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Notices

DEPARTMENT OF TRANSPORTATION (DOT)

Pipeline and Hazardous Materials Safety Administration (PHMSA)

[Docket No. PHMSA-2006-26275]

Receipt of Petition for Rulemaking Classification of Polyurethane Foam and Certain Finished Products Containing Polyurethane Foam as Hazardous Materials

72 FR 15184

DATE: Friday, March 30, 2007

ACTION: Notice.

SUMMARY: This Notice solicits comments on the merits of a petition for rulemaking filed by the National Association of State Fire Marshals (NASFM). The NASFM petitioned PHMSA to classify Polyurethane Foam and certain finished products containing Polyurethane Foam (PU) as hazardous materials in transportation in commerce, as a matter of safety for emergency responders and the public.

DATES: Comments must be received by June 28, 2007.

ADDRESSES: *Written comments:* You may submit comments on this Notice identified by the docket number (PHMSA-2006-26275) by any of the following methods:

. *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the online instructions for submitting comments.

. *Web site:* <http://dms.dot.gov>. Follow the instructions for submitting comments on the DOT electronic docket site.

. *Fax:* 1-202-493-2251.

. *Mail:* Docket Management System, U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, PL-402, Washington, DC 20590-0001.

. *Hand Delivery:* PL-402 on the Plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m. Monday through Friday, except Federal holidays.

Instructions: All submissions must include the agency name and docket number for this notice. Internet users may access comments received by DOT at <http://dms.dot.gov>. Note that comments received may be posted without change to <http://dms.dot.gov> including any personal information provided. If you believe your comments contain trade secrets or confidential commercial information, those comments or relevant portions of those comments should be appropriately marked. PHMSA procedures in 49 CFR part 105 establish a mechanism by which commenters may request confidentiality.

FOR FURTHER INFORMATION CONTACT: Helen Engrum or Susan Gorsky, Office of Hazardous Materials Standards (202) 366-8553, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001.

SUPPLEMENTARY INFORMATION: In a letter dated October 31, 2006, the National Association of State Fire Marshals (NASFM) submitted a petition for rulemaking to the U.S. Department of Transportation (DOT) through the Pipeline and Hazardous Materials Safety Administration (PHMSA) under the provisions of 49 CFR 106.31. The NASFM requested that the Hazardous Materials Regulations (HMR; 49 CFR parts 171-180) be amended to classify Polyurethane (PU) Foam and certain finished products containing PU as a hazardous material for purposes of transportation in commerce. The NASFM is made up of senior-level public safety officials from the 50 States and the District of Columbia. The NASFM petition was received and acknowledged by PHMSA and assigned petition number P-1491; Docket No. PHMSA-2006-26275.

Issuance of this Notice does not constitute a decision by PHMSA to undertake a rulemaking action on the substance of the petition. This Notice is issued solely to obtain comments on the merits of the petition to assist PHMSA in making a decision of whether to proceed with a rulemaking. Of particular interest are substantive comments that address the following items: (1) Estimated incremental costs or savings; (2) Anticipated safety benefits; (3) Estimated burden hours associated with the proposals related to information collection; (4) Impact on small businesses; and (5) Impact on the national environment.

II. Petition P-1491 Is Quoted as Follows

As a matter of safety for emergency responders and the public, the National Association of Fire Marshals petitions the U.S. Department of Transportation (DOT), through the Pipeline & Hazardous Materials Safety Administration (PHMSA), to classify polyurethane (PU) foam and certain finished products containing it as a hazardous material for purposes of transportation. NASFM consists of senior-level public safety officials from the 50 states and District of Columbia.

The petitioners regard this proposal as critical to the safety of emergency responders and the public they are sworn to protect. The safety of emergency responders begins with information--at minimum, responders have the absolute right to know when they are dealing with hazardous materials, so they may take special precautions at incidents. The petitioners' interest extends to ensuring that hazardous materials are used, stored and transported in safe ways. Regulations exist across agencies that regulate the use and storage of PU foam, but a gap exists in ensuring the safe transportation of this hazardous material. Because it is not officially classified as a hazardous material for purposes of transportation, the safety of emergency responders and the public is compromised.

The U.S. Department of Transportation's system of hazardous materials transportation placarding is critical to the safety of emergency responders and the public. Placards typically are the one source of information immediately available to responders as they determine the safest and most efficient means of suppressing fires and of rescuing persons trapped in vehicles. Placards provide information essential to knowing how fast a fire might spread, how difficult it might be to suppress, and how large and dangerous it may become.

When hazardous materials are not properly placarded, the consequences to emergency responders could be injury or death. Obviously some shippers and transporters choose to violate the law by failing to properly placard when placarding is required. However, the DOT does not require placarding with some well-recognized hazardous materials. Such is the case with most grades of rigid and flexible PU foam and many of the finished products containing this highly flammable solid.

PU foam, whether in bulk shipments or in finished products, is explicitly listed and controlled as a hazardous material in all phases of manufacturing, construction and more recently, consumer applications. As such, records pertaining to the hazardous nature of PU foam already are kept and reports are routinely issued by the producers of these materials. Ironically, when the risks are least manageable--in transportation--PU foam is not officially considered hazardous. This petition aims to correct this inadvertent oversight.

Whether experienced in the real world or observed under scientific conditions, PU foam is a hazardous material. A significant [*15185] and unambiguous body of scientific literature underscores the poor fire performance of these materials and products, and a preliminary review of the fire incident data found numerous transportation incidents where PU foam and such products as upholstered furniture and mattresses provided the fuel load for significant fires. These are

not new observations. Smoldering and small open flame ignitions of finished products containing PU foam have long been the number-one cause of death by fire in the home.

Proposed Rulemaking Procedure

NASFM proposes the following procedure based on its understanding of the PHMSA rulemaking process: Issue an Interim Final Rule designating bulk shipments of Polyurethane (PU) Foam as a Class 9 hazardous material. As part of this Interim Final Rule

Phase I

- . Assign a North American Identification number to PU foam.
- . Except shippers/carriers from requiring shipping papers, employee training, specific packaging requirements, and placarding.
- . Require carriers to display Orange Panels with the identification number to identify the presence of PU foam for initial responders.
- . Require transportation incidents involving PU foam fires to be reported to PHMSA.
- . Publish a Safety Alert identifying measures initial responders can take to protect themselves and the general public during this initial response phase of the incident involving PU foam.
- . Incorporate the measures published in the Safety Alert into the 2008 Emergency Response Guidebook (ERG).

Cotton can be used as an example of how PU can be initially regulated. The following is recommended for inclusion in the Hazardous Materials Table (49 CFR 172101):

Column 1--Symbols	D (Domestic).
Column 2--HM description and proper shipping name	Polyurethane Foam.
Column 3--Hazard Class or Division	9.
Column 4--Identification Number	NA XXXX (to be assigned by PHMSA).
Column 5--Packing Group	Leave blank.
Column 6--Label Codes	None.
Column 7--Special Provisions	To be determined by PHMSA.
Column 8--Packaging (8A, 8B, and 8C)	None.
Column 9--Packaging Limitations	To be determined by PHMSA and the Federal Aviation Administration.
Column 10--Vessel Stowage	To be determined by PHMSA and the U.S. Coast Guard.

This should not be considered a significant rulemaking, because there are a limited number of carriers transporting bulk PU foam.

Phase IIA

Initiate domestic rulemaking to finalize Interim Final Rule and explore the need for additional regulatory oversight of products manufactured using PU foam through the issuance of a Notice of Proposed Rulemaking.

Phase IIB

Introduce PU foam as a proposed work item at the 30th session of the Transport of Dangerous Goods Subcommittee, December 4-12 2006 in Geneva, Switzerland.

Phase IIA and IIB can be conducted simultaneously.

DOT has the authority to classify PU foam as a hazardous material.

The precise classification of PU foam is a legalistic matter for consideration by regulators, and may require special treatment given the unusual properties of these materials. For example, PU foam becomes highly flammable as it moves rapidly from solid to liquid to vapor states. In that way, it is similar to gasoline, which becomes hazardous as it moves from a liquid to a vapor. Gasoline is a flammable liquid when, in scientific terms, it is a flammable vapor. Another unique characteristic is that, unlike most hazardous materials, PU foam becomes dangerous as it becomes lighter in weight, for a simple reason: low density PU foam contains more air to feed a fire and more surfaces to ignite.

Manufacturers of PU foam describe these materials as "combustible solids" on the material safety data sheets provided to customers and regulators. However, PU foam does not fit neatly into the combustible solids category. The prescribed test methods used with combustible solids are irrelevant to the real-world fire hazards posed by PU foam, because PU foams possess fire performance and chemical properties more comparable to well-established hazardous materials such as gasoline that react in liquid and vapor phases. n1 A fire hazard of this significance may not legally be ignored simply because of the inflexibility of the rating system.

n1 Langevin, Kennedy, and Conyers. United States. Cong. House. *Foam Fire Safety Act*. 109th Cong., 1st sess. HR 943. 17 Feb. 2005. 8 Sept. 2006 <http://thomas.loc.gov/cgi-bin/query/z?c109:H.R.943.IH>:

Rather than assigning PU foam to Class 4 as a flammable solid, NASFM recommends that it be placed within Class 9, which exists for unusual but clearly hazardous materials and products ranging from molten asphalt to life preservers containing pressurized containers. The exact classification may not matter as much as the fact that the classification will subject this material to tighter controls in transport, thus helping to ensure the safety of emergency responders and the public.

Classification of PU foam as a hazardous material for transportation is necessary as a matter of consistency of policies across various agencies that define the safe use of hazardous materials.

Those responsible for safety in residential, manufacturing and storage occupancies already regard PU foam as a hazardous material because of its poor fire performance.

. Manufacturers' Materials Safety Data Sheets and warning labels on the bulk shipments note the flammability characteristics of PU foam. Manufacturers recognize that PU foam poses unique fire and explosion hazards. A typical label on PU foam sold in bulk says:

If ignited, foam can produce rapid flame spread, intense heat, dense black smoke and toxic gases. Material can melt into a burning liquid that can drip and flow. Accumulated polyurethane dust can be readily ignited and presents a fire risk. High concentrations of dust in the air can explode if exposed to a flame, spark, or other ignition sources. n2

n2 "Material Safety Data Sheet." *Foamex*. 17 July 2002. Foamex International, Inc. 8 Sept. 2006. <http://www.foamex.com/ftpWs/MSDS%20Flexible%20Polyurethane%20Foam%20-%20English.pdf#search=%22OSHA%20polyurethane%20flexible%20foam%20fire%22>.

. The National Fire Protection Association standard NFPA 13's hazard classification system lists PU foam as a Group A Plastic. This now requires increased use of automatic fire sprinklers, imposes limits on storage requirements and is strictly enforced by state and local fire code enforcement officials.

. Starting in July 2007, the U.S. Consumer Product Safety Commission (CPSC) will begin enforcement of mattress fire safety requirements that effectively isolate PU foam in residential fires. This action has the benefit of significantly reducing the risk of fires when mattresses are being transported, in addition to preventing the approximately 400 mattress fires that occur every year. n3 Even if the CPSC proposes fire safety requirements for upholstered furniture, there is some question whether these standards will be adequate to address the issues discussed here.

n3 Chowdbury, Risiana, Michael Greene, David Miller, and Linda Smith. *1999 Revised--2002 Residential Fire Loss Estimates*. U.S. Consumer Product Safety Commission. Washington, DC, 2005.

The use of PU foam is regarded as hazardous in some transportation modes.

. The Coast Guard has issued warnings on the fire hazard of polyurethane insulation and other organic foams on vessels. n4

n4 Bell, Henry H. *Navigation and Vessel Inspection Circular No. 8-80*. United States Coast Guard. Washington, DC: U.S. Coast Guard, 1980. 8 Sept 2006. <http://www.uscg.mil/hq/gm/nvic/8-80/n8-80.pdf#search=%22Navigation%20and%20Vessel%20Inspection%20Circular%20No.%208-80%22> [*15186]

. The Occupational Safety and Health Administration has issued warnings about PU foam in marine applications saying,

Rigid polyurethane and polyisocyanurate foams will, when ignited, burn rapidly and produce intense heat, dense smoke and gases which are irritating, flammable and/or toxic. As with other organic materials the most significant gas is usually carbon monoxide. Thermal decomposition products from PU foam consist mainly of carbon monoxide, benzene, toluene, oxides of nitrogen, hydrogen cyanide, acetaldehyde, acetone, propene, carbon dioxide, alkenes and water vapor. n5

n5 Baier, Edward J. "The Fire Hazard of Polyurethane and Other Organic Foam Insulation Aboard Ships and in Construction." *OSHA Hazard Information Bulletins*. 10 May 1989. U.S. Department of Labor. 8 Sept. 2006. <http://www.osha.gov/dts/hib/hibdata/hib19890510.html>

. The Federal Aviation Administration requires that all seat cushions and padding be self-extinguishing. n6

n6 United States. Federal Aviation Administration. *Electronic Code of Federal Regulations (E-CFR) Title 14: Aeronautics and Space Part 23*. 25 Sept. 2006 <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=06a589895da22315eabb8c077bed3ded&rgn=div8&view=text&node=14:1.0.1.3.10.4.86.72&idno=14>

. The National Transportation Safety Board issued a recommendation on the use of PU foam in maritime applications in 1995 saying,

The Safety Board believes that NFPA [the National Fire Protection Association] and the Coast Guard should establish, in cooperation, a national marine fire safety standard on the safe use of RPU [Rigid Polyurethane] foam and other organic combustible material insulation on vessels. n7

n7 Hall, Jim. "Safety Recommendation in Reply to M-95-24 and -25." 17 July 1995. Washington, DC: National Transportation Safety Board, 1995. <http://www.nts.gov/recs/letters/1995/M95-24-25.pdf#search=%22NTSB%20safety%20recommendation%20M-95-24%22>.

The current classifications of PU foam as a hazardous material are supported by a large and unambiguous body of technical and scientific literature. A bibliography is in the appendix to this petition.

The petitioners also ask PHMSA to review the results of recent large-scale fire tests conducted on behalf of the European Union, which demonstrate clearly the danger that PU foam presents during transport. The SP Swedish National Testing and Research Institute conducted four full-scale tests involving truck fires in the Runehamar tunnel in Norway in September 2003. In one test a truck was loaded with furniture and in another, a truck was loaded with mattresses and wooden pallets. In both tests, the heat release rates (HRR), or measure of the fire's intensity, reached levels that are normally expected only from hazardous materials. n8 In fact, temperatures in the tunnel reached those comparable to tunnel tests involving petroleum products. n9

n8 Lonnemark, Anders. *On the Characteristics of Fires in Tunnels*. Lund, Sweden: Tryckeriet I E-Huset, Lund University, 2005.

n9 Ibid., 524.

PHMSA is well aware of the difficulties of securing data from hazardous materials incidents. Because PU foam is not classified as a hazardous material for transportation, it might follow that finding examples of incidents would be that much more difficult. But with little effort, NASFM has found numerous examples. Here are two:

. On August 28, 2006, a furniture delivery truck caught fire on Interstate 5 near San Diego. The semi-truck veered off the road, hitting a guardrail before the truck burst into thick flames and smoke. According to the California Highway Patrol, the semi-truck was transporting furniture and mattresses that quickly went up in flames. The incident began around 4 pm during the evening rush hour, and the fire was still burning at 5:30 pm; the incident closed northbound lanes of I-5 well into the evening and backed up traffic for miles.

. A May 7, 2005, fire in Navarro County, Texas, resulted in the loss of a reported \$ 10,500 truck where an upholstered sofa and chair were among the items first ignited.

As part of a rulemaking, NASFM is prepared to work with PHMSA to undertake a systematic review of incident records where PU foam contributed to motor carrier fires. These fires may be ignited accidentally because of collisions or friction during transport, electrical faults, careless smoking, or they may be ignited intentionally. Regardless of ignition source, the ensuing fires present unacceptable risks to emergency responders.

NASFM is especially interested in incidents that may involve the GMC Savana cargo van that is recommended for furniture deliveries by the American Home Furnishings Alliance, yet has been the subject of two DOT supervised recalls because of potential fire hazards related to defective brakes and electrical components. n10 This vehicle has been the subject of at least 10 recalls overall; some of these defects have the potential to cause the vehicle to crash, further increasing the risk of vehicle fire.

n10 "2003 GMC Savana Recalls & Problems." *Internet Auto Guide*. 25 Sept. 2006.
<http://www.internetautoguide.com/auto-recalls/67-int/2003/gmc/savana/2500/index.html>.

Exemptions are possible for fire-resistant PU foam and finished products containing PU foam that meet certain flammability standards.

The petitioners believe it is reasonable to exempt certain finished products from this rule. For example, mattresses sold after July 1, 2007, in the United States must comply with CPSC requirements that effectively shield PU foam from ignition sources. Much as properly packaged individual containers of fingernail polish remover are exempt while bulk shipments are not, this new fire safety standard may exempt compliant mattresses from classification as a hazardous material. Some upholstered furniture used by institutions such as health care facilities, prisons and hotels meet the State of California's most stringent fire safety requirements for institutional use, and may be eligible for exemption. Certain grades of high density, fire resistant PU foams as currently specified by the State of California also may be candidates for exemption. The full text of these requirements can be found in the appendices to this document.

But while some exemptions may be justified, the fact remains that most bulk shipments and many finished products containing PU foam are formally listed and treated as hazardous materials in factories, warehouses, retail and residential occupancies by their manufacturers, users, and regulators. These materials and products do not suddenly become less hazardous when being transported among these places. In fact, given the uncertainties of traffic, road conditions, driver behavior and condition of the vehicle, the risks are greater during transport, especially to emergency responders who may need to negotiate treacherous conditions such as a steep, muddy slope to rescue a driver from a burning truck full of PU foam.

The benefits of changing the classification of PU foam far outweigh the costs.

Given the similarities of PU foam's fire performance to that of gasoline and other classified hazardous materials, NASFM believes that benefits of the hazardous materials classification proposed here may be comparable to these existing classified materials. Additionally, because PU foam is already classified as hazardous across numerous other agencies, there will be no significant incremental costs associated with the proposed action.

The social and economic costs associated with the loss of a roadway tunnel are well understood. Serious fires involving PU foam on roads, on bridges, in garages or in tunnels pose a significant danger to the health and safety of persons, often result in the total loss of involved vehicles and can cause significant structural damage to roads, tunnels or surrounding buildings. The March 1999 fire in the Mont Blanc tunnel between France and Italy tragically demonstrated the disastrous results of a fire involving materials classified as non-hazardous: 39 people died during the two-day fire, and the tunnel was closed for three years following the tragedy. The cost to the Italian economy alone due to direct damage and lost revenues associated with the tunnel during the three-year closure is estimated at \$ 215 billion. n11 In addition to injuries and fatalities that result from catastrophic transportation incidents, the social cost to the surrounding region cannot be ignored. The furniture truck fire on I-5 backed up traffic for miles and delayed hundreds of thousands of people in traffic for hours. As demonstrated by the SP Swedish National Testing and Research Institute Runehamar tunnel fire tests, a truck containing quantities of polyurethane--even when in finished products--is capable of causing this sort of catastrophic fire, which may result in numerous injuries and fatalities and require years and billions of dollars to repair.

n11 "EU Tunnel Fire Safety Action." Tunnels & Tunneling International (2003). 8 Sept. 2006.
<http://www.etnfit.net/unprotected-documents/EU%20Action%20-%20Tunnel%20Fire%20Safety%20-%20TT%20paper.pdf#search=%22Mont%20Blanc%20tunnel%20fire%20cost%22>.

. The petitioners believe there are no direct effects, including preemption effects under section 5125 of Federal hazardous materials transportation law, of our proposed [*15187] action on States, on the relationship between the Federal government and the States, and on the distribution of power and responsibilities among the various levels of government.

The petitioners regard the actions proposed here as being fully supportive of the States' interests in the safety of its citizens and emergency responders.

. The regulatory burden on small businesses, small organizations, small governmental jurisdictions and Indian tribes will be minimal.

Small businesses, small organizations, small governmental jurisdictions, and Indian tribes now comply with safety requirements for PU foam enforced by state and local officials in manufacturing, storage, retail and residential occupancies. Classifying PU foam as a hazardous material for transportation may add some minimal costs related to placarding, packaging and the selection of routes.

. Recordkeeping and reporting costs to manufacturers and transporters will be minimal.

This action is unlikely to add significantly to existing record keeping and reporting burdens. The manufacturers and users of PU foam already regard these materials as "combustible solids" and accordingly maintain and share data with their customers and regulators.

. Classification of PU foam as a hazardous material will not have any adverse environmental effects but may have significant positive effects on the natural environment. Additionally, this action would significantly reduce the costs borne by society for the unsafe transportation of this hazardous cargo.

Possible environmental effects from the reclassification of PU foam are:

- . Increased emissions resulting from longer routes needed to transport PU foam;
- . Decreased emissions of the noxious by products of PU fires like hydrogen cyanide, hydrochloric gas and carbon monoxide because of increased precautions taken to reduce the number of these fires.

Societal impacts from the reclassification of PU foam are readily apparent. Fewer PU foam fires directly benefit society through decreased injuries, fatalities and property damage.

Therefore, we respectfully ask the DOT to use its clear authority to protect emergency responders and the public they are sworn to serve, by accepting this petition and moving forward expeditiously with enforcement.

III. Purpose of the Notice

The purpose of this Notice is to solicit comments on the merits of a petition for rulemaking filed by the National Association of State Fire Marshals requesting classification of Polyurethane Foam (PU) and certain finished products containing PU as hazardous materials under the Hazardous Materials Regulations. The safety implications of the proposals in the petition will be given careful considerations as we go through the process of determining whether regulatory action is needed.

Because of the many attachments to petition P-1491 (*e.g.*, MSDS, appendices, bibliography, and other information) submitted with this petition, we encourage interested parties to access the Web site: <http://dms.dot.gov> to review the petition and other documentation submitted with the petition.

Issued in Washington, DC, on March 27, 2007.

Robert A. Richard,

Deputy Associate Administrator for Hazardous Materials Safety.

72 FR 15184, *

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