

October 21, 2015



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 16414

EXPIRATION DATE: June 30, 2017

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Gardner Cryogenics
Department of Air Products and Chemicals, Inc.
Bethlehem, PA
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT Specification cargo tanks that conform with all regulations applicable to a DOT Specification MC338, except that they are manufactured to ASME Section XII and are marked with a "T" stamp, for the transportation of materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) 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.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.318, 178.320, 178.338 and Part 180 Subpart E in that non-DOT specification cargo tanks are not authorized, except as provided herein.
5. BASIS: This special permit is based on the application of Gardner Cryogenics, Inc., dated February 27, 2015, and additional information of August 2, 2015, submitted in accordance with § 107.105 and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

| Hazardous Materials Description | | | |
|--|-------------------------------|------------------------------|----------------------|
| Proper Shipping Name | Hazard Class/ Division | Identification Number | Packing Group |
| Hydrogen, refrigerated liquid (<i>cryogenic liquid</i>) | 2.1 | UN1966 | N/A |

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging authorized are non-DOT specification cargo tanks conforming to all requirements of the DOT MC338 Specification except that they are manufactured to the 2013 and 2015 edition of ASME Section XII, including Non Mandatory Appendices and code cases. The cargo tanks are ASME marked with a "T" designator and equipped with ASME Marked and Certified pressure relief devices. The cargo tanks must conform to the requirements for MC338 Specification (§§178.320 and 178.338) except as follows:

§ 178.320 General Requirements applicable to all DOT specification cargo tank motor vehicles

(a) Definitions

(3) Minimum thickness

The minimum thickness determined by ASME XII.

§ 178.338-1 General requirements.

(a) ***

§ 178.338-2 Material and material thickness.

(a) All materials of construction must conform to ASME Section XII, Section II and applicable codes cases.

- (b) The minimum thickness for shell, heads, or baffles and bulkheads used as tank reinforcement must conform to the requirements of ASME XII in lieu of 178.320(a).

§ 178.338-3 Structural integrity

- (a) General requirements and acceptance criteria

- (1) Maximum calculated design stress in the cargo tank wall must not exceed the ASME XII maximum allowable stress.

§ 178.338-4 Joints

- (a) All joints shall be in accordance with ASME XII.

§ 178.338-5 Stiffening Rings

- (a) ***

- (1) Cargo tanks designed to be loaded by vacuum may have circumferential reinforcement spacing greater than 60 inches provided the unreinforced shell section meets ASME XII criteria.

- (d) ***

- (3) Ring stiffeners shall meet ASME XII criteria for vacuum service.

§ 178.338-6 Manhole Assemblies.

ASME Section XII requirements apply.

§ 178.338-7 Openings

ASME Section XII requirements apply.

§ 178.338-8 Pressure relief devices, piping, valves and fittings

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- (a) Pressure relief devices must be ASME Section XII or VIII certified.

- (h) Pressure relief devices must be marked in accordance with ASME Section XII or VIII.

§ 178.338-9 Holding time

ASME Section XII requirements apply.

§ 178.338-10 Accident damage protection

ASME Section XII requirements apply.

§ 178.338-11 Discharge control devices

ASME Section XII requirements apply.

§ 178.338-12 Shear section

ASME Section XII requirements apply.

§ 178.338-13 Supports and Anchoring

ASME Section XII requirements apply.

§ 178.338-14 Gauging devices

ASME Section XII requirements apply.

§ 178.338-15 Cleanliness

ASME Section XII requirements apply.

§ 178.338-16 Inspection and testing

ASME Section XII requirements apply.

§ 178.338-17 Pumps and compressors

ASME Section XII requirements apply.

§ 178.338-18 Marking

- (a) ASME NAME PLATE: ASME Section XII requirements must be met in lieu of Section VIII. Characters

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markings must be a minimum 4 mm (5/32"), markings directly on the tank must be a minimum 8 mm (5/16")

DOT SPECIFICATION PLATE: Specification plate requirements must be appropriately modified to reflect compliance with terms of this special permit. For example:

DOT SPECIFICATION PLATE
CARGO TANK MOTOR VEHICLE MANUFACTURED BY
XXX Co.
XXX, XX USA
DOT Reg. # CT-XXXX

SPECIFICATION: DOT MC338 SP-16414
CARGO TANK MOTOR VEHICLE CERTIFICATION DATE: _____
CARGO TANK MFR.: _____
CARGO TANK DATE OF MFG: _____
CARGO TANK SERIAL #: _____
CARGO TANK MOTOR VEHICLE MFR. VIN: _____
MAXIMUM PAYLOAD: _____
MAXIMUM LOADING RATE: _____
MAXIMUM UNLOADING RATE: _____

§ 178.338-19 Certification

(a) ***

(b) ***

(1) ***

(2) The ASME Section XII manufacturer's data report must be provided as part of the cargo tank motor vehicle certification documents.

b. MARKING - Each vehicle identification number must be marked on both sides of the vehicle as specified in §§ 172.302(b) and (c).

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c. OPERATIONAL CONTROLS - Repairs, alterations and modifications involving welding, must be performed by a facility holding a current NBIC certificate of authorization for the use of the National Board "TR" or "R" Stamp.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

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

c. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits (OHMPA) and Approvals for a specific manufacturing facility.

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

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. Each tank is to be marked with "DOT MC 338 SP 16414" on the nameplate as specified in § 178.338-18(a)(1) in lieu of marking the special permit number on the side of each cargo tank.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

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10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo tank motor vehicle covered by this special permit.

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, Parts 171-180.

 - 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 § 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.

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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 user(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 Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

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: Staniszewski