U.S. Department
of Transportation
**Research and
Special Programs
Administration**

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

AUG 5 2003

DOT-E 12652
(THIRD REVISION)

EXPIRATION DATE: July 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Eagle-Picher Technologies, LLC
Joplin, MO

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the transportation in commerce of a non-DOT specification pressure vessel containing compressed hydrogen, which is a component part of a nickel-hydrogen battery. 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. The safety analyses did not consider the hazards and risks associated with use as a component of a transport 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(f), 173.302a(a), and 175.3 in that a non-DOT specification cylinder is not authorized, except as specified herein.

5. BASIS: This exemption is based on the application of Eagle-Picher dated July 14, 2003 submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

| Proper Shipping Name/ Hazardous Materials Description | Hazard Class/ Division | Identi-fication Number | Packing Group |
|---|---|---|---|
| Hydrogen, compressed | 2.1 | UN1049 | N/A |

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a non-DOT specification pressure vessel constructed of Inconel 718 alloy per AMS 5596 with fusion welded tubing and hemispherical domed end caps, designed and constructed in accordance with MIL-STD-1522, that have a maximum service pressure of 495 psig. The pressure vessel is a component of a nickel-hydrogen battery as described in the application on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

b. TESTING -

(1) 100% non-destructive examination of the welds is required. Any cylinder with a flaw greater than 0.050 inches must be rejected.

(2) The pressure vessel must have a burst pressure to service pressure ratio of 2.5 or greater.

(3) The nickel-hydrogen battery must meet the requirements of § 173.159(d) for a non-spillable, wet, electric storage battery. There may not be a release of gas during the vibration or pressure differential tests.

(4) The nickel-hydrogen battery must meet the test requirements of the documentation "QTP-884" on file with OHMEA.

(5) Each pressure vessel must be retested and reinspected at least once every five years to at least 743 psig test pressure, in accordance with the requirements of § 180.205. The permanent volumetric expansion of the pressure vessel may not exceed 10% of total volumetric expansion at test pressure. Cylinders leaking or bulging through any weld seam must be rejected.

c. OPERATIONAL CONTROLS -

(1) Pressure relief devices are not required.

(2) Each battery must be transported in a strong outside shipping container as detailed in the application on file with OHMEA.

8. SPECIAL PROVISIONS:

a. The outside of each shipping container must be marked "Inside package conforms to DOT-E 12652".

b. A person who is not a holder of this exemption who receives a package covered by this exemption may reoffer it for transportation provided no modification or change is made to the package or its contents and it is reoffered for transportation in conformance with this exemption and the HMR.

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

d. Emergency response information provided with the shipment and available via an emergency response telephone number must indicate that the receptacles are not fitted with pressure relief devices and provide appropriate guidance for exposure to fire.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo only aircraft.

10. MODAL REQUIREMENT: A current copy of this exemption must be carried aboard each aircraft used to transport packages covered by this exemption. The shipper must 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 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, 49 CFR Parts 171-180.

- 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 inform the AAHMS, in writing, of any incidents involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

R. Ben Pick

Robert A. McGuire
for Associate Administrator for
Hazardous Materials Safety

AUG 5 2003
(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: SSTANISZEWSKI/ALB