



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

JUL 6 2004

DOT-E 11379
(ELEVENTH REVISION)

EXPIRATION DATE: May 31, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: TRW Automotive
Washington, Michigan

2. a. PURPOSE AND LIMITATIONS: This exemption authorizes the manufacture, mark, sale and use of non-DOT specification pressure vessels for use as components of safety systems. The pressure vessels, charged with non-toxic, non-liquefied gases, are authorized for transportation in commerce subject to requirements and limitations specified herein. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. FIVE YEAR TRANSPORTATION AUTHORIZATION: This exemption authorizes transportation of the pressure vessels identified herein for up to five years from the date of manufacture. This exemption provides no certification of safety for end use environments and life cycles.

c. EXEMPTION SCOPE LIMITATIONS: This exemption only applies to a package when it is an article of commerce in transportation. The safety analyses performed in development of this exemption 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 §§ 173.301(h), 173.302(a) and 175.3 in that non-DOT specification cylinders are not authorized, except as specified herein.
5. BASIS: This exemption is based on TRW's applications dated March 22, 2004 submitted in accordance with § 107.109, and April 5, 2004, submitted in accordance with and § 107.105 and the public proceeding thereon. Additional information dated June 8, 2004 was also submitted.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Non-toxic, non-liquefied gases and mixtures thereof/ Proper shipping name as specified in § 172.101 ^{1*}	2.1 or 2.2 as appropriate	As appropriate	N/A
Air bag inflators, or air bag modules, or Seat-belt pretensioner ¹	9	UN3268	III

¹A safety system or 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.

* The use of this hazardous material description may be used until September 30, 2004.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification pressure vessel meeting the following requirements:

- (1) The maximum service pressure at 70° F may not exceed 7500 p.s.i. 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 term "pressure of contents" as used in this exemption means the total pressure of all the materials to be shipped in the cylinder.

(2) Material of construction must conform to all requirements of § 178.65(b) except that:

(i) aluminum is limited to alloy 6061 of T6 temper;

(ii) a chrome-moly steel cold drawn seamless tubing, with a maximum carbon content of 0.20 percent in quenched and tempered condition is also authorized. For the material with carbon content exceeding the maximums contained in § 178.65(b), the chemical composition and mechanical strength properties must conform to the TRW product standard "Giga Tube" as contained in TRW's drafted TRWMS30311621, revision D0, which is on file with the Office of Hazardous Materials Exemptions and Approvals. The tensile strength of the steel may not be less than 135 Ksi and may not exceed 165 Ksi.

(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).

(5) Openings and attachments must conform to all requirements of § 178.65(e) except that the diameter of the circle as referenced in § 178.65(e)(2) may not exceed 90%.

(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 must be capable of preventing rupture of the pressure vessel when subjected to fire test conducted in accordance with CGA Pamphlet C-14.

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) 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 motor vehicle or aircraft safety system, 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 E-11379/7500¹

Lot No. xxxxx²

Manufacturer's Name

This Pressure Vessel May Not Be Refilled

¹ Where 7500 represents the 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. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

c. This exemption is limited to pressure vessels used as components of safety systems. The pressure vessels are excepted from the requirements of the HMR, Part 178 when the design has been certified by an Independent Inspection Agency, approved under § 173.300a as having met all the requirements of this exemption.

A copy of the initial design certification report for inflators manufactured with the "Giga Tube" material must be on file with the Office of Hazardous Materials Technology before first shipment.

d. The Independent Inspection Agency's design 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 safety system is manufactured and by the Independent Inspection Agency for a period of 15 years from the date of completion of the design certification.

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

f. TRW must comply with all provisions of this exemption, and all other applicable requirements contained in the 49 CFR, Parts 100-180. No modifications may be made to the pressure vessel, pyrotechnic components or production safety system which would affect the performance of the safety system or its compliance with the requirements of this exemption until such modifications have been reviewed, tested and certified by an Independent Inspector as meeting the requirements of this exemption.

g. Devices utilizing the non-DOT specification pressure vessel authorized herein are exempt from the requirements of 49 CFR Parts 100-180 when installed in safety components such as steering columns or door panels.

h. Pressure vessels, components, and safety systems must be transported in strong outside packaging in accordance with § 173.301(k).

i. Transportation of a Division 2.1 material (flammable gases) is not authorized aboard cargo vessel or aircraft unless specifically authorized in the Hazardous Materials Table (§ 172.101).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel and cargo aircraft only (see restriction in paragraph 8.i above.)

This exemption is to serve as an authorization of The Competent Authority for the United States (CA-9505021)

in accordance with the General Packing Requirements under Part 3 Chapter 1 of the International Civil Aviation Organization Technical Instructions (ICAO TI) and additionally meets the requirements of State Variation US 6. Pressure vessels or safety systems in conformance with this exemption are authorized to be shipped pursuant to Packing Instruction 200 of ICAO TI.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper shall furnish a copy of this exemption 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 exemption 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 exemption and the Hazardous Materials Regulations, Parts 171-180.
 - o Persons operating under the terms of this exemption 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 exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.)

In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

Robert A. McGuire
Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

JUL 6 2004
Date

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

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: CWF/AM