

August 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 14573
(SIXTH REVISION)

EXPIRATION DATE: 2024-07-31

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Polar Tank Trailer, LLC
Holdingford, MN
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of DOT 400 series cargo tank motor vehicles fabricated using certain duplex stainless steels and other materials not authorized in § 178.345-2 as materials of construction. 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.
 - 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 § 178.345-2 in that the use of materials not listed in Section II of the ASME Code is not authorized, except as specified herein; and the use of cargo tanks with thicknesses less than that specified in §§ 178.346-2, 178.347-2 and 178.348-2 is not authorized except as specified herein.

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5. BASIS: This special permit is based on the application of Polar Tank Trailer, LLC dated August 13, 2020 and submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Hazardous materials authorized in DOT Specification 400 series cargo tank motor vehicles	Various	Various	I, II, III

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packagings prescribed are certain DOT specification cargo tank motor vehicles conforming in all respects to either DOT Specification 406, 407 or 412, except that the materials of construction are as shown in the tables as attached to this special permit. Materials must conform to the applicable ASME Code Case for the respective material, except that the allowable design stresses shall be such that the design margin for all cargo tanks will be 4:1. Allowable stresses and minimum thicknesses shall be as shown in the tables as attached to this special permit.

b. TESTING: All cargo tank motor vehicles fabricated under the terms of this special permit must be reinspected and retested in accordance with the requirements in 49 CFR Part 180, Subpart E for the applicable DOT 400 series cargo tank.

c. MARKING: Each cargo tank motor vehicle must be plainly marked on both sides near the middle in letters at least two inches in height on a contrasting background DOT-SP 14573. 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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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 package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered 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 manufactured under this special permit. It must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each motor vehicle used to transport packages covered by this special permit. Shippers need not add this special permit number to any document required by 49 CFR Part 172, Subpart C of as subject cargo tanks are marked as DOT 400 series units.

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.

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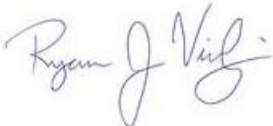
Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704. Persons not involved in the manufacture of packagings authorized under this special permit do not need training specific to this special permit.

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 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 notices 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.

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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: ae

Material of interest for DOT-SP 14573									
Material	Common Name	Minimum Tensile Strength (Rm)			Minimum Elongation (A)			Correction Factor (Cf)	
Unknown	Portable Tank Reference	370	Mpa	Per 178.274(a)(3) reference steel	27	%	Per 178.274(a)(3) reference steel	1.00	
UNS K03101	SA-515 Gr. 70 Mild Steel	485	Mpa	Per ASME Section II Part D	21	%	SA-515 Gr 70 Per ASME Section II Part A	0.99	
UNS K02403	SA-516 Gr. 65 Mild Steel	450	Mpa	Per ASME Section II Part D	23	%	SA-516 Gr 65 Per ASME Section II Part A	0.99	
UNS N08020	Alloy 20	552	Mpa	Per ASME Section II Part D	35	%	Per Rolled Alloys Data Sheet	0.80	
UNS N08367	AL 6XN	689	Mpa	Per ASME Section II Part D $\leq 3/16"$	47	%	Per Allegheny Ludlum Data Sheets	0.68	
UNS N08367	AL 6XN	655	Mpa	Per ASME Section II Part D $> 3/16"$	47	%	Per Allegheny Ludlum Data Sheets	0.69	
UNS R50400	Titanium, Grade 2	345	Mpa	Per ASME Section II Part D	20	%	Per Allegheny Ludlum Data Sheets	1.13	
UNS R50400	TITANIUM, CC2497-2	400	Mpa	Per ASME CC 2497-2	20	%	Per Allegheny Ludlum Data Sheets	1.08	
UNS R50550	Titanium, Grade 3	448	Mpa	Per ASME Section II Part D	18	%	Per Allegheny Ludlum Data Sheets	1.07	
UNS S32003	AL 2003	690	Mpa	Per ASME CC 2503 $\leq 3/16"$	40	%	Per Allegheny Ludlum Data Sheets	0.71	
UNS S32003	AL 2003	655	Mpa	Per ASME CC 2503 $> 3/16"$	40	%	Per Allegheny Ludlum Data Sheets	0.73	
UNS S32101	LDX 2101	700	Mpa	Per ASME CC 2418 $\leq 1/4"$	30	%	Per Allegheny Ludlum Data Sheets	0.78	
UNS S32101	LDX 2101	650	Mpa	Per ASME CC 2418 $> 1/4"$	30	%	Per Allegheny Ludlum Data Sheets	0.80	
UNS S32205	AL 2205	621	Mpa	Per ASME Section II Part D	30	%	Per Allegheny Ludlum Data Sheets $< 3/16"$	0.81	
UNS S32205	AL 2205	621	Mpa	Per ASME Section II Part D	35	%	Per Allegheny Ludlum Data Sheets $\geq 3/16"$	0.77	

DOT 406 Table		Volume capacity in gallons per inch	
	Up to 14	Over 14 to 23	Over 23
Reference Steel (SA-516 Gr. 70) [UNS K02700]	178.346-2 Table I		
	0.100	0.115	0.129
178.346-2 Table I Replacement			
Alloy 20 (SB 463) [UNS N08020]	0.090	0.092	0.104
AL-6XN (SB 688) [UNS N08367]	0.090	0.090	0.090
Titanium Grade 2 (SB 265) [UNS R50400]	0.113	0.130	0.146
Titanium Grade 2 CC2497-2 (SB 265) [UNS R50400]	0.108	0.124	0.139
Titanium Grade 3 (SB 265) [UNS R50550]	0.107	0.124	0.139
AL 2003 (SA 240) [UNS S32003]	0.090	0.090	0.092
AL 2101 (SA 240) [UNS S32101]	0.090	0.090	0.101
AL 2205 (SA 240) [UNS S32205/S31803]	0.090	0.093	0.105

Cargo tank rated capacity (gal)		Up to 4,500 to 8,000		Over 8,000 to 14,000		Over 14,000	
Reference Steel (SA-516 Gr. 70) [UNS K02700]	178.346-2 Table II						
	0.100	0.115	0.129	0.143			
178.346-2 Table II Replacement							
Alloy 20 (SB 463) [UNS N08020]	0.090	0.092	0.104	0.115			
AL-6XN (SB 688) [UNS N08367]	0.090	0.090	0.090	0.097			
Titanium Grade 2 (SB 265) [UNS R50400]	0.113	0.130	0.146	0.162			
Titanium Grade 2 CC2497-2 (SB 265) [UNS R50400]	0.108	0.124	0.139	0.154			
Titanium Grade 3 (SB 265) [UNS R50550]	0.107	0.124	0.139	0.154			
AL 2003 (SA 240) [UNS S32003]	0.090	0.090	0.092	0.102			
AL 2101 (SA 240) [UNS S32101]	0.090	0.090	0.101	0.112			
AL 2205 (SA 240) [UNS S32205/S31803]	0.090	0.093	0.105	0.116			

DOT 407 Table		Up to 10		Over 10 to 14		Over 14 to 18		Over 18 to 22		Over 22 to 26		Over 26 to 30		Over 30	
Reference Steel (SA-516 Gr. 70) [UNS K02700]	178.347-2 Table I and II														
	0.100	0.100	0.115	0.129	0.143	0.156									
178.347-2 Table I and II Replacement															
Alloy 20 (SB 463) [UNS N08020]	0.090	0.090	0.092	0.104	0.104	0.115	0.125								
AL-6XN (SB 688) [UNS N08367]	0.090	0.090	0.090	0.090	0.090	0.097	0.105								
Titanium Grade 2 (SB 265) [UNS R50400]	0.113	0.113	0.130	0.146	0.146	0.162	0.177								
Titanium Grade 2 CC2497-2 (SB 265) [UNS R50400]	0.108	0.108	0.124	0.139	0.139	0.154	0.168								
Titanium Grade 3 (SB 265) [UNS R50550]	0.107	0.107	0.124	0.139	0.139	0.154	0.168								
AL 2003 (SA 240) [UNS S32003]	0.090	0.090	0.090	0.092	0.102	0.111									
AL 2101 (SA 240) [UNS S32101]	0.090	0.090	0.090	0.101	0.101	0.112	0.122								
AL 2205 (SA 240) [UNS S32205/S31803]	0.090	0.090	0.093	0.105	0.105	0.116	0.127								

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DOT 412 Table	Volume Capacity	Lading Density (#/gal)	10 or less				Over 10 to 14				Over 14 to 18				Over 18		
			Up to 10	Over 10 up to 13	Over 13 up to 16	Over 16	Up to 10	Over 10 up to 13	Over 13 up to 16	Over 16	Up to 10	Over 10 up to 13	Over 13 up to 16	Over 16	Up to 10	Over 10 up to 13	
Reference Steel (SA-516 Gr. 70) [UNS K02700]	Head Thickness (in.)		0.100	0.129	0.157	0.187	0.129	0.157	0.187	0.250	0.157	0.250	0.250	0.250	0.157	0.250	0.312
			178.346-2 Table I	178.346-2 Table II	0.100	0.129	0.157	0.187	0.100	0.129	0.157	0.187	0.100	0.129	0.157	0.187	0.100
Alloy 20 (SB 463) [UNS N08020]	Head Thickness (in.)		0.100	0.129	0.157	0.187	0.129	0.157	0.187	0.250	0.157	0.250	0.250	0.250	0.157	0.250	0.312
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.104	0.126	0.150	0.104	0.126	0.150	0.201	0.126	0.201	0.126	0.201	0.126
AL-6XN (SB 688) [UNS N08367]	Head Thickness (in.)		0.090	0.090	0.106	0.126	0.106	0.126	0.169	0.106	0.169	0.106	0.169	0.106	0.169	0.106	0.211
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.090	0.106	0.126	0.090	0.090	0.106	0.126	0.090	0.090	0.106	0.126	0.090
Titanium Grade 2 (SB 265) [UNS R50400]	Head Thickness (in.)		0.113	0.146	0.178	0.212	0.113	0.146	0.178	0.212	0.113	0.146	0.178	0.212	0.113	0.146	0.178
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.113	0.146	0.178	0.212	0.113	0.146	0.178	0.212	0.113	0.146	0.178	0.212	0.113
Titanium Grade 3 (SB 265) [UNS R50550]	Head Thickness (in.)		0.108	0.139	0.169	0.201	0.108	0.139	0.169	0.201	0.108	0.139	0.169	0.201	0.108	0.139	0.169
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.108	0.139	0.169	0.201	0.108	0.139	0.169	0.201	0.108	0.139	0.169	0.201	0.108
AL 2003 (SA 240) [UNS S32003]	Head Thickness (in.)		0.107	0.139	0.169	0.201	0.107	0.139	0.169	0.201	0.107	0.139	0.169	0.201	0.107	0.139	0.169
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.092	0.112	0.133	0.092	0.092	0.112	0.133	0.092	0.092	0.112	0.133	0.092
AL 2101 (SA 240) [UNS S32101]	Head Thickness (in.)		0.090	0.101	0.123	0.146	0.101	0.123	0.146	0.195	0.123	0.195	0.123	0.195	0.123	0.195	0.244
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.101	0.123	0.146	0.101	0.123	0.146	0.195	0.101	0.123	0.146	0.195	0.101
AL 2205 (SA 240) [UNS S32205/S31803]	Head Thickness (in.)		0.090	0.101	0.123	0.146	0.101	0.123	0.146	0.195	0.101	0.123	0.146	0.195	0.101	0.123	0.146
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.101	0.123	0.146	0.101	0.123	0.146	0.195	0.101	0.123	0.146	0.195	0.101
Shell Thickness (in.)			0.090	0.105	0.128	0.152	0.105	0.128	0.152	0.193	0.105	0.128	0.152	0.193	0.105	0.128	0.152
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.105	0.128	0.152	0.090	0.090	0.105	0.128	0.090	0.090	0.105	0.128	0.090
Shell Thickness (in.)			0.090	0.105	0.128	0.152	0.105	0.128	0.152	0.193	0.105	0.128	0.152	0.193	0.105	0.128	0.152
			178.346-2 Table I Replacement	178.346-2 Table II Replacement	0.090	0.105	0.128	0.152	0.090	0.090	0.105	0.128	0.090	0.090	0.105	0.128	0.090

Yellow Represents Correction Factors Changed Based on Thickness