situations. RSPA agrees, and proposed paragraphs (b)(1)(i) and (b)(1)(ii) have been rewritten to include, as the baseline, the lowest designed operating temperature and highest permitted

loading temperature, respectively. Proposed paragraph (b)(1)(ii) is also revised to include the provision that vacuum controls are not required for packagings that have been designed to withstand a vacuum of 14.7 psi.

Commenters addressing leak-tight closures in proposed paragraph (b)(2) indicated that, due to physical properties of the lading, temperature, and method of loading, absolute leakproofness of the closures may prove to be an unnecessary financial burden and might actually be a safety hazard during loading in some instances. Additionally, commenters stated that the testing of leaktightness in any orientation could prove impractical or impossible. Accordingly, RSPA has rewritten proposed paragraph (b)(2) to allow for leaktightness in design and to allow for some leakage from closures, in the event of an incident, in any orientation.

Paragraphs (b)(3) and (b)(4) are adopted as proposed in the NPRM. A requirement to mark the date of manufacture on the package is added to proposed paragraph (b)(5). Because RSPA is permitting equipment currently in service to remain in use for up to 20 years from the date of manufacture, some standard method is needed to distinguish between old and new packagings. Concerning proposed paragraph (b)(6), RSPA acknowledges that the proposed accident damage protection requirements for spray equipment and oil applicators are burdensome and believes the risk associated with such equipment does not justify the additional cost. Therefore, proposed paragraph (b)(6) is revised to provide an exception from accident damage protection requirements for spray equipment and oil applicators.

The provisions in paragraph (c)(1) and (c)(2) are adopted as proposed in the NPRM. Proposed paragraph (c)(3) is revised to reference paragraphs (b)(1)(i) and (b)(1)(ii). Paragraphs (c)(4) and (c)(5) are adopted as proposed in the NPRM. Paragraph (c)(6), as proposed in the NPRM, has been replaced. After extensive review, RSPA believes that conformance with the proposed packaging requirements would require much more extensive modification or replacement of existing equipment than originally perceived. Therefore, RSPA is permitting continued use of all packagings which were manufactured up to 20 years prior to the effective date of this rule.

New paragraph (d) is added to provide a series of conformance dates. With the exception of a three-year transition period for all packagings to

conform with closure requirements in paragraph (b)(2), RSPA is permitting continued use of all packagings which were manufactured up to 20 years prior to the effective date of this rule. In paragraph (d)(2), similar provisions for asphalt and bitumen packagings are added, but with the additional requirements in paragraphs (b)(5) and (b)(6) for package marking and accident damage provisions to be met within a one-year period. Paragraph (d)(3) allows a one-year, phase-in period for the manufacture of new packagings conforming to the standards of this rule. RSPA believes that one year is adequate, concurrent with the "grandfathering" of existing equipment. A one-year phase-in period will require all packagings either not in service prior to one year after issuance of the final rule or having their construction completed after the one-year phase-in period, to conform to the new standards beginning one year after the issuance of the final rule.

Exceptions to the new requirements have been added in paragraphs (e)(1) and (e)(2). Paragraph (e)(1) allows molten metals and molten glass to be excepted from all other requirements of the section if the mode of transport is by rail at operating speeds less than 15 miles per hour. Paragraph (e)(2) excepts solid elevated temperature materials from all requirements of the HMR except the requirement to mark the packaging "HOT", as stipulated in § 172.325.

D. Part 174: Carriage by Rail

Section 174.86. This section was removed under the HM-181 final rule. A new § 174.86 is added to restrict the maximum operating speed to 15 mph for packagings containing molten metal or molten glass which do not conform with § 173.247.

III. Regulatory Analyses

A. Executive Order 12291 and DOT Regulatory Policies and Procedures

This final rule has been reviewed under the criteria specified in section 1(b) of Executive Order 12291 and (1) is determined not to be a major rule under Executive Order 12291; (2) does not require a Regulatory Impact Analysis; and (3) is not "significant" under DOT's regulatory policies and procedures [44 FR 11034]. A regulatory evaluation is available for review in the Docket.

B. Executive Order 12612

This final rule has been reviewed in accordance with Executive Order 12612 ("Federalism"). It has no substantial direct effect on the States, on the current

Federal-State relationship, or the current distribution of power and responsibilities among levels of government. Thus, this final rule contains no policies that have Federalism implications, as defined in Executive Order 12612, and no Federalism Assessment is required.

C. Regulatory Flexibility Act

The provisions of this final rule impact shippers and carriers of elevated temperature materials, some of whom may be small entities. Information available to RSPA is insufficient to determine the numbers of entities affected.

As addressed in the regulatory evaluation, which is available for review in the Docket, minor costs would be incurred with respect to new hazard communication requirements (i.e., shipping paper descriptions and package markings), training of personnel, and equipment modification. "Grandfather" provisions for use of existing equipment and a lengthy transition period have been provided to further minimize cost impacts.

Based on available information, I certify that this final rule will not have a significant economic impact on a substantial number of small entities.

D. Paperwork Reduction Act

Information collection requirements contained in this final rule for §§ 172.201 and 172.203 have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (Pub. L. 96-511) under OMB control number 2137-0034 (expiration date: June 30, 1992).

E. Regulatory Information Number (RIN)

A regulatory information number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this

document can be used to cross-reference this action with the Unified Agenda.

F. National Environmental Policy Act

This final rule has been reviewed under the National Environmental Policy Act (42 U.S.C. 4321 et seq.) and does not require an environmental impact statement.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 174

Hazardous materials transportation, Radioactive materials, Railroad safety.

In consideration of the foregoing, 49 CFR parts 171, 172, 173 and 174 are amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS AND DEFINITIONS

1. The authority citation for part 171 continues to read as follows:

Authority. 49 App. U.S.C. 1802, 1803, 1804, 1805, 1808, 1818; 49 CFR part 1.

2. Section 171.8 is amended by adding the following definitions in appropriate alphabetical sequence:

§ 171.8 Definitions and abbreviations.

* * * * *

Elevated temperature material means a material which, when offered for transportation or transported in a bulk packaging:

(1) Is in a liquid phase and at a temperature at or above 100°C (212°F);

(2) Is in a liquid phase with a flash point at or above 37.8°C (100°F) that is intentionally heated and offered for transportation or transported at or above its flash point; or

(3) Is in a solid phase and at a temperature at or above 240°C (464°F).

* * * * *

Liquid phase means a material that meets the definition of "liquid" when evaluated at the higher of the temperature at which it is offered for transportation or at which it is transported, not at the 37.8°C (100°F) temperature specified in ASTM D 4359-84.

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATION REQUIREMENTS AND EMERGENCY RESPONSE INFORMATION REQUIREMENTS

3. The authority citation for part 172 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR part 1.

4. Section 172.101 is amended by adding a new paragraph (i)(3)(iii) to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

(i) * * *

(3) * * *

(iii) For a Class 9 material which meets the definition of an elevated temperature material, the column reference is § 173.247.

* * * * *

5. Section 172.101, the Hazardous Materials Table, is amended by adding or revising, as indicated, the following entries in appropriate alphabetical sequence:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

§ 172.101 HAZARDOUS MATERIALS TABLE

(1) Symbols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or division	(4) Identification numbers	(5) Packing group	(6) Label(s) required (if not excepted)	(7) Special provisions	(8) Packaging authorizations (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage requirements	
							Exceptions	Nonbulk packaging	Bulk packaging	Passenger aircraft or rail car	Cargo aircraft only	Vessel stowage	Other stowage provisions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)
													(10B)
D	ADD												
D	Aluminum, molten	9	NA9260		III	Class 9		None	None	247	Forbidden	Forbidden	D
D	Elevated temperature material, liquid, n.o.s. (at or above 100°C (212°F) and below its flash point).	9	NA9259		III	Class 9		None	None	247	Forbidden	Forbidden	D
D	Elevated temperature material at or above its flash point; see Flammable liquid, elevated temperature material, n.o.s. (see § 173.247(d)(2)).												M4
D	Elevated temperature material, solid, n.o.s. (see § 173.247(d)(2)).												
D	Flammable liquid, elevated temperature material, n.o.s.	3	NA9275		III	Flammable liquid.		None	None	247	Forbidden	Forbidden	D
D	REVISE												
I	Asphalt, at or above its flashpoint	3	NA1999		III	Flammable liquid.		150	203	247	Forbidden	Forbidden	D
D	Sulfur, molten	4.1	UN2448		III	Flammable solid.	T9, T38	None	213	247	Forbidden	Forbidden	C
D	Sulfur, molten	9	NA2448		III	Class 9	T9, T38	None	213	247	Forbidden	Forbidden	C

6. Section 172.203 is amended by adding new paragraphs (g)(3) and (n) to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(g) * * *

(3) When shipments of elevated temperature materials are transported under the exception permitted in § 173.247(d) of this subchapter, the shipping paper must contain an appropriate notation, such as "Maximum Operating Speed 15 mph."

* * * * *

(n) *Elevated temperature materials.* Except for molten sulfur or molten aluminum, if a liquid material in a package meets the definition of an elevated temperature material in § 171.8 of this subchapter, and the fact that it is an elevated temperature material is not disclosed in the shipping name, the word "HOT" must immediately precede the proper shipping name of the material on the shipping paper.

7. Subpart D of part 172 is amended by adding a new § 172.325 to read as follows:

§ 172.325 Elevated temperature materials.

Except for bulk packaging containing molten aluminum or molten sulfur, which must be marked "MOLTEN ALUMINUM" or "MOLTEN SULFUR" respectively, a bulk packaging containing an elevated temperature material must be marked on each side and each end with the word "HOT" in black or white Gothic lettering on a contrasting background. The letters in the marking must be at least 100 mm (3.9 inches) in height for rail cars and at least 50 mm (2 inches) in height for all other bulk packagings. The marking must be displayed on the bulk packaging itself or in black lettering on a white square-on-point configuration having the same outside dimensions as a placard

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

8. The authority citation for part 173 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1805, 1806, 1807, 1808; 49 CFR part 1, unless otherwise noted.

9. Section 173.24 is amended by revising paragraph (b)(2) to read as follows:

§ 173.24 General requirements for packagings and packages.

* * * * *

(b) * * *

(2) The effectiveness of the package will not be substantially reduced; for example, impact resistance, strength, packaging compatibility, etc. must be maintained for the minimum and maximum temperatures encountered during transportation;

* * * * *

10. Section 173.29 is amended by adding a new paragraph (g) to read as follows:

§ 173.29 Empty packagings.

* * * * *

(g) A package which contains a residue of an elevated temperature material may remain marked in the same manner as when it contained a greater quantity of the material even though it no longer meets the definition in § 171.8 of this subchapter for an elevated temperature material.

11. Section 173.120 is amended by revising paragraph (a) to read as follows:

§ 173.120 Class 3—Definitions.

(a) *Flammable liquid.* (1) For the purpose of this subchapter, a "flammable liquid" (Class 3) means a liquid having a flash point of not more than 60.5 °C (141 °F), or any material in a liquid phase with a flash point at or above 37.8 °C (100 °F) that is intentionally heated and offered for transportation or transported at or above its flash point in a bulk packaging, with the following exceptions:

(i) Any liquid meeting one of the definitions specified in § 173.115 of this part;

(ii) Any mixture having one or more components with a flash point of 60.5 °C (141 °F) or higher, that makes up at least 99 percent of the total volume of the mixture, if the mixture is not offered for transportation or transported at or above its flash point.

(2) For the purposes of this subchapter, a distilled spirit of 140 proof or lower is considered to have a flash point of no lower than 23 °C (73 °F).

* * * * *

12. Section 173.140 is amended by adding paragraph (c) to read as follows:

§ 173.140 Class 9—Definitions.

* * * * *

(c) Meets the definition in § 171.8 of this subchapter for an elevated temperature material.

13. In addition, § 173.140 is amended by removing the word "and" at the end of paragraph (a), and removing the period and adding "; and" at the end of paragraph (b).

14. Subpart F of part 173 is amended by adding § 173.247 to read as follows:

§ 173.247 Elevated temperature material.

(a) When § 172.101 of this subchapter specifies that an elevated temperature material (see § 171.8 of this subchapter) must be packaged under this section, only bulk packagings which conform to the requirements of this section are authorized.

(b) *General requirements.* Bulk packagings must conform to the following requirements:

(1) *Pressure and vacuum control equipment.* When required as indicated in this section, pressure and vacuum control equipment must prevent the rupture or collapse of the package from heating, including fire engulfment, or cooling, and prevent any significant release of lading in the event the package is overturned. Pressure relief devices used on packagings transporting ladings that will not cause significant clogging, freezing, or fouling of such a device must be of a self-reclosing design. The pressure relief devices utilized for packages with lading that will render the device inoperable due to severe clogging, freezing, or fouling of the device, may have a permanent opening with a maximum diameter of 38 mm (1.5 inches). The pressure and vacuum controls may be external to the packaging and must be in conformance with paragraph (b)(6) of this section. Pressure and vacuum controls are required as follows:

(i) Provision for pressure control must be provided on packagings where the lading can develop pressure increases of greater than 10 percent as a result of heating from the pressure at the lowest designed operating temperature.

(ii) Provision for vacuum control must be provided on packages where the lading can develop pressure decreases of greater than 10 percent as a result of cooling from the pressure at the highest permitted loading temperature of the lading. Vacuum control is not required on packages designed to withstand a vacuum of 101 kPa (14.7 psig).

(2) *Closures.* All openings must be securely closed during transportation. Packages must be substantially leak tight in design as to allow no more than dripping or trickling of a non-continuous type flow in any orientation. Closures must be designed and constructed to withstand, at all operating temperatures, without substantial deformation twice the static loading produced by the lading in any orientation.

(3) *Strength.* Each package must be designed and constructed to withstand, at all operating temperatures, without substantial deformation twice the static loading produced by the lading in any orientation.

(4) *Compatibility.* The packaging and lading must be compatible over the entire operating temperature range.

(5) *Markings.* In addition to any other markings required by this subchapter, each package must be marked in characters at least 9.5 mm (0.375 inches) with the manufacturer's name, date of manufacture, nominal capacity, design temperature range, and maximum product weight.

(6) *Accident damage protection.* For transportation by highway, external loading and unloading valves, if any, and closures must be protected from impact damage resulting from collision or overturn. Spraying equipment and road oil applicators are excepted from this requirement.

(c) *Authorized packagings.* The following bulk packagings are authorized:

(1) DOT specification cargo tanks, tank cars, and intermodal portable tanks;

(2) AAR Specification 203W, 206A, and 211A tank cars;

(3) Nonspecification cargo tanks, tank cars and portable tanks which are equivalent in structural design and accident damage resistance to the packagings prescribed in paragraph (c)(1) of this section, except for alternative pressure and vacuum control equipment as defined in paragraphs (b)(1) (i) and (ii) of this section;

(4) Nonspecification crucibles designed and constructed such that the stress in the packaging does not exceed one fourth (0.25) of the strength of the

packaging at any temperature within the design temperature range. Stress is determined under a load equal to the sum of the static or working pressure in combination with the loads developed from accelerations and decelerations incident to normal transportation. For highway transportation, these forces are assumed to be "1.7g" vertical, "0.75g" longitudinal, and "0.4g" transverse, in reference to the axes of the transport vehicle. Each accelerative or decelerative load may be considered separately; and

(5) All other packagings which were manufactured for the transportation of elevated temperature materials prior to March 30, 1993.

(d) *Dates of Conformance.* (1) All packagings authorized in paragraph (c) of this section must be in conformance with paragraph (b)(2) of this section no later than March 30, 1995.

(2) Packagings used for the transportation of bitumen and asphalt must also be in conformance with paragraphs (b)(5) and (b)(6) of this section no later than March 30, 1993.

(3) All packagings manufactured after March 30, 1993, must comply with the provisions of paragraph (b) of this section.

(4) Packagings authorized in paragraph (c) of this section which were in service prior to March 30, 1993, and not in full compliance with paragraph (b) of this section may continue to be used for up to 20 years from their date of manufacture.

(e) *Exceptions.* (1) This section does not apply to packagings used for molten metals and molten glass by rail when the movement is restricted to operating speeds less than 15 miles per hour. (See § 172.203(g)(3) of this subchapter for shipping paper requirements.)

(2) A material which meets the definition of a solid elevated temperature material is excepted from all requirements of this subchapter except § 172.325.

PART 174—CARRIAGE BY RAIL

15. The authority citation for part 174 continues to read as follows:

Authority: 49 App. U.S.C. 1803, 1804, 1808; 49 CFR part 1.

16. Section 174.86 is added to subpart D to read as follows:

§ 174.86 Maximum allowable operating speed.

For molten metals and molten glass shipped in packagings other than those prescribed in § 173.247 of this subchapter, the maximum allowable operating speed may not exceed 15 mph for shipments by rail.

Issued in Washington, DC on September 25, 1991, under authority delegated in 49 CFR part 106, appendix A.

Travis P. Dungan,

Administrator, Research and Special Programs Administration.

[FR Doc. 91-23468 Filed 10-1-91; 8:45 am]

BILLING CODE 4910-80-M

Test Report Federal

**Wednesday
October 2, 1991**

Part IV

Environmental Protection Agency

**Guidance for the Use of the Terms
"Recycled" and "Recyclable" and the
Recycling Emblem in Environmental
Marketing Claims; Notice of Public
Meeting**

ENVIRONMENTAL PROTECTION AGENCY

[EPA/OSW-FR-91-032; SWH-FRL-4018-3]

Guidance for the Use of the Terms "Recycled" and "Recyclable" and the Recycling Emblem in Environmental Marketing Claims

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of public meeting and request for comments.

SUMMARY: EPA plans to develop recommendations to the Federal Trade Commission on voluntary guidance for environmental claims promoting the use of recycled materials and recyclable materials. The Federal Trade Commission is considering such guidance in response to petitions from States and today's notice solicits comment on a number of options EPA is considering for the guidance. The notice also announces the time and location of a public meeting EPA will hold to hear oral comments from interested parties on the options outlined in this notice.

DATES: Comments on this notice must be received on or before December 31, 1991. The public meeting will be held on Wednesday, November 13, and Thursday, November 14, 1991 from 9:30 am to 4:30 pm at The Rosslyn Westpark Hotel, Arlington, VA. Requests to present oral testimony must be received on or before Monday, October 28, 1991. EPA requests that ten copies of the oral comments be submitted on or before Friday, November 8, 1991.

ADDRESSES: (1) Public Meeting—The Agency will hold a public meeting on Wednesday, November 13, and Thursday, November 14, 1991, to receive comments on the options and issues relating to the options. The meeting will consist of two days of testimony. Because of the limited amount of time available and the desire to hear a range of views, presenters will be grouped in appropriate panels and will be allotted a specified time for statements, which may be followed by questions from the panel. Groups with common perspectives on the questions raised by these options are urged to select a single representative.

Written requests to appear at the meeting should be submitted no later than Monday, October 28, 1991 to: Office of Solid Waste, Public Meeting Request/F-91-GPLP-FFFFF, OS-305, 401 M Street, SW., Washington, DC 20460. The notice of participation should contain the name, affiliation (if applicable), address, and telephone number of the participant and the individual presenter,

and a brief statement of the participant's interest in the matter, and the topic of presentation.

If the Agency determines that there will not be adequate time to hear from all those wishing to present comments, the Agency will select among those wishing to testify, in order to ensure that a range of viewpoints and interests is represented. As time allows, individuals may also sign up to present comments during registration time at the hearing.

The public meeting will be held at The Rosslyn Westpark Hotel, 1900 North Fort Myer Drive, Arlington, VA 22209 in the Rosslyn Ballroom.

(2) Written Comments—Written statements and additional information may be submitted at the public hearing for inclusion in the official record. Written comments of any length will be accepted. Commenters must send an original and two copies of their comments to: RCRA Docket Information Center, Office of Solid Waste (OS-305), U.S. Environmental Protection Agency Headquarters, 401 M Street SW., Washington, DC 20460. Comments must include the docket number F-91-GPLP-FFFFF. The public docket is located at EPA Headquarters, room M2427 and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials. Call (202) 260-9327 for appointments. Copies cost \$.15/page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA/Superfund Hotline, Office of Solid Waste, U.S. Environmental Protection Agency (800) 424-9346 or (703) 920-9810, local in the Washington, DC metropolitan area.

For information on specific aspects of this notice, contact William MacLeod, Office of Solid Waste (OS-301), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202) 260-4662.

SUPPLEMENTARY INFORMATION: Copies of the following documents are available for viewing only in the RCRA Docket room:

The Green Report: Findings and Preliminary Recommendations for Responsible Environmental Advertising, State Attorneys General Task Force.

The Green Report II: Recommendations for Responsible Environmental Advertising, State Attorneys General Task Force.

Recycling Emblem Regulations, State of Rhode Island and Providence Plantations Regulations.

6 NYCRR Part 368 Recycling Emblems, New York State Regulations.

Regional Labeling Standards and Labeling Resolution, the Northeast Recycling Council.

Petition for Federal Trade Commission Guides from National Food Processing Association and other Petitioners.

Petition for Federal Trade Commission Guides from the Cosmetic, Toiletry, and Fragrance Association and the Nonprescription Drug Manufacturers Association.

Open Remarks of F. Henry Habicht II, Deputy Administrator, U.S. Environmental Protection Agency before the Federal Trade Commission, Hearings on Environmental Labeling, July 17, 1991.

Workplan for the Interagency Task Force on Environmental Marketing Claims, U.S. Environmental Protection Agency, Federal Trade Commission, U.S. Office of Consumer Affairs. Description of Labeling Efforts, Draft EPA Report.

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I. Introduction

A. Overview

The American public is increasingly concerned about environmental issues.

and individuals are looking for ways to do their part to protect our nation's environment and resources. In the past few years, public understanding of the nature of environmental problems has become more sophisticated. Many people recognize that large environmental problems are created not only by the actions of large companies and organizations, but also by the seemingly small actions of millions of individuals, for example, the generation of municipal solid waste, or the generation of "greenhouse" gases that may contribute to global climate change.

Many individuals are responding by trying to lessen the impacts of their own behavior, by car-pooling to work, conserving water at home, and purchasing consumer products which in some way offer an environmental advantage: Energy-saving lighting fixtures and appliances, products which contain fewer hazardous constituents, or products containing recycled materials. Manufacturers and marketers are responding to the consumer demand for "environmentally oriented" products by attempting to make products which do not contribute to upper atmospheric ozone depletion, create less solid waste or fewer adverse impacts on water quality, etc. They are also advertising and otherwise highlighting both the real, and desired, environmental benefits of these products for consumers.

The Environmental Protection Agency (EPA) views the increased desire for "environmentally oriented" products as an opportunity to find effective non-regulatory solutions to difficult environmental problems which may in some cases be solved more efficiently in the marketplace than through government regulations. Environmentally informed consumers making purchasing decisions based upon accurate and reliable information about the environmental attributes of products would encourage manufacturers to produce goods which have fewer adverse environmental impacts.

To affect a shift toward more environmentally benign products three things must occur: First, manufacturers need to produce products which are better for the environment; second, consumers need to be provided accurate, reliable, and meaningful information concerning the environmental attributes of these products; and, third, consumers need to preferentially purchase these products. We are starting to see manufacturers making products with fewer adverse environmental impacts. In many cases, however, consumers are not being

provided reliable and meaningful information about the advantages of these products, partially because of the lack of national consensus on the meaning and use of environmental terms in advertising and labeling. Consumers cannot know how to interpret and use the information they receive until consumers, manufacturers, and government speak a common language. Our failure to speak the same language in environmental marketing is creating problems both for manufacturers who are producing and attempting to market environmentally oriented products, and consumers who are seeking to purchase them.

Some manufacturers who have made legitimate attempts to improve their products by reducing their environmental impacts are unsure how to promote the environmental benefits of their products. They are concerned about criticism and liability for false or misleading advertising if they advertise environmental benefits in the absence of clear and uniform standards or, conversely, they face a potential loss of market share if they do not advertise environmental benefits and their competitors do.

Meanwhile, because manufacturers are making claims based upon differing standards, consumers often do not know what the claims mean, and this creates some consumer confusion and suspicion of environmental claims. Environmental claims are a special class of claims because consumers typically lack the scientific expertise to assess the validity of the claims that marketers are making. The increasing numbers of environmental claims bombarding consumers with information on competing environmental impacts, e.g., "source reduced" or "recyclable" versus "biodegradable," compounds these problems. Also, some highly aggressive marketers may make confusing and even misleading environmental claims, further adding to consumer confusion.

Initial attempts to address this situation have come from State governments; for example, several States, including New York, California, and Rhode Island, have passed legislation or issued regulations which provide standard definitions or guidelines for the use of the terms "recycled" and "recyclable" (and other terms). While individual State action has been part of an important first step to help define and shape the issue, as well as begin the initial consensus building process between government, industry, and consumers, the definitions and guidelines developed at the State government level are not necessarily

consistent and compatible with each other. As more States adopt regulations or pass laws to address the issue of environmental marketing, national marketers or distributors may find themselves in a situation where they will either have to target advertising for each State, which could be prohibitively expensive, or will stop advertising the environmental benefits of their products altogether.

Recognizing the limitations of an uncoordinated State-by-State response to the issue, some State organizations have begun to address the issue of environmental marketing at national and regional levels. A task force comprised of the Attorneys General from eleven States has formulated guidance for environmental marketing, which are contained in the Green Report II—Guidance for Responsible Environmental Advertising. This report not only contains guidance for environmental marketing, but also calls upon the Federal government to adopt national standards for environmental marketing claims used in the labeling, packaging, and promotion of consumer products. At the regional level, the Northeast Recycling Council, an organization comprised of State environmental officials from ten Northeastern States, has developed consensus guidelines for the use of the terms "reusable," "recycled content" and "recyclable" in product labeling. These consensus guidelines could be adopted by all ten of the member States in an effort to achieve regional coordination.

If national consensus over the use of these terms is not reached in the near future, we face the danger of losing a valuable tool for educating the public and influencing the production and use of more environmentally oriented products. Consumers may come to distrust or ignore all environmental claims, and national manufacturers and marketers may become so hamstrung by conflicting State standards that they avoid making these claims completely.

B. Federal Role

The U.S. EPA, the U.S. Office of Consumer Affairs (USOCA), and the Federal Trade Commission (FTC) recognize the opportunity presented by environmental marketing for improving the environment as well as the need to avoid misleading or deceptive environmental claims. They also understand the need for Federal involvement to address this issue at the national level. These three agencies have joined to form a Federal Task Force to provide a coordinated and

cohesive national response to the issue of environmental labeling and marketing claims. The members of the Task Force will work together to help ensure that consumer, advertising, and environmental issues are addressed through a coordinated national effort.

The Task Force is intended to enhance and coordinate, rather than supersede, environmental marketing activities currently taking place in each individual agency. Environmental marketing claims may potentially be addressed by one of a combination of several approaches: FTC industry guides, FTC case-by-case enforcement, EPA Guidance for specific terms, and more general guidance, issued by EPA or jointly by the Task Force, that applies to a category of claims. The Task Force will coordinate agency efforts so the appropriate mix of approaches is used to address the commonly used or most problematic claims.

As an initial step to address a key subject in this area, EPA is developing guidance for two terms related to recycling of materials from solid waste: "Recycled" and "recyclable," and for the use of the recycling emblem. This is a topic of much consumer and business interest, and these terms are two of the most frequently used environmental claims.

The FTC held hearings on July 17 and 18, 1991, to gather information to assist them in determining whether they should develop industry guides for the use of environmental marketing claims. If FTC should decide to go forward with developing industry guides in the future, EPA will share the information we are gathering with them, which may serve them in the development of the industry guides. EPA stands ready to assist FTC in any way possible to ensure that the environmental policy needs discussed in this notice are addressed in an effective and coordinated way by the guides. If FTC should decide not to develop industry guides, EPA will publish the recommendations as its guidance to industry and consumers.

C. Purpose of Today's Notice

Today's notice solicits comment on options for guidance to be used by marketers in product labeling and advertising promoting the use of recycled materials and recyclable materials. EPA will hold a public meeting to hear oral comment from interested parties on the options outlined in this notice.

D. Goals and Objectives of EPA Voluntary Environmental Claims Guidance

EPA has two overriding goals in addressing "recycled content" and "recyclable" claims: We want to encourage the trends toward (1) the increased use of recycled materials in products and (2) the increased recovery of materials for recycling. These goals will be advanced by facilitating the communication between consumers and marketers as to which products contain recycled materials content and which products are recyclable. By doing this we will help to restore consumer confidence in environmental marketing claims. (We recognize that improved labeling practices need to be supplemented by strong educational programs to help the general public understand and actively participate in recycling.) We also want to insure that all companies making "recycled content" and "recyclable" claims operate on a level playing field: One company should not be able to gain a market advantage over another company by promoting its product as something the product is not. This will help to ensure that companies making legitimate environmental improvements to their products will benefit from the increased consumer demand for environmentally oriented products, fostering the desire on the part of marketers to provide consumers with more environmentally oriented products.

II. Definitions

The following definitions are used in the notice. These definitions are intended to serve as guidance to marketers and to help educate consumers. In formulating these definitions, EPA has reviewed statutory and regulatory definitions from the Resource Conservation and Recovery Act (RCRA). However, the definitions stated here may not parallel those found in RCRA. For example, whereas the RCRA definition for "post-consumer material" is applicable primarily to paper and paper products, EPA has broadened that definition for purposes of this guidance so that it is applicable in more situations. In choosing the definitions to include in the notice, we have recognized that many of the RCRA definitions apply to government procurement of materials with recycled content, and procurement policy issues might differ from the issues we are addressing in this notice.

The term "home scrap" means those scrap materials, virgin content of a material, or by-products generated from,

and commonly reused within, an original manufacturing process.

The term "post-consumer materials" means those products or other materials generated by a business or consumer that have served their intended end uses, and that have been recovered from or otherwise diverted from the solid waste stream for the purpose of recycling.

The term "pre-consumer materials" means those materials generated during any step in the production of a product, and that have been recovered from or otherwise diverted from the solid waste stream for the purpose of recycling, but does not include those scrap materials, virgin content of a material, or by-products generated from, and commonly reused within, an original manufacturing process.

The term "product" means goods or commodities that are created by, or are an end result of, a manufacturing process. For the purpose of this guidance, packaging is included in this definition.

The term "recycled materials" means pre-consumer materials and post-consumer materials, and does not include home scrap.

The term "recyclables" means products or materials that can be recovered from or otherwise diverted from the solid waste stream for the purpose of recycling.

The term "recycled content" means the portion of a material's or product's weight that is composed of pre-consumer and post-consumer materials.

The term "recycle" means the series of activities, including collection, separation, and processing, by which products or other materials are recovered from or otherwise diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.

The term "recycling rate" means the percentage by weight of a given product or material category that is recycled.

We are soliciting comment on whether the definitions listed in this section are accurate and complete for the purpose of this guidance, and will, if commonly adopted, result in less confusion among manufacturers, marketers, and consumers concerning recycled content and recyclable claims. We are also soliciting comment on whether we should include other terms which would help manufacturers communicate with consumers concerning the use of recycled and recyclable materials.

III. Options for Guidance for Recycled Content Claims

The number of Americans served by recycling collection programs has grown rapidly in the past several years. Over 30 million Americans are now served by curbside recycling collection programs, and this number is expected to continue to grow in the coming years. The success of these recycling programs depends upon their ability to collect materials and market those materials. While starting up collection can be the most difficult part of initiating a recycling program, successfully marketing the collected materials will determine the long-term sustainability of the program. For example, some programs that were previously collecting old newspapers stopped when market supply of old newspapers exceeded demand, and prices for the collected materials fell. Many Americans are realizing that collecting materials for recycling is only one element of successful recycling; products containing recycled materials also need to be purchased in order to ensure healthy market demand for materials collected by municipal and other recycling programs. This understanding, as well as a general desire to take positive action for the environment, has helped increase consumer demand for products made with recycled content.

Manufacturers are responding to consumer demand by making more products that use recycled materials, using increasing amounts of recycled materials in products, and developing new ways of utilizing recycled materials in products. Knowing that many consumers are seeking goods with recycled content, marketers are advertising their use of recycled content in more and more products in many different ways. EPA wants the trend towards using greater amounts of recycled materials to continue, and strongly believes that consumer demand for products with recycled content is essential for this to occur. The messages in product advertising concerning recycled content should supply the consumer with useful, accurate, and understandable information. Guidance to manufacturers, marketers, and consumers on such messages can help prevent consumers from becoming cynical and disillusioned about recycled content claims, and can help consumers identify products that use more recycled materials and create incentives for manufacturers to use more recycled materials. This guidance is intended to make "recycled content" claims more consistent and meaningful.

The two major concerns EPA has about "recycled content" claims are first, the types of materials which marketers are claiming as being "recycled," and second, the failure of some marketers to provide useful, accurate, and understandable information to consumers about the amount and sources of recycled material in products. The first problem is due in part to the lack of commonly accepted definitions for terms such as, "post-consumer materials," "recycled materials," etc. In the absence of commonly accepted definitions, some marketers have made dubious claims, for example, claiming that "home scrap" materials are "recycled," when, in fact, such "home scrap" materials are produced and reused within an original manufacturing process and never enter the waste stream.

In order to address this issue, EPA has included in this notice proposed definitions for the terms "recycled materials," "post-consumer materials," "pre-consumer materials," and others. These definitions can be used by marketers in their claims and to help educate consumers. The definitions we are considering are listed in the previous section.

The second potential problem with "recycled content" claims concerns statements that are vague, potentially misleading, and provide little information to consumers. Concerns have been expressed that broad statements on products such as "Made with recycled materials"; "Recycled Content;" or statements that use the "chasing arrows" recycling loop emblem and the term "Recycled," do not provide consumers with sufficient information for the statements to be meaningful. These statements could apply to products containing anywhere from 1% to 100% recycled content. If some consumers care about the use of recycled materials in a product, then it is a likely assumption that these consumers would also be concerned about the amount of recycled content and would generally prefer as much recycled content as feasible. To address these concerns, EPA is examining the following three options for recycled content claims guidance.

A. Option 1: Disclosure of Recycled Materials Content

In order to make statements concerning the use of recycled materials more meaningful, EPA is considering recommending that marketers who advertise the use of recycled materials in a product prominently and clearly state the percentage by weight of recycled materials in the product. For

example, an aluminum can manufacturer that uses 50% recycled materials by weight to produce an aluminum can could advertise the use of recycled materials by making a statement such as "Recycled Aluminum: contains 50% recycled materials." No minimum threshold for recycled content would be set or recommended under this option.

This option meets two needs. First, the consumer will be provided with useful and accurate information. By placing the percentage of recycled materials on the product, the consumer will be informed of the use of recycled materials, and the relative amount of recycled materials in the product. Second, this will provide consumers with the opportunity to choose products containing higher amounts of recycled material, thereby potentially creating competitive pressures to increase the amount of recycled materials content in products in order to meet consumer demand.

One disadvantage to this option is that it relies heavily upon consumer knowledge of and demand for goods produced with recycled materials. If consumers do not understand the meaning of the terms used or the recycled content percentage, then this information could have little effect upon the amount of recycled materials used. EPA requests comment on this issue and any data concerning consumer understanding of these terms.

B. Option 2: Minimum Content Standards

EPA is also considering a recommendation that marketers should promote the recycled content of a product or packaging only if the product or packaging meets a specified minimum percentage of recycled content. With this option, EPA would recommend either (1) a generic minimum content standard for all products (e.g., all products should meet a 25% minimum recycled content standard before being promoted as containing recycled content), or (2) a series of standards specific to materials or product categories (e.g., aluminum beverage containers should meet a 50% standard, newsprint should meet a 30% standard). EPA would then recommend that marketers meet these standards before promoting the use of recycled materials.

This option has several advantages. If the standards were commonly adopted, it would provide consumers with the knowledge and assurance of a minimum threshold of recycled content when they see content claims. This option could increase the amount of recycled

materials used, if the minimum percentages were set sufficiently high that some manufacturers would need to increase the amount of recycled materials they put in products in order to meet the standards. The option would solve the major disadvantage of Option 1, because it does not rely as heavily on consumer knowledge of and demand for increased amounts of recycled materials use to determine recycled content levels, because these levels will be set by the Administrator.

EPA's Guidelines for Federal Procurement issued under section 6002 of RCRA provide recommended standards for government purchases of goods containing recovered materials. EPA could use these standards as a starting point for setting the standards under this option. (See, for example, 40 CFR part 250.) EPA is requesting comment on whether the "Procurement Guidelines" provide suitable minimum content standards for this guidance.

One disadvantage with this option is that it would not distinguish between products whose recycled content is barely above the standard and those products that are greatly exceeding the standard. Because marketers would not necessarily state the amount of recycled materials content, this option also would not provide consumers with information they could use to choose products with larger amounts of recycled materials content. This option would likely entail high standard setting costs to EPA, as well as the need for ongoing evaluation of the use of recycled materials in products, and periodic revision of the guidance in order to encourage greater use of recycled materials. Also, it is not clear that a commonly accepted, sound basis exists for setting content percentages across many products. Finally, industry could view the standard not only as the minimum level of recycled content, but also as the ceiling, resulting perhaps in less than desired recycled material use. This may occur because industries may have little incentive to go beyond the minimum standard.

C. Option 3: Minimum Content Standards and Disclosure

EPA is also considering recommending a combination of options 1 and 2 which would (1) discourage marketers from promoting the use of recycled materials content unless they meet or exceed a specified minimum content standard, and (2) state the percentage by weight of recycled materials in the product.

The advantage of this option is that consumers would be provided information concerning the percentage

of recycled materials used in a product, which would allow them to choose products with higher percentages of recycled material content, and they would be ensured a minimum threshold of recycled content. However, this option would have disadvantages similar to the previous option in regard to costs, the burden of ongoing evaluation, and the difficulty in establishing optimum minimum recycled content standards.

D. EPA's Preferred Option

EPA's preferred option for the use of "recycled content" claims is Option 1: Disclosure of Recycled Materials Content, whereby a marketer would prominently disclose the percentage recycled materials content as part of any "recycled content" claim.

Unlike the other two options which require EPA to establish standards, this option would offer low costs to government, would avoid the need for EPA to oversee development and implementation of minimum content standards, and would not set standards that could be viewed as a ceiling by industry or be considered as arbitrary by observers.

Marketers following this guidance would provide consumers with information on the percentage of recycled content in their products. Consumers can use this information as part of their purchasing decision, potentially creating competition among manufacturers to meet consumer demand for recycled content. EPA believes that many marketers could respond quickly to consumer demand, rapidly increasing their use of recycled materials.

E. General Issues Relating to "Recycled Content" Claims

In this section we will present two important issues which cut across all three of the options for guidance that EPA is considering. EPA is seeking comment on both of these critical issues. The first issue relates to the definitions of "recycled materials" and "recycled content." In the proposed definitions we have defined "recycled materials" as including both pre- and post-consumer materials. This approach was taken for three reasons. First, it is not clear whether consumers understand the difference between pre- and post-consumer materials. The broader, more inclusive definition may be simpler and thus more effective. Second, some pre-consumer wastes which are currently being disposed can be recovered. Efforts to recycle such materials through consumer marketing can help alleviate local disposal problems. Third, it is not

clear whether the distinction between pre- and post-consumer waste can be tracked efficiently by producers and brokers handling a variety of waste streams.

Other parties, however, have made the case that encouraging use of post-consumer materials is desirable, because post-consumer materials are relatively more difficult to collect, separate, and process than pre-consumer materials have been traditionally recycled more commonly. For these reasons, they argue that the recycling of post-consumer materials should be encouraged more aggressively than the recycling of pre-consumer materials, or, at the very least, the percentage of post-consumer material content should be specifically stated when communicating the use of recycled materials. Some examples of this position are the State of California's law which requires the use of 10% post-consumer material content before a claim of recycled content can be made, the recommendation of the ad-hoc Committee on Environmental Advertising of the National Association of Attorneys General that marketers not call pre-consumer materials "recycled," and the Northeast Recycling Council's recommendation that marketers separately label the percentages of pre- and post-consumer materials along with any recycled content claim.

EPA would like to receive comment on whether defining "recycled content" to include both pre-consumer and post-consumer materials, or to include only post-consumer materials, will best promote increased consumer understanding regarding this issue. EPA would like to receive comment on whether a recommendation to state pre- and/or post-consumer materials content will lead to increased amounts of materials diverted from incinerators and landfills. Does information exist that demonstrates the effects on solid waste disposal of substituting post-consumer materials for pre-consumer materials? Will a preference for post-consumer materials result in the substitution of post-consumer materials for pre-consumer materials and not lead to a reduction in the total amount of materials destined for disposal? EPA also solicits comments on the feasibility and costs of differentiating and monitoring post-consumer materials content in various manufacturing processes.

The other issue for which EPA is seeking comment concerns the calculation of recycled content, another important issue which cuts across all three options. Several approaches to

calculating recycled content could be used, the difference between the approaches largely having to do with the amount of time over which the recycled materials use is counted. EPA's Procurement Guidelines for paper and paper products are very prescriptive in this regard, requiring that manufacturers meet the standards on a batch-by-batch basis, while EPA's Procurement Guideline for insulation products bases the calculation upon a monthly mass balance of recycled to virgin materials used. The State of New York calculates the percentage of recycled materials as being "that proportion of a package or product weight that is composed of recycled materials as demonstrated by an annual mass balance of all feedstocks and outputs of the manufacturing process." EPA is seeking comment as to what type of accounting system is most appropriate for consumer products claiming the use of recycled materials. Should we be recommending a batch-by-batch, monthly, or annual accounting? Are there other accounting issues that we should be considering?

IV. Options and Guidance for Recyclable Marketing Claims

As more and more Americans participate in recycling programs, the recyclability of products which they purchase is increasingly important. Many Americans want to participate in recycling programs and do their part to help reduce the amount of waste sent to landfills and waste combusters. In order to participate they need to know which materials are collected locally and how these materials need to be prepared for collection.

The most reliable source of information on what materials are collected locally is the local public or private organization sponsoring the program. These organizations, however, often do not have funds sufficient to allow them to mount a comprehensive public education campaign. As a result, consumers often look for information wherever they can find it, and some are looking to product labeling and advertising to learn whether a product can be recycled.

Unfortunately for consumers, recyclability claims are seldom of much assistance in helping them recycle in their own communities, because these claims are not typically based on community availability of recycling programs. Observers have noted that for many consumers, recyclability is determined by the availability of collection programs for the product in their community; however, marketers commonly make "recyclable" claims in order to inform the consumer that the

product, if collected, can technically be processed and used, without regard to whether an individual has reasonable access to programs that actually collect the product for use. Because of the mismatch between many consumers' understanding of "recyclable" claims and some marketers' use of "recyclable" claims, we face a situation where some consumers are losing confidence in the validity of "recyclable" claims and in environmental marketing claims in general.

Guidance can help marketers better communicate the recyclability of products to consumers, and can help avoid a loss of consumer confidence in the validity of "recyclable" claims. We believe that communication will be most facilitated by guidance that helps to qualify "recyclable" claims, so that such claims reflect the availability of collection and use programs for the product, and provide information that the consumer can use to recycle the product.

Guidance can also address the problem created by marketers making "recyclable" claims for products which are recycled at very low rates, creating a situation where companies that make commonly "recyclable" products compete with companies that do not do so. EPA supports the efforts of companies which have taken concrete and productive steps to improve the recyclability of their products by using materials that are commonly collected for recycling, eliminating materials incompatible with recycling processes, and supporting the development of recycling infrastructure. We would like to see companies who have made changes or who have supported recycling reap the benefits of their efforts through increased sales and profits in the marketplace. Ideally, guidance would facilitate fair competition between marketers that would increase the use of readily "recyclable" products.

The following sections outline the approaches EPA is considering in formulating guidance for the use of "recyclable" claims.

A. Option 1: Minimum Recycling Rate and Recycling Rate Disclosure

This option has two elements. EPA would recommend that marketers promote the recyclability of a product only when (1) the product is recycled at a minimum percentage nationally, and (2) the product prominently discloses the national recovery rate for the material or product.

The minimum recycling percentage rate would be set by the Administrator. The minimum recycling percentage rate

could be set either at a high level to aggressively promote recycling or at a lower level to provide a minimum threshold to prevent trivial recyclable claims by marketers of products that are not widely recycled. The minimum recycling percentage rate could either be set on a material-by-material basis (e.g., aluminum should meet a 30% standard) or a product-by-product basis (aluminum cans should meet a 50% standard). EPA is requesting comment on the most appropriate method for setting minimum recycling percentage rates. We are also requesting comment on criteria appropriate for setting a minimum recycling percentage rate.

For products that meet the minimum percentage, the recycling rate would be disclosed in product labeling and advertising in a statement along with the recyclable claim. For example, the statement could read: "Recyclable. Glass containers are recycled at a 20% rate nationally." EPA would like commenters to provide information concerning the availability of reliable, current national recycling rates for recycled materials and the feasibility of using this information on product labeling and advertising in a timely manner. Also, what role should EPA or others play in overseeing the determination and use of such rates?

This option would help to meet EPA's objectives of improving communications concerning environmental marketing claims. The option helps to ensure that marketers do not make misleading "recyclable" claims, by establishing a minimum threshold before such a claim could be made. It would also provide consumers with comparative information on national recycling rates which could be used as a basis for choosing products, and help foster competition between marketers to increase the use of highly recycled materials in products.

EPA acknowledges that unless the recycling rate threshold was set at a very high level, this option would not discourage marketers from labeling or advertising their products as recyclable in some communities where the product or material is not collected. Another drawback to this option, similar to that described in the "recycled" options, would be the difficulty in establishing a commonly accepted, sound basis for determining the appropriate recycling rate standard for any given material, and the high cost to the Agency of setting the standard.

B. Option 2: Qualified Claims

"Recyclable" claims are often made based upon differing definitions of

recycling. "Recycle" as EPA would define it in section II of this notice, means the series of activities, including collection, separation, and processing, by which products or other materials are recovered from or otherwise diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion. Therefore, in order for a material to be considered fully "recyclable," it must be collected, separated, processed and used. If marketers were to link "recyclable" claims with information on access to collection and use programs, the linkage could eliminate much of the confusion relating to recyclability claims.

With this option, EPA would recommend that marketers make "recyclability" claims: (1) That do not lead consumers to assume that the product is recyclable everywhere; and (2) that provide consumers with information that helps them recycle the material. "Recyclable" claims meeting these criteria are claims that EPA considers to be "qualified."

An example of a qualified claim could be: "This bottle can be recycled in communities where collection facilities for colored HDPE bottles exist. For more information contact your local recycling coordinator." Examples of qualified claims currently exist in the marketplace. For example, a label on a plastic bottle claims: "This bottle is made with PETE. It is the same plastic used to make soft drink bottles and is the most commonly recycled plastic. If your community has a recycling program that collects all products with a [SPI code 1] symbol, please recycle this container. To get more information on how to encourage plastic recycling, write us at the following address:[Address]." Qualified claims help marketers communicate with consumers in a manner that would lead consumers interested in recycling products to take constructive steps to do so. The qualified claims could also avoid the current situation where "recyclable" claims often seem to have little meaning to many consumers because the claims appear to be nothing more than hollow advertising.

Use of qualified claims under this option would not, however, limit the claims to those marketers whose products are recycled at high rates. These claims, therefore, could be used by marketers of products that are recycled at very low rates and in a limited number of locations in the country. We see this as the major drawback to this option.

EPA is seeking comment on a number of issues related to this option. First of all, are the criteria we have set for a "qualified" claim appropriate and sufficient to provide useful information to consumers? What additional criteria, if any, should EPA include? Second, would use of these criteria reduce the number of misleading claims? Would they encourage recovery of recyclable materials?

C. Option 3: Qualified Claims and Disclosure of National Recycling Rate

This option would consist of two recommendations: marketers would make "qualified" claims, as described in Option 2, and also prominently disclose the national recycling rate of the product or material for which the claim of recyclability is being made. For example, a glass bottle could make the claim: "The bottle recycled in communities where collection facilities for colored glass bottles exist. For more information contact your local recycling coordinator. Glass bottles are recycled at a 20% rate nationally."

This option has all of the advantages of the previous option. The additional disclosure of the national recycling rate is designed to address the major concern we have with the previous option: Differentiating the claims of products commonly recycled from the claims of products that are not commonly recycled. While any marketer could make a qualified claim of recyclability under this option, it will encourage marketers who are considering making claims for a product that is minimally recycled to think twice about whether they want to make a claim that reveals how little of their product is actually recycled.

Aside from the issues related to the "qualified" claims and the disclosure of national recycling rate that we discussed in the previous options, EPA is seeking comment on whether a combination of these two options is appropriate and would accomplish EPA's objectives of helping marketers communicate the recyclability of products to consumers, avoiding a loss of consumer confidence in the validity of "recyclable" claims, and assisting companies who have made changes or who have supported recycling reap the benefits of their efforts through increased sales and profits in the marketplace.

D. Option 4: Minimum Recycling Rate, Qualified Claims, and Disclosure of National Recycling Rate

This option is a combination of major elements of Options 1 and 3: First, EPA would establish a minimum recycling

rate as described in Option 1. This minimum would be a relatively low level. Marketers would be encouraged not to make claims of recyclability for any products that did not meet this minimal level of recycling. Second, marketers whose products meet this recycling rate would be encouraged to meet the conditions outlined in Option 3.

This option would have the advantages of the previous option plus it would set a minimum threshold that would prevent the most trivial claims of recyclability from being made.

One disadvantage to this option is the difficulty that EPA could have in defining meaningful criteria to set a minimum recycling rate. We are requesting comment on the appropriate criteria for determining a minimum recycling rate in the context of this option. We are also requesting comment on this option in general, and in particular whether the use of several elements in the claim could be confusing to consumers or difficult for marketers to apply.

E. EPA's Preferred Option

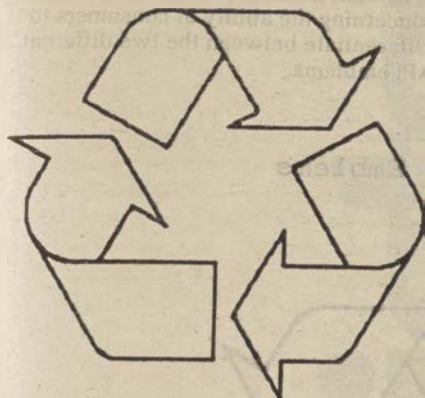
EPA's preferred option is Option 3: Qualified Claims and Disclosure of National Recycling Rate. We believe this option offers the best match between ease of implementation and meeting our objectives of improving communications of "recyclability," avoiding a loss of consumer confidence in the validity of "recyclable" claims, and assisting companies who have made changes or who have supported recycling reap the benefits of their efforts through increased sales and profits in the marketplace.

V. General Guidance

A. Use of Recycling Emblem

The familiar recycling emblem (See Figure 1) was developed in 1970 in a national contest conducted by a paper products manufacturer. After the contest the recycling emblem was placed in the public domain and is now commonly used by marketers to represent both recyclability and recycled content use. It is recognized by much of the public as relating generally to recycling. An immediately recognizable symbol like the recycling emblem can be a useful tool in drawing the attention of consumers to a product that contains recycled content or that is recyclable; however, more guidance on its proper use is needed in order to increase the effectiveness of its use and to ensure that consumers understand its meaning.

Figure 1: Recycling Emblem



The issue of when and how the recycling emblem should be used is being addressed by some States recommending that the emblem be used with recycled content and recyclable claims but the emblem be clearly identified to reflect whether it represents recycled content or recyclability. It is likely that more States will attempt to address this issue in the future. In order to provide a consistent national approach to the use of the recycling emblem, EPA is offering the following options for developing guidance. These options are offered as adjuncts to the guidance that EPA will develop for "recycled content" and "recyclable" claims. That is, EPA believes that the approach ultimately recommended for use of the recycling emblem should be used in conjunction with approaches ultimately recommended for the terms "recycled" and "recyclable," so that the emblem and surrounding message are viewed as a consistent claim providing necessary information.

1. Option 1: Limit Use of Recycling Emblem to Certain Recycling Claims

The use of the recycling emblem has expanded to environmental claims unrelated to the use of recycled content or recyclable materials. For example, some marketers have placed the recycling emblem on a package claiming "Environmentally friendly product and packaging," giving one the impression that the recycling emblem also signifies an overall "environmental goodness." While this practice is not yet widespread, we would not like to see it spread as it would dilute the meaning of the emblem. EPA is seeking comment on this position. Do commenters think that

this emblem should be used for other uses than signifying the use of recycled materials or recyclability?

Under this option, EPA would recommend that the use of the recycling emblem in product claims and advertising be restricted to claims involving the use of recycled content and recyclability. This option would limit the number of different messages that the recycling emblem would communicate to consumers, avoiding a situation where the emblem could be used for so many different environmental messages as to become virtually meaningless.

The recycling emblem is not used exclusively for environmental claims. For example, community recycling programs will often use the recycling emblem in brochures and advertising notifying the public of the time and location of recycling collection programs. Recycling collection companies use the recycling emblem on the sides of collection trucks. These uses of the recycling emblem are entirely appropriate, and we do not intend for the guidance to cover them.

Another use of the recycling emblem, albeit in a slightly modified form, is the Society of the Plastic Industry's rigid container plastic resin coding system. This coding system is meant to help differentiate between different resin types and encourage the recycling of plastic containers. Some form of the resin coding system is required by law in over 30 States. EPA does not intend that its guidance cover the use of the resin coding system, as long as the use of the coding is consistent with that of identification of resin and not an environmental claim. For example, a plastic bottle labeled with the code on the bottom of the bottle would not be covered under the guidance, but a plastic cup with the emblem displayed prominently on the side would be considered to be making an environmental claim, and the use of the emblem in that circumstance should be in accordance with EPA guidance.

EPA is seeking comment on whether other legitimate uses besides communicating "recycled content" and "recyclability" and those discussed above exist for the recycling emblem, what those uses are, and whether this option should be expanded to include those uses.

2. Option 2: Use American Paper Institute Guidance

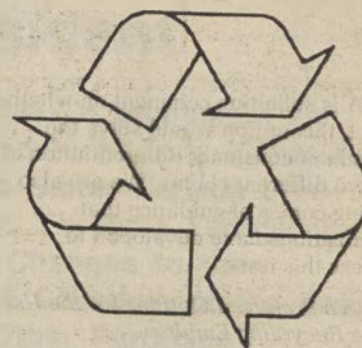
The American Paper Institute (API) distributes camera ready copy of the recycling emblem with the recommendation that manufacturers use

a version of the symbol consisting of solid arrows within a black circle to represent the use of recycled content (See Figure 2) and another version with the symbol appearing in outline form to signify recyclability. (See Figure 3.) With this option, EPA would recommend that marketers follow the API guidance and continue to use the two different versions of the recycling emblem.

Figure 2: API Recycled Content Emblem



Figure 3: API Recyclable Emblem



An advantage to adopting this option is that the guidance has been developed and used for a number of years, and we would be promoting consistency by not changing guidance and adding to the confusion. We must note, however, because the API guidance promotes the use of two nearly identical emblems that the guidance might not offer a solution to increasing consumer understanding of the recycling emblem. Consumers might not be readily able to recognize that one version of the emblem represents the use of recycled materials while the other represents recyclability.

EPA is soliciting comment on whether adopting the API guidance would

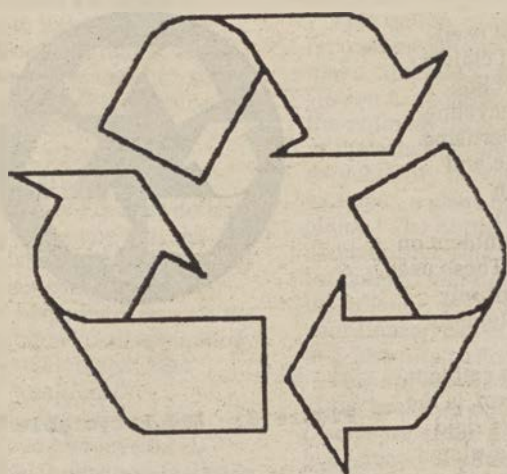
resolve the problems of consumer understanding of the meaning of the recycling emblem. EPA is also soliciting information that marketers might have concerning consumer understanding of the recycling emblem as currently used.

3. Option 3: Clearly Label the Recycling Emblem

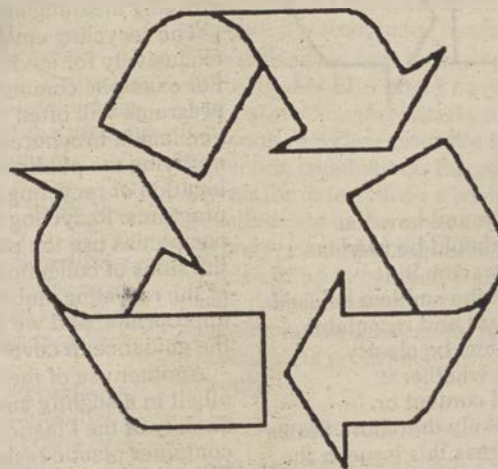
Under this option, EPA would recommend that marketers clearly label the emblem with "recycled content" or "recyclable," depending on the claim

they are making. An example of this can be seen in Figure 4. This option is an attempt to address the concerns we discussed in the previous section concerning the ability of consumers to differentiate between the two different API emblems.

Figure 4: Clearly Labeled Recycling Emblems



RECYCLED CONTENT



RECYCLABLE

EPA is soliciting comment on whether, in fact, this option would solve the problem of consumer differentiation of the two different claims. We are also seeking copies of guidance that organizations have developed to address this issue.

4. EPA's Preferred Options for the Use of the Recycling Emblem

EPA's currently preferred options for the use of the recycling emblem are a combination of Options 1 and 3. Our preference would be that marketers use the recycling emblem only for "recycled content" or "recyclable" claims, and that they clearly label the emblem as

pertaining to "recycled content" or "recyclable" claims.

This option will help to promote consumer understanding of the meaning of the recycling emblem by encouraging that the use of the recycling emblem be limited to recycling claims, and by helping to eliminate the confusion that consumers are facing in determining the difference between the "recycled content" and "recyclable" emblems.

B. Separating Claims of Packaging and Product

The labeling and advertising practices of some marketers do not always differentiate between claims made about the packaging and the product

contained within the package. Because of this, consumers are not able to tell when recycled content claims refer to the packaging and when they refer to the product. EPA is considering recommending that marketers clearly differentiate between recycled content and the recyclability claims made about the product and the packaging in order to help reduce consumer confusion. We request comment on this issue as well.

Dated: September 22, 1991.

Don R. Clay,

Assistant Administrator, Office of Solid Waste and Emergency Response.

[FR Doc. 91-23709 Filed 10-1-91; 8:45 am]

BILLING CODE 6560-50-M