

December 2, 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 11777
(EIGHTEENTH REVISION)

EXPIRATION DATE: August 31, 2017

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Autoliv ASP, Inc.
Ogden, UT

2. a. PURPOSE AND LIMITATION:

a. This special permit authorizes the manufacture, marking, sale and use of non-DOT specification pressure vessels for use as components for safety systems and explosive articles. The pressure vessels, charged with non-toxic, non-liquefied gases, are authorized for transportation in commerce subject to requirements and limitations specified herein. 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. FIVE YEAR TRANSPORTATION AUTHORIZATION: This special permit authorizes transportation of the pressure vessels identified herein for up to five years from the date of manufacture. This limitation does not apply to non-specification pressure vessels when installed in air bag modules. This special permit provides no certification of safety for end use environments and life cycles.

c. SPECIAL PERMIT SCOPE LIMITATIONS: This special permit only applies to non-specification pressure vessels in airbag inflators or seat-belt pretensioners when they are article of commerce in transportation. 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, incorporation as a component of a vehicle or other device, or other uses not associated with transportation in commerce

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.203(a) in that marking the special permit number on the shipping paper is waived; 172.301(c) in that marking the special permit number on the package is waived; 173.301a(a)(1), and 173.302a(a)(1) in that non-DOT specification pressure vessels are not authorized except as provided herein.
5. BASIS: This special permit is based on the application of Autoliv ASP, Inc. dated September 4, 2015, submitted in accordance with § 107.109 and additional information submitted on August 4, 2015.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Safety devices, <i>electrically initiated</i>	9	UN3268	N/A
Safety devices, pyrotechnic	1.4G	UN0503	N/A

Notes:

1. Under this special permit, the use of these proper shipping names is limited to devices used as air bag inflators or seat-belt pretensioners.
2. A component which contains a quantity of pyrotechnic materials must be classed and approved as provided for in § 173.56 of the Hazardous Materials Regulations (HMR). If the pyrotechnic material augments the volume of the gas in the pressure vessel, or in any way enhances the performance of the compressed gas, the device must be tested in the same configuration as when shipped.
3. Safety devices, electrically initiated may be classed as Class 9 in accordance with § 173.166(b) (1).

7. SAFETY CONTROL MEASURES: Packaging prescribed is a non-DOT specification pressure vessel meeting the following requirements:

a. PACKAGING:

(1) The maximum service pressure at 70°F may not exceed 5000 PSIG. The minimum test pressure is the pressure of the contents at 200°F. The rated service pressure may not exceed 80 percent of the test pressure and the water volume of each pressure vessel may not exceed one liter. The pressure vessels may be cylindrical or of any other shape approved by the Independent Inspection Agency (IIA). Unless otherwise specified herein, the referenced sections of 178.65 citing cylinders must also apply to these pressure vessels of other shapes.

(2) Material of construction must conform to all requirements of § 178.65(b).

(3) Manufacturing requirements must conform to all requirements of § 178.65(c).

(4) The minimum wall thickness must be such that the wall stress meets the requirements of § 178.65(d). Calculations of the stress for non-cylindrical pressure vessels must be made at the most critical location using a suitable analysis technique approved by the IIA.

(5) Openings and attachments for cylindrical pressure vessels must conform to the requirements of § 178.65(e), except that sidewall attachments as shown on Autoliv AB drawing 576061400 dated December 18, 1998 on file with the Office of Hazardous Materials Special Permits and Approvals are authorized. Openings and attachments for non-cylindrical pressure vessels must conform to the requirements of § 178.65(e)(3) and (4).

(6) Each pressure vessel must be equipped with a pressure relief device designed to meet all the requirements for a rupture disk prescribed in the Compressed Gas Association (CGA) Pamphlet S-1.1. The pressure relief device shall be capable of preventing rupture of the pressure vessel when subjected to fire test conducted in accordance with CGA Pamphlet C-14.

(7) Pressure vessels and components must be transported

in strong outside packaging in accordance with
§ 173.301(a) (9).

b. TESTING:

(1) Each pressure vessel must be tested as required in
§ 178.65(f) except that -

(i) The hold time at test pressure specified in
§ 178.65(f) (1) may be limited to that which is
adequate to ensure compliance with the requirements
contained in § 178.65(f) (1), and

(ii) For cylindrical pressure vessels, the failure
modes of § 178.65(f) (2) (i), (ii) and (iii) apply.
For non-cylindrical pressure vessels, the failure
modes of § 178.65(f) (2) (i), (ii), and (iv) apply.

(iii) The maximum duration of the shift specified
in § 178.65(f) (3) may be extended beyond 10 hours
at the discretion of the independent inspector.

(2) The flattening test specified in § 178.65(g) is not
required.

(3) A representative pressure vessel, packaged as it
would be for shipment, must be activated and no
materials other than non-toxic, non-flammable vapors or
gases may be expelled from the package.

c. MARKING:

Each pressure vessel must be durably marked as follows:

DOT SP-11777/5000¹
lot No. xxxxx²
Manufacturer's Name
This Pressure Vessel May Not Be Refilled

¹ Where 5000 represents the design service pressure.

² Where xxxxx is the lot number as appropriate.

Note: Each line of these markings may be placed without
regard to location or order on the pressure vessel.

8. SPECIAL PROVISIONS:

a. This special permit only applies to non-specification

pressure vessels in airbag inflators or seat-belt pretensioners when they are article of commerce in transportation. The pressure vessels are excepted from the requirements of the HMR, Part 178 when the design has been certified by an IIA, approved under § 173.803 as having met all the requirements of this special permit.

b. The IIA's certification must include test results and documents related to explosive classification and approval. A copy of the certification must be maintained at each facility where the pressure vessel is manufactured and by the IIA for a period of 15 years from the date of completion of the design certification.

c. Persons who receive the packages covered by this special permit may reoffer them for transportation provided no modification or changes are made to the packages, all terms of this special permit are complied with and a current copy of this special permit is maintained at each facility from which such reoffering occurs.

d. Autoliv ASP, Inc. must comply with all provisions of this special permit, and all other applicable requirements contained in the HMR, Parts 171-177. No modifications may be made to the pressure vessel or pyrotechnic components which would affect the performance of the pressure vessel or its compliance with the requirements of this special permit until such modifications have been reviewed, tested and certified by an Independent Inspector as meeting the requirements of this special permit.

e. Devices utilizing the non-DOT specification pressure vessel authorized herein are exempt from the requirements of 49 CFR Parts 100-185 when installed in safety components such as steering columns or door panels.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft (may not exceed the quantity limitation specified in § 172.101, column 9A), and cargo aircraft only.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or aircraft 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.
- 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

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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 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: dl/SG