U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

SEP 04 1992

DOT-E 9888
(FOURTH REVISION)

1. Ford Motor Company, Dearborn, Michigan, is hereby granted an exemption from certain provisions of this Department's Hazardous Materials Regulations to offer packages prescribed herein of a flammable solid for transportation in commerce subject to the limitations and special requirements specified herein. This exemption authorizes the transportation of an electric car containing a sodium-sulfur battery which is at its operating temperature (575-660°F), excepted from the Department's Hazardous Materials Regulations as provided in this exemption. The exemption also authorizes shipment of electric cars containing depleted sodium-sulfur batteries, and provides no relief from any regulation other than as specifically stated. Each of the following is hereby granted the status of a party to this exemption:

ABB Advanced Battery Systems, Inc., Ontario, Canada-PTE-1. (U.S. agent: ABB Robotics, Inc., Rochester Hills, MI.)

2. BASIS. This exemption is based on an application from Ford Motor Company dated January 9, 1992, submitted in accordance with 49 CFR 107.105 and the public proceeding thereon. The granting of party status is based on the following application submitted in accordance with 49 CFR 107.111 and 107.105 and the public proceeding thereon:

ABB Advanced Battery Systems Incorporated's applications dated November 8, 1991 and supplemental letters dated January 3, and March 17, 1992.

3. HAZARDOUS MATERIALS (Descriptor and class). Sodium metal, molten, or sodium metal both classed as flammable solid.

4. PROPER SHIPPING NAME (49 CFR 172.101). None required by this exemption.

5. REGULATION AFFECTED. 49 CFR Parts 100 through 199.

6. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle, rail freight, cargo vessel and cargo aircraft only.

7. SAFETY CONTROL MEASURES. The molten sodium must be contained in an hermetically sealed cylindrical casing constructed of steel, B-alumina and aluminum as shown in the application for exemption. Each cell may not contain more than 50 grams of sodium. Not more than 480 cells may be placed in a battery casing constructed of two stainless steel boxes, one within the other. The steel of which the boxes are made must be at least 0.06" thick and the space between filled with magnesium oxide or fiberglass. Each battery must be enclosed in a double-walled, stainless steel, thermally insulated box. Alternatively, the batteries may be constructed as follows: The sodium is contained in 2 concentric aluminum cylinder (the sodium cartridge). The sodium cartridge containing up to 60 grams of sodium is fitted into the cylindrical B-alumina electrolyte which itself is surrounded by 104 grams of sulphur and the aluminum cylindrical outer can. The cell is hermetically sealed. The cells are embedded in a matrix of a sand-like material which surrounds the cells on all sides. This sand is fixed with a binder so that the assembly of typically 480 cells forms a brick-like structure totally enclosing the cells and their electrical interconnections. The solid brick-like cell is contained in a double walled stainless steel insulated box. The steel in the boxes must be at least 0.06-inches thick and the space between filled with fiberglass or similar insulating material. The batteries must be securely fastened in any automobile. The automobile will then be placed in another highway vehicle for transportation. All packagings mentioned above must be as described in the application for exemption.

8. SPECIAL PROVISIONS.

a. A copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

b. Drivers must have been instructed as to necessary safeguards and proper procedure in the event of unusual delay, fire, or accident.

c. The automobile containing the batteries must be transported by private motor vehicle.

9. REPORTING REQUIREMENTS. Any incident involving loss of packaging contents and packaging failure must be reported to the Associate Administrator for Hazardous Materials Safety as soon as practicable. (49 CFR 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.)

10. EXPIRATION DATE. November 30, 1993.

Issued at Washington, D.C.:

SEP 0 4 1992
(DATE)

Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety

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

Dist: FHWA.