U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

APR 2 1 2004

DOT-E 11993
(SEVENTH REVISION)

EXPIRATION DATE: July 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Key Safety Systems, Inc.
Lakeland, FL
(Former grantee: Breed Technologies, Inc.)

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, marking and sale of non-DOT specification cylinders (pressure vessels) for use as components of automobile vehicle safety systems. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.

c. 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.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.301(a)(1) and 173.302a in that the use of a non-DOT specification cylinder is not authorized.

5. BASIS: This exemption is based on the application of Key Safety Systems dated October 21, 2003 submitted in accordance with § 107.105 and the public proceeding therein.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Air bag inflators, compressed gas *or* Air bag modules, compressed gas *or* Seat-belt pretensioners, compressed gas*	2.2	UN3353	n/a
Air bag inflators, *or* Air bag modules, *or* Seat-belt pretensioners	9	UN3268	III
Air bag inflators, *pyrotechnic or* Air bag modules, *pyrotecchnic* or Seat-belt pretensioner, *pyrotechnic*	1.4G	UN0503	II
Non-toxic, non-liquefied gases and mixtures thereof/ Proper shipping name as specified in § 172.101	2.1	as appropriate	n/a

Note: A vehicle safety system or component which contains a quantity of pyrotechnic materials must be classed and approved as provided for in § 173.56 of the 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: Packaging prescribed is a non-DOT specification pressure vessel meeting the drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and the following requirements:

a. PACKAGING -

(1) The maximum service pressure at 70°F may not exceed 9,000 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.

(2) Material of construction must conform to all requirements of § 178.65(b), except that aluminum is limited to 6061 alloy of T6 temper.

(3) Manufacturing requirements must conform to all requirements of § 178.65(c), except that controlled marking of the sidewall by laser etching or other electro-mechanical means is permitted provided that the depth of the markings does not exceed 0.22mm (0.009") and the height of the marking must be between 2.54mm (0.10") and 6.35mm (0.25").

(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 as follows:

(i) A fill port hole of up to 0.130 inch in diameter may be located in an imaginary circle, concentric to the axis of the cylinder, not exceeding 90 percent of the outside diameter of the cylinder. Drawings showing the location of the fill port hole must be on file with the OHMEA.

(ii) Welded attachments to the sidewall of the cylinder can be made provided that these attachments are not detrimental to the structural integrity of the cylinder. The burst performance of the cylinder shall not be less than 95% of the same cylinder design without attachments. In all cases, the burst pressure must meet the criteria of § 178.65(f)(2). Welding or brazing of the attachments must be completed prior to all final pressure tests.

(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.

(7) Pressure vessels, components, and vehicle safety systems 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) 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 11993/9000[1]
Lot No. xxxxx[2]
Manufacturer's Name
The Pressure Vessel May Not Be Refilled

[1] Where 9000 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 exemption is limited to pressure vessels used as components of a vehicle safety system. 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 Part 107, Subpart I, as having met all the requirements of this exemption.

b. 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 vehicle 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.

c. 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.

d. 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.

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

f. 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.

g. No modifications may be made to the pressure vessel, pyrotechnic components or production vehicle safety system which would affect the performance of the vehicle 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.

h. This exemption is to serve as an authorization of The Competent Authority for the United States (CA-9804002) issued in accordance with the Part 4, Chapter 2, Paragraph 2.5 of the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) and additionally meets the requirements of State Variation US 6. Pressure vessels or vehicle safety systems complying with this exemption are authorized to be shipped pursuant to Packaging Instruction 200 of ICAO TI.

i. Transportation of Division 2.1 (flammable gases) are 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).

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 must furnish a current 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:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
- 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.
- 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 this 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.

APR 2 1 2004

Date

Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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