



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

OCT 15 2019

Anthony P. Cellucci
Director, Transportation Compliance
Clean Harbors Environmental Services, Inc.
42 Longwater Drive
Norwell, MA 02061-9149

Reference No. 09-0013R

Dear Mr. Cellucci:

The Pipeline and Hazardous Materials Safety Administration is clarifying this previously issued letter of interpretation based on further review. In your November 14, 2007, letter, you had requested clarification of the Hazardous Material Regulations (HMR; 49 CFR Parts 171-180) pertaining to the classification of explosives. Specifically, you requested clarification on when an approval is needed for a waste stream containing a small amount of a Class 1 (explosive) material. You also asked if there is a threshold upon which an assumption may be made by the shipper that the material meets the definition of another hazard class or does not meet the definition of a hazardous material.

Your letter provided two scenarios. In the first, a customer manufactures Trinitrotrimethylenetriamine (RDX) by incorporating the material into a solution of isopropanol and water in order to regulate the particle size. The explosive material is then removed from the isopropanol/water/RDX solution in a rotary evaporation procedure. The resultant waste material consists of a solution that contains 4.5% water, 93.7% isopropanol, 1.73% bis(2ethylhexyl) adipate (a non- DOT regulated plasticizer), .07% RDX and a non-detectable amount of cyclotetramethylenetetramine (HMX). In the second, a remediation project is conducted in which contaminated soils that contain trace amounts of RDX and/or HMX are excavated for disposal at a licensed waste management facility.

A “new explosive” is an explosive produced by a person who has not previously produced that explosive, or has previously produced that explosive but has made a change in the formulation, design, or process so as to alter any of the properties of the explosive. The term “formulation” as used in the definition of a “new explosive” applies to the entire mixture and not just the explosive components. An explosive is considered “not a new explosive” if an agency listed in paragraph (b) of § 173.56 (e.g., Explosive Test Lab) has determined and confirmed in writing to the Associate Administrator that there are no significant differences in hazard characteristics from the explosive previously approved (see § 173.56(a)).

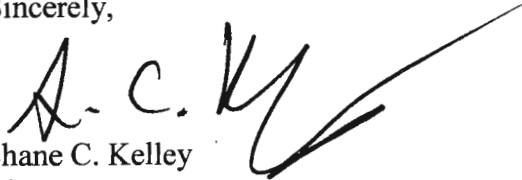
All new compositions containing any amount of explosive material must be classed and approved by DOT, including compositions of diluted (desensitized) explosives or explosives combined or contaminated with other materials. In our original response of April 8, 2009, we stated that an approved explosive that has been mixed with non-explosive or non-hazardous materials may be considered a “new explosive” if the change in formulation increases its sensitivity toward initiation or energetic content. Following review, we wanted to clarify that determination of a “new explosive” is not limited to an increase in sensitivity nor limited to a change in formulation only, but rather any change in formulation, design, or process must be examined to determine whether the change altered any of the properties of the explosive. [Emphasis added]. This examination must be carried out by an agency listed in and in accordance with § 173.56(b) (e.g., Explosive Test Lab). The agency may either determine that the new formulation does not have significant differences in hazard characteristics and is therefore “not a new explosive” in accordance with § 173.56(a)(2) when compared to the previously approved formulation, or they may make a class recommendation as a “new explosive.”

Our original response of April 8, 2009, also stated that an approved explosive that is to be discarded as a waste because it is off-spec would be a “new explosive” if the change in formulation that causes the material to be off-spec would increase the sensitivity toward initiation or energetic content of the explosive. Although this is accurate, we want to reiterate that all changes must be examined to determine whether the properties have been altered (see above for additional explanation regarding determination of “not a new explosive” or “new explosive”) and that this may not be self-determined but must be determined in accordance with § 173.56(b). Further, and as detailed in our original response of April 8, 2009, if the explosives are mixed with filters, rags, dirt, or other material to be transported as waste, the waste is a “new explosive” and must be approved in accordance with § 173.56(b).

Lastly, in accordance with § 173.56(i), if experience or other data indicate that the hazard of a material or a device containing an explosive composition is greater or less than indicated according to the definition and criteria specified in §§ 173.50, 173.56 and 173.58, the Associate Administrator may specify a classification or except the material or device from the requirements of the HMR.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,


Shane C. Kelley
Director,
Standards and Rulemaking Division



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42 Longwater Drive
P.O. Box 9149
Norwell, MA 02061-9149
781.792.5000
800.282.0058
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Engelum
Leary
§ 173.56
Explosives
09-0013

Via Electronic Mail

November 14, 2007

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Special Permits and Approvals
East Building, 2nd Floor
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: Request for Clarification – New Explosive Determination

Dear Sir or Madam:

Clean Harbors Environmental Services, Inc. provides a wide range of environmental services to our customer base in North America. We provide transportation and disposal capabilities for a wide range of hazardous, solid and special wastes through an internal network of fully licensed waste management facilities. In addition, we are a licensed hazardous waste transporter in the United States and Canada.

In the course of providing safe, compliant and economical solutions to our customer base, we have encountered situations where a known explosive compound is a component of a waste stream that a shipper is attempting to dispose of at a licensed waste management facility. Below, I have outlined two (2) separate examples of current projects where the regulations and letters of interpretations found on the DOT's website appear to indicate that the material in question would need to be approved in compliance with 49 CFR 173.56 "New Explosives – definitions and procedures for classifications and approval". The purpose of this letter is to obtain clarification from your organization as to the requirement to follow these procedures as our customers do not agree that the DOT intended to regulate and/or approve individual waste shipments.

EXAMPLE 1

A customer manufactures Trinitrotrimethylenetriamine (RDX) by incorporating his material into a solution of isopropanol and water in order to regulate the particle size. The explosive material is then removed from the isopropanol/water/RDX solution via a rotary evaporation procedure. The resultant waste material then consists of a solution that contains 4.5 % water, 93.7% isopropanol, 1.73%



US Department of Transportation

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November 14, 2007

bis(2ethylhexyl) adipate (a non DOT regulated plasticizer), .07% RDX and a non detectable amount of cyclotetramethylenetetramine (HMX).

In this example, would the DOT consider this to be a new formulation requiring testing to either determine that a new explosive exists and needs to be classed and approved for shipment or that it is not an explosive and can be classified and shipped as a Class 3 flammable liquid for disposal?

EXAMPLE 2

A remediation project is conducted in which contaminated soils are excavated that contain trace amounts of RDX and/or HMX. This soil is destined for disposal at a licensed waste management facility. Would an approval process need to be initiated for this waste stream as a new explosive because it is no longer in the same state as when it was manufactured? Is there a threshold at which an assumption could be made whereby the material could be re classed as either a non regulated material or an alternate hazard class?

In summary, I am requesting clarification when compliance with 49 CFR 173.56 is mandatory and when a waste material would not need to be subject to this process. I have included a copy of the letter of interpretation that I review from the DOT whose applicability is being challenged by several of our customers.

Your attention and consideration with this request is very much appreciated. If additional information is required please contact me at (781) 792-5760.

Sincerely,

Anthony P. Cellucci
Director, Transportation Compliance

Cc: File



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Ave, S.E.
Washington, D.C. 20590

APR -8 2009

Mr. Anthony P. Cellucci
Director, Transportation Compliance
Clean Harbors Environmental Services, Inc.
42 Longwater Drive
Norwell, MA 02061-9149

Ref. No.: 09-0013

Dear Mr. Cellucci:

This responds to your electronic mail requesting clarification of the Hazardous Material Regulations (HMR; 49 CFR Parts 171-180) pertaining to the classification of explosives. Specifically, you request clarification on when an approval is needed for a waste stream containing a small amount of a Class 1 (explosive) material. You also ask if there is a threshold upon which an assumption may be made by the shipper that the material meets the definition of another hazard class or does not meet the definition of a hazardous material.

Your email provides two scenarios. In the first, a customer manufactures Trinitrotrimethylenetriamine (RDX) by incorporating the material into a solution of isopropanol and water in order to regulate the particle size. The explosive material is then removed from the isopropanol/water/RDX solution in a rotary evaporation procedure. The resultant waste material consists of a solution that contains 4.5% water, 93.7% isopropanol, 1.73% bis(2ethylhexyl) adipate (a non- DOT regulated plasticizer), .07% RDX and a non-detectable amount of cyclotetramethylenetetramine (HMX). In the second, a remediation project is conducted in which contaminated soils that contain trace amounts of RDX and/or HMX are excavated for disposal at a licensed waste management facility.

A new explosive is an explosive produced by a person who has not previously produced that explosive, or has previously produced that explosive but has made a change in the formulation, design, or process so as to alter any of the properties of the explosive. The term "formulation" as used in the definition of a new explosive applies to the entire mixture and not just the explosive components. An explosive is not considered a "new explosive" if an agency listed in paragraph (b) of §173.56 has determined and confirmed in writing to the Associate Administrator that there are no significant differences in hazard characteristics from the explosive previously approved (see 173.56(a)).

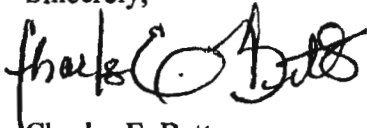
All new compositions containing any amount of explosive material must be classed and approved by DOT, including compositions of diluted (desensitized) explosives or explosives

combined or contaminated with other materials. An approved explosive that has been mixed with non-explosive or non-hazardous materials may be considered a new explosive if the change in formulation increases its sensitivity toward initiation or energetic content. An approved explosive that is to be discarded as a waste because it is off-spec would be a new explosive if the change in formulation that causes the material to be off-spec would increase the sensitivity toward initiation or energetic content of the explosive. Therefore, if the explosive properties of an approved explosive are increased after being mixed with filters, rags, dirt, or other material, then the explosive produced is a new explosive and must be approved in accordance with §173.56(b).

In accordance with §173.56(i), if experience or other data indicate that the hazard of a material or a device containing an explosive composition is greater or less than indicated according to the definition and criteria specified in §§173.50, 173.56 and 173.58, the Associate Administrator may specify a classification or except the material or device from the requirements of the HMR.

I hope this information is helpful. If we can be of further assistance, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles E. Betts". The signature is written in a cursive style with a large initial "C" and "B".

Charles E. Betts
Chief, Standards Development
Office of Hazardous Materials Standards

APR - 8 2009

Mr. Anthony P. Cellucci
Director, Transportation Compliance
Clean Harbors Environmental Services, Inc.
42 Longwater Drive
Norwell, MA 02061-9149

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All new compositions containing any amount of explosive material must be classed and approved by DOT, including compositions of diluted (desensitized) explosives or explosives

CONCURRENCES		
RTG SYMBOL	PHH-11	
INITIALS/SIG.	RJE	
DATE	4/2/09	
RTG SYMBOL	PHH-21	
INITIALS/SIG.	S. Watson	
DATE	04/02/09	
RTG SYMBOL	PHH-21	
INITIALS/SIG.	e. Ke	
DATE	4/6/09	
RTG SYMBOL	PHH-10	
INITIALS/SIG.	S	
DATE	4-7-09	
RTG SYMBOL	PHH-11	
INITIALS/SIG.	LGB	
DATE	4/7/09	
RTG SYMBOL		
INITIALS/SIG.		
DATE		
RTG SYMBOL		
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DATE		

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Charles E. Betts
Chief, Standards Development
Office of Hazardous Materials Standards