

October 16, 2012



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 14277  
(SECOND REVISION)

EXPIRATION DATE: August 31, 2016

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Ascus Technologies, LTD.  
Cleveland, Ohio
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification carbon glass fiber reinforced plastic (GFRP) cargo tank conforming with all regulations applicable to a DOT Specification 407/412 cargo tank motor vehicle, except as specified herein, for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
  - 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 § 107.503(b) and (c) in that the manufacturer is not required to hold an ASME U stamp or National Board R stamp; §§ 173.245, 173.247 and 173.248 in that a non-DOT specification cargo tank constructed of glass fiber reinforced plastic is not authorized, except as specified herein.
5. BASIS: This special permit is based on the application of Ascus Technologies, LTD. dated September 21, 2012, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

<b>Hazardous Materials Description</b>			
<b>Proper Shipping Name</b>	<b>Hazard Class/ Division</b>	<b>Identification Number</b>	<b>Packing Group</b>
Class 8 material authorized to be transported in a lined DOT 412 cargo tank, Class 8 liquid and solid waste materials/specific chemical name or generic description as appropriate	8	As appropriate	I, II or III
Class 3 liquid or solid waste materials/specific chemical name or generic description as appropriate	3	As appropriate	I, II or III
Division 6.1 liquid or solid waste materials/specific chemical name or generic description as appropriate	6.1	As appropriate	I, II or III
Class 9 liquid or solid waste materials/specific chemical name or generic description as appropriate	9	As appropriate	III

7. SAFETY CONTROL MEASURES:

a. PACKAGING - The authorized packaging is a non-DOT specification carbon glass fiber reinforced plastic (GFRP) cargo tank conforming with all regulations applicable to a DOT Specification 407/412, except as specified herein. Each tank must have a design pressure of 35 psig and a design margin of 5.0:1. Maximum tank capacity may not exceed 5500 gallons. Each tank must be designed and constructed in accordance with Ascus Technologies, LTD. design drawings dated 9/1/04, 9/16/04, and 7/14/05 dwg. 10001 entitled TANK TRAILER LAYOUT, and with calculations and specifications on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). Each tank must be in compliance with §§ 173.245, 173.247 or 173.248, as prescribed in the Hazardous Materials Table (§ 172.101), except that Special

Provisions, B15 and B23 are waived. In addition, it must meet all requirements for a DOT 407 and DOT 412 specification cargo tank motor vehicle (§§ 178.347 and 178.348), except as follows:

- (1) §§ 178.345-1, 178.347-1 and 178.348-1: Any references to ASME Code requirements do not apply.
- (2) §§ 178.345-2 and 3; 178.347-2; and 178.348-2: Type of material, wall thickness and lining requirements do not apply. Tank shell, heads and fittings must be constructed of GFRP in accordance with the data on file with the OHMSPA. Shell design must be based on extreme dynamic loadings in described in § 178.345-3(c)(2).
- (3) § 178.345-4: Joint weld requirements do not apply.
- (4) § 178.345-7: Circumferential reinforcement requirements do not apply.
- (5) § 178.345-10(c): Pressure relief provisions for location do not apply.
- (6) § 178.345-14: Specification plate and name plate requirements must be appropriately marked "DOT-SP 14277" in lieu of the DOT specification.
- (7) § 178.320(b) and 178.345-15 Certification: The manufacturer's certificate retained by the motor carrier must be appropriately modified to reflect compliance with terms of this special permit. § 178.345-15(d) applies in regard to the appropriate paper work being generated by the cargo tank motor vehicle manufacturer, to certify that the completed cargo tank motor vehicle complies in all respects to the terms of this special permit.
- (8) § 180.413: Repairs must be performed by the tank manufacturer. Any modification, stretching or rebarrelling must be authorized in writing by OHMSPA.

b. OPERATIONAL CONTROLS -

- (1) Tanks that are to be used in transporting Class 3 waste materials must be equipped with a spring loaded relief valve.

(2) The compatibility of commodities transported and the GFRP cargo tank must be based on ASTM C 581 "Standard Test Method for Chemical Resistance of Thermosetting Resins Used in Glass Fiber Reinforced Structures". Test reports must be maintained by the owner or manufacturer for as long as the cargo tank remains in active operation and be made available for review by a representative of DOT.

c. TESTING - Initial qualification testing must be in accordance with § 180.405, except that any references to ASME Code requirements do not apply. Periodic requalification must include a hydrostatic test, and an annual inspection of lining, which must include Barcol hardness testing indicating a hardness not less than 80% of the original resin specification of the liner in any tank requiring repair. In addition to those items required to be examined by the visual inspections specified in § 180.407(d) and (e), the visual inspections must include detection of cracks, blisters, fiber bloom, veil and resin degradation, gouges, and debonding at saddles. All internal defects beyond the tanks liner "corrosion barrier" require confirmation and inspection by the manufacturer and if repair is applicable, shall be done by the manufacturer. All defects shall have a photographic record maintained as part of the inspection documentation for the cargo tank.

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. Only those hazardous materials determined to be compatible with the GFRP cargo tank, as determined under 7.b.(2) above, may be offered for transportation in the cargo tank authorized under this special permit.

c. 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 or its contents and it is offered for transportation in conformance with this special permit and the HMR.

d. A current copy of this special permit, including the list of compatible hazardous materials, must be maintained at each facility where the package is offered or reoffered for transportation. Each offeror must review the current copy of this special permit prior to loading hazardous materials into the cargo tank.

e. 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 and Approvals for a specific manufacturing facility.

f. 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.

g. Prior to the initial shipment of hazardous materials the following information must be submitted to the OHMSPA.

(1) The Manufacturer's Data Report for the first cargo tank fabricated.

(2) The certification documents for the cargo tank including certifications of other manufacturers, Design Certifying Engineers (DCE), Registered Inspectors (RI) and registration numbers for DCE's and RI's.

(3) Test reports for the compatibility of commodities to be shipped within the GFRP cargo tank. Test reports must be based on ASTM C 581 "Standard Test Method for Chemical Resistance of Thermosetting Resins Used in Glass Fiber Reinforced Structures". Results for all materials tested must be included in the report, indicating those that pass and do not pass.

h. Within 6 months from the issuance of the special permit, an ASTM D 2563 Level IV defect assessment program for in-service inspections of the external and interior of the tank, indicating critical areas, allowable type, size, number, spacing and method of inspection and frequency must be submitted to the OHMSPA (see paragraph 7.c. above).

- i. At least 72 hours prior to conducting certification tests on the first production GFRP cargo tank, the grantee must notify OHMSPA by email or fax.
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.
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 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 -- OHMSPA, 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 Material 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](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: SStaniszewski:dl