U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

MAR 2 4 2004

DOT-E 13280

EXPIRATION DATE: February 28, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Texaco Ovonic Hydrogen Systems, L.L.C.
Rochester Hills, MI

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of hydrogen storage systems for use in fuel cells to power portable devices. The hydrogen storage systems utilize non-DOT specification cylinders containing hydrogen absorbed in metal hydride. 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 consumer use, 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)in that the non-DOT specification cylinder is fitted with pressure relief devices that do not meet the requirements of CGA S-1.1 and § 173.301(d) in that the material within the cylinder has the potential to endanger the cylinder's serviceability.

5. BASIS: This exemption is based on the application of Texaco Ovonic Hydrogen Systems, L.L.C. dated July 3, 2003 and additional information dated September 24,and November 14, 2003, submitted in accordance with § 107.105 and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi- fication Number**	**Packing Group**
Hydrogen absorbed in metal hydride	2.1	NA9279	N/A
Hydrogen in a metal hydride storage system	2.1	UN3468	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a hydrogen storage system (canister) incorporating a non-DOT specification cylinder containing hydrogen absorbed in metal hydride. The cylinder must have a design service pressure of at least 1,800 psig and a maximum water capacity of 5 pounds. The hydrogen storage system must be manufactured and certified in accordance with Texaco Ovonic Hydrogen Systems (TOHS) Internal Product Standard 550002-2003 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). The hydrogen storage system must be in conformance with the following:

(1) Pressure relief devices. The cylinder must be equipped with a CGA CG-7 pressure relief device with a rated start to discharge pressure of at least 1,175 psig and with a CGA CG-10 thermal relief device in accordance with the CGA Pamphlet S-1.1. A combination device meeting both criteria is authorized. The entire hydrogen storage system must successfully pass a fire test as described in CGA Pamphlet C-14. The system must be fire tested by an independent testing laboratory.

(2) The hydrogen storage system must be equipped with an internal geometric configuration or other means that prevents the metal hydride within from exerting detrimental forces on the cylinder.

(3) The cylinder must be designed, manufactured, and tested in accordance with TOHS Internal Product Standard 550003-2003 on file with the OHMEA. The cylinder must be in conformance with all requirements of a DOT Specification 3AL-1800 cylinder(49 CFR §§ 178.35 and 178.46) except that in § 178.35(f)(1)(i) "DOT-E 13280-400" must be permanently marked in lieu of "DOT 3AL-1800".

b. TESTING - Each cylinder must be successfully requalified at least once every five years by a DOT approved 100% ultrasonic examination method in lieu of the internal visual inspection and hydrostatic pressure test specified in § 180.205(f) and (g). Ultrasonic examination and marking must be performed in conformance with the requirements of a valid DOT exemption for the requalification of DOT Specification 3AL cylinders.

c. MARKING - Each cylinder must be marked "DOT-E 13280". Each outside packaging must be marked "INSIDE PACKAGING COMPLIES WITH DOT-E 13280."

d. OPERATIONAL CONTROLS

(1) Refilling must be performed by TOHS or its designated agents.

(2) Inspection and charging of the cylinder must be performed in accordance with TOHS Refill Specification For Portable Ovonic Solid Hydrogen Storage Systems, document #600001-2004, on file with the OHMEA.

(3) The maximum charging pressure of the hydrogen storage system must be 400 psig.

(4) The hydrogen storage system must be shipped in strong outside packaging in accordance with § 173.301(a)(9).

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 current copy of this exemption must be maintained by the grantee of this exemption and distributors of the hydrogen storage system.

c. Each packaging manufactured under the authority of this exemption 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 Exemptions and Approvals for a specific manufacturing facility.

c. 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.

e. TOHS must carry out an in-service testing plan as described below and in the Coleman Powermate letter (ref DOT-E 12650) dated December 10, 2001 on file with the OHMEA:

Canister Samples	**Pressure Reversal Cycles (each canister)**	**Test completed by ***
3	100	6 months
3	200	12 months
3	300	18 months
3	500	24 months

*** Dates are from the first date of canister production**

(1) Each canister containing hydrogen absorbed in metal hydride must be subjected to pressure reversal cycles between zero and a settled pressure of 230 - 260 psig at 70°F. At the completion of cycling, each canister must be subjected to a burst pressure test in accordance with 49 CFR § 178.46(c)(5)(ii).

(2) TOHS must submit test results to OHMEA within 14 days of the completion of each six month phase. Test results must include number of cycles completed, cycling pressure, mode of failure, and bursting pressure.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and rail freight.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

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.:

MAR 2 4 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: WEST FREEMAN