

April 24, 2020



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 15131  
(THIRD REVISION)

**EXPIRATION DATE: 2021-04-30**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Taylor-Wharton America Inc.  
Baytown, TX
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, mark, sale, and use of DOT Specification 113A90W tank cars for the transportation in commerce of certain non-flammable cryogenic liquids listed in paragraph 6 below. 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. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
  - c. In accordance with 49 CFR 107.107(a), party status may not be granted to a manufacturing permit. These packagings may be used in accordance with 49 CFR 173.22a.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.319 and § 179.401-1 in that alternative packaging is authorized and § 172.203(a) in that marking the special permit number on the shipping papers is waived as provided herein.

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5. BASIS: This special permit is based on the application of Cryogenic Vessel Alternatives, Inc. dated January 4, 2017, submitted in accordance with § 107.109 and additional information dated March 31, 2020.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Argon, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1951	N/A
Nitrogen, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1977	N/A
Oxygen, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1073	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Prescribed packagings are DOT Specification 113A90W tank cars. The tank cars must also comply with the following:

(1) Each pressure relief device must meet the requirements of the AAR Specification for Tank Cars, Appendix A, A8.07(a).

(2) Each tank car must be designed and constructed with the following individual specification requirements:

DOT Specification	113A90W
Design service temperature	-320 °F
Material	§ 179.400-5
Impact test (weld and plate material)	§ 179.400-5(c)

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Impact test values	§ 179.400-5(d)
Standard heat transfer rate (Btu per day per lb. of water capacity, max) (see § 179.400-4)	5.8
Burst Pressure, minimum psi	240
Minimum shell thickness, inches [see § 179.400-7(a)]	3/16"
Minimum head thickness, inches [see § 179.400-7(a), (b) and (c)]	3/16"
Test pressure, psi (see § 179.400-18)	90
Safety vent bursting pressure, maximum psi	90
Pressure relief valve start-to-discharge pressure, psi ( $\pm$ 3 psi)	60
Pressure relief valve vapor tight pressure, min. psi	48
Pressure relief valve flow rating pressure, max. psi	66
Alternate pressure relief valve start- to-discharge pressure, psi ( $\pm$ 3 psi)	72
Alternate pressure relief valve vapor tight pressure min. psi	58
Alternate pressure relief valve flow rating pressure, max. psi	80
Pressure control valve	Optional up to 60 psig

(3) The normal evaporation rate test specified in § 179.400-4 must be conducted on the first tank car of each specific design.

(4) Prior to manufacturing, the applicant must secure approval in accordance with § 179.3.

b. TESTING:

(1) Each tank car operating under the terms of this special permit must be tested in accordance with § 179.400-18 at the time of construction.

(2) Retest of the pressure relief devices must be conducted in accordance with § 173.319(e).

(3) Each loaded tank car must be examined prior to offering and must have a demonstrated thermal performance history that indicates that it is not likely to vent during transit. Such performance history may include but not be limited to: annular vacuum space reading of 300 microns or less, average daily pressure rise data from previous trips, monitor vacuum at Preventive Maintenance inspections that are scheduled periodically and where an abnormal pressure rise if the indicator that vacuum has been compromised.

c. FILLING: Each tank car operating under the terms of this special permit must be filled in accordance with the following table:

Maximum set-to-discharge pressure (psig)	Maximum permitted filling density (percent by weight)		
	Argon	Oxygen	Nitrogen
60	126%	104%	72%
55	127.2%	104%	73%
25	132%	108%	76%
Design service temperature	-320 °F	-320 °F	-320 °F

d. The grantee must provide a tabulated list of all tank cars manufactured under the terms of this special permit with each application for renewal. The tabulated list must include reporting marks and car numbers, AAR Certificate of

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Construction Number, manufacturer's model number, and GRL. Additional cars may be manufactured and must be identified in the table with the next application for renewal of the special permit.

e. The marking requirements of § 172.203(a) are waived.

f. MARKING: Each tank car operating under the terms of this special permit must be marked "DOT-SP 15131" in letters and numerals at least 4 inches high on a contrasting background near the DOT specification markings.

g. Evaporation control equipment, as specified in § 179.400-20(c)(4), is optional. Mixing devices are not required under the terms of this special permit.

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 who receives a package covered by this special permit may reoffer it for transportation provided no modifications or changes are made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

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

d. 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 Safety Approvals and Permits Division for a specific manufacturing facility.

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.

9. MODES OF TRANSPORTATION AUTHORIZED: Rail freight.
10. MODAL REQUIREMENTS: The Federal Railroad Administration must be notified if any unusual incident occurs during the movement by contacting the:

Federal Railroad Administration  
Hazardous Materials Division  
RRS-12, Mail Stop 25  
1200 New Jersey Ave, SE  
Washington, D.C. 20590  
202-493-6245 or 202-493-6309

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.
- 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 this 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

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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

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](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: FRA/NICKS