

June 27, 2019



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 8451
(FORTY-FIRST REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of not more than 25 grams of solid explosive or pyrotechnic material, including waste containing explosives, that has energy density not greater than that of pentaerythritol tetranitrate (PETN), as well as specific explosive article types as outlined in paragraph 7.e., classed as Division 1.4E, when packed in a special shipping container. This special permit provides no relief from the Hazardous Materials Regulations (HMR) or the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Good by Air (ICAO Technical Instructions) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
 - d. This special permit serves as a "Competent Authority Approval" as defined in 49 CFR § 107.1 and as an "approval" under Special Provision A62 and Packing Instruction 101 of the ICAO Technical Instructions.
 - e. For international shipments, see Paragraph 8.c.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180 and the ICAO TI.

Tracking Number: 2019044224

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.320 in that the EX number need not be marked on the package, §§ 173.54(a), 173.56(b), 173.57 and 173.58 in that a new explosive need not be examined and tested in accordance with the requirements of these sections, § 173.54(j) in that explosives forbidden in the Hazardous Materials Table may be transported, and § 173.60 in that alternative packaging is authorized.
5. BASIS: This special permit is based on the responses to the Pipeline and Hazardous Materials Safety Administration's (PHMSA) show cause letter issued under § 107.121 initiated on December 1, 2017 and the request for additional information dated October 31, 2018.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous materials description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Articles, explosive, n.o.s. (*) ¹	1.4E	UN0471	N/A

* Technical name of material being shipped

1 - Only solid explosives are authorized.

7. SAFETY CONTROL MEASURES:
- a. Inner packaging must be:
- (1) A 4-inch X 14-inch Schedule 80 seamless steel pipe nipple closed at both ends with 4-inch diameter forged steel end caps, 3,000 psi per ASTM 105, or other caps which have been shown by test to contain the explosive effect of 25 grams of PETN, or
- (2) A 6-inch X 12 to 14-inch Schedule 80 seamless steel pipe nipple closed at both ends with 6-inch diameter malleable iron end caps with a minimum strength of 250 psi, or other caps which have been shown by test to contain the explosive effect of 25 grams of PETN, or

(3) A 8-inch X 30-inch Schedule 80 seamless steel pipe nipple closed at both ends with 8-inch diameter forged steel end caps, 3,000 psi per ASTM 105, or other caps which have been shown by test to contain the explosive effect of 25 grams of PETN.

For pipe nipples described in paragraphs a.(1), (2), and (3), the threads must be cut so that the end caps can be screwed on a minimum of 5 threads by hand, but the caps must be tightened with a wrench.

(4) The device described in "Handling Procedure and Design of a Shipping Container for Transporting Small Samples of Dry Primary Explosives" by Harold K.H. Bartles, presented at the 12th Symposium of Explosives and Pyrotechnics on March 13, 1984 in San Diego, California, USA, which is attached to Schlumberger's application to modify the special permit dated July 7, 1988 and supplemental letter dated July 2, 1992.

(5) The packaging identified as "Model LD-2250" described in "Shipping Containers for Small Samples of High Explosives" by Richard A. Hildner and Manual J. Urizar, Los Alamos National Laboratory Report No. LA-9107-MS/UC-71, Hercules Incorporated's application dated January 14, 1993. The packaging identified as "Model LD-1000" in this same Laboratory Report may only be used if the net mass of explosives contained within does not exceed 15 grams.

b. The energetic materials must be sealed in a leak-proof receptacle centered internally in the pipe or wrapped with cushioning material to keep the energetic material away from the side walls and ends of the inner packaging. The inner packagings described in paragraph 7.a. must be placed in:

(1) A cushioned UN 4G fiberboard box, 4C wooden box, 4D plywood box;

(2) A 4A steel box, 4B aluminum box, 4N metal (other than steel or aluminum) box;

(3) A 1A2 removable head steel drum, 1B2 removable head aluminum drum, or 1N2 removable head metal (other than steel or aluminum) drum; or

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(4) A container that meets the requirements of the Institute of Makers of Explosives' Safety Library Publication No. 22.

c. The movement of explosive substances forbidden in 173.54(j) is limited to samples for evaluation, testing, or waste disposal.

d. A container in which an explosive event has occurred may not be reused under the terms of this special permit.

e. Specific explosive article types may be transported provided that:

(1) Only inner packagings authorized in paragraphs 7.a.(1), (2), and (3) of this permit are used;

(2) The maximum net explosive weight within the inner packaging (pipe) shall not exceed 25 grams;

(3) The maximum energy content within the inner packaging (pipe) shall not exceed that of 25 grams of PETN; and

(4) Transport consists of a single type of article in each inner packaging, and is limited to the specific types listed below:

(i) Pyrotechnic valves, each containing not more than 350 mg NEW;

(ii) Exploding foil initiators, each containing not more than 140 mg NEW;

(iii) Igniters, each containing not more than 2,078 mg NEW;

(iv) Power cartridge devices, each containing not more than 1.6 grams NEW;

(v) Inflators and actuators, each containing not more than 6.58 grams NEW;

(vi) Primers, each containing not more than 200 mg; and

(vii) Microgas generators (MGGs), each containing not more than 1 gram NEW. MGGs containing

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formulations that undergo deflagration-to-detonation transitions, as defined by UN Test Series 5(b), are not authorized.

f. Fuze articles that are not listed in section 7.e. above may be transported by motor vehicle and rail freight, provided that the following requirements are met:

(1) For explosive articles, no more than 12.5 g of NEW shall be permitted within the packaging.

(2) For multiple explosive articles within the packaging, each explosive article may contain no more than 2 g of NEW.

(3) No substance within any article may have an energy density greater than PETN.

(4) Explosive articles that produce a directional effect or focus the energy of the reaction at a single point or along a line are not authorized.

(5) No part of the explosive article(s), if initiated, may come in contact with the inner packaging wall or end caps, whether by intentional mechanical effect or unanticipated loss of integrity (such as fragmentation) of the article.

(6) Additional packaging requirements

(i) Inside Packaging:

(A) The volume of a single explosive article or the combined volume of multiple explosive articles may not exceed 25% of the volume of the inside packaging authorized in this special permit.

(B) Only one inside packaging per outer packaging is authorized.

(ii) Outer packaging for articles is limited to those outer packagings listed in section 7.b. of this special permit, with the containment pipe/vessel being centrally located within the outer packaging with energy absorbing material

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completely filling the void space between the inner containment pipe/vessel and the inner walls of the outer packaging.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit, the HMR, and the ICAO TI.

b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

c. This special permit in no way affects the need to obtain any required authorizations from other agencies of the United States Government or from the competent authorities of countries of origin, transit, and destination.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, and cargo only aircraft.

Note: See individual authorization letter for additional modal restrictions.

10. MODAL REQUIREMENTS: A current copy of the special permit must be carried aboard each aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

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- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by 49 CFR 107.601 et seq., when applicable.

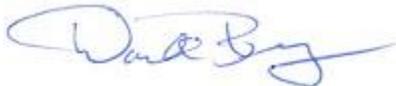
Each "Hazmat employee", as defined in § 171.8 who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when the special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) - 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover
Associate Administrator for Hazardous Materials Safety

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Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Andrew Eckenrode