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

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

DOT-E 9176 (EXTENSION)
SECOND REVISION January 8, 1987

In accordance with 49 CFR 107.105 of the Department of Transportation (DOT) Hazardous Materials Regulations DOT-E 9176 is hereby extended for the party(ies) listed below by changing the expiration date in paragraph 10 to October 31, 1995. This change is effective from the issue date of this extension. All other terms of the exemption remain unchanged.

This extension applies only to party(ies) listed below based on the application(s) received in accordance with 49 CFR 107.105. This extension constitutes a necessary part of this exemption and must be attached to it.

Suzanne Hedgepeth

Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

NOV 30 1993
(DATE)

Dist: FHWA

EXEMPTION HOLDER	APPLICATION DATE
Minnesota Valley Engineering, Inc. New Prague, MN	October 20, 1993

ADVISORY

IF YOU ARE A HOLDER OF AN EXEMPTION THAT AUTHORIZES THE USE OF A PACKAGING WITH A MAXIMUM CAPACITY LESS THAN 450 L (119 GALLONS) OR A MAXIMUM NET MASS LESS THAN 400 KG (882 POUNDS), PLEASE BE ADVISED THAT YOUR EXEMPTION MAY NOT BE RENEWED BEYOND SEPTEMBER 30, 1996. IN ADDITION, NO NEW CONSTRUCTION OF PACKAGINGS WHICH FALL WITHIN THE NON-BULK CAPACITIES LISTED ABOVE ARE AUTHORIZED AFTER SEPTEMBER 30, 1994. THIS IS CONSISTENT WITH THE IMPLEMENTATION OF THE NEW PACKAGING REQUIREMENTS ADOPTED UNDER DOCKET HM-181. ANY APPLICATION SUBMITTED TO THIS OFFICE TO RENEW AN EXEMPTION BEYOND THE SEPTEMBER 30, 1996 DATE WILL BE DENIED UNLESS THE APPLICATION CONTAINS SUPPORTING INFORMATION TO JUSTIFY THE CONTINUATION OF THE EXEMPTION.

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400 Seventh St., S.W.
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DOT-E 9176
(SECOND REVISION)

JAN 8 1987

1. Minnesota Valley Engineering, New Prague, Minnesota, is hereby granted an exemption from those provisions of this Department's Hazardous Materials Regulations specified in paragraph 5 below to manufacture, mark, and sell the packaging described in paragraph 7 below for use in the transportation of the nonflammable gases described in paragraph 3 below in commerce subject to the requirements specified herein. This exemption authorizes the use of a DOT Specification 4L cylinder for certain specified gases; provides for permanent mounting in the horizontal position; and filling and discharging without removal from the vehicle; and provides no relief from any regulation other than as specifically stated.

2. BASIS. This exemption is based on Minnesota Valley Engineering's applications dated December 15, 1985 and March 31, 1986, submitted in accordance with 49 CFR 107.105 and 107.103 and the public proceeding thereon.

3. HAZARDOUS MATERIALS (Descriptor and class). Carbon dioxide, refrigerated liquid, classed as a nonflammable gas.

4. PROPER SHIPPING NAME (49 CFR 172.101). Carbon dioxide, refrigerated liquid.

5. REGULATION AFFECTED. 49 CFR 173.304(a), 177.840(a)(1).

6. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle.

7. SAFETY CONTROL MEASURES. Packaging prescribed is a horizontally mounted DOT specification 4L (49 CFR 178.57) welded cylinder horizontally mounted on a motor vehicle in conformance with drawings C-22655 Rev. A and D, and C-22642 Rev. A.

a. Each cylinder must conform with the following drawings and related calculations submitted to and on file with the Office of Hazardous Materials Transportation (OHMT).

Model	MCDU 400	MCDU 400A	MCDU 500	MCDU 533
Drawing	L-19804 C-22484	D-22602-C D-22484 or D-25801-A	D-22602-C D-22484 or D-25801-A	L-19804 D-22484 or D-25801-A
Inner tank material	SA 240 Type 304 Stainless steel			
Jacket material	A 285 carbon steel or equivalent.			
Inner tank diameter-inches	18	18	18	18
Jacket diameter-inches	20	20	20	20
Length - inches	58.25	55.625	67.625	73.75
Design pressure - (psig)	92	272	272	292
Shell thickness - inch	0.135	0.120	0.120	0.135
Head thickness - inch	0.118	0.108	0.108	0.118
Water capacity - gallons	48	47	60	66

b. The maximum allowable filling density must be as follows:

Pressure Relief Valve Setting - psig	Per Cent - Filling Density CO_2
325 to 350	97.0

c. Each cylinder must be protected with at least one pressure relief valve and at least one frangible disc complying with 49 CFR 173.34(d). The relieving capacity of the safety devices must be in accordance with CGA Pamphlet S-1.1 on a bare tank basis. Inlet to pressure relief valve must be in vapor space near the horizontal centerline.

d. Cylinders models MCDU-400 and MCDU-533 may no longer be used under this exemption after April 30, 1985.

8. SPECIAL PROVISIONS.

a. Shippers may use the packaging covered by this exemption pursuant to 49 CFR 173.22a.

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

c. Each cylinder must be plainly marked on both sides near the middle, in letters at least two inches high on a contrasting background, "DOT-E 9176."

d. The temperature of the lading at the time of loading must not exceed 0°F. (291 psig) for carbon dioxide for a maximum travel time not exceeding 120 hours.

e. The cylinder must be permanently mounted underneath a semitrailer in accordance with drawings and sketches submitted. The cylinder and its mounting shall be designed to withstand static loading in any direction equal to 2 times the weight of the loaded cylinder using a safety factor of not less than 4 based on the ultimate strength of the material.

f. The cylinder may be filled using full trycock method.

g. The filling (or discharge) hose may be transported under pressure subject to the following conditions:

(1) The hose is enclosed in a metal housing and the door to this housing is locked during tranportation.

(2) The driver must have been instructed as to necessary safeguards and proper procedure for operating the system.

(3) The hose is protected by pressure relief valves set to open at 375 psig.

h. The cylinder and its attachments must be visually inspected at least once per year for corrosion and deterioration. In addition, the cylinder must be removed from the semitrailer and visually inspected at least once every 5 years.

9. REPORTING REQUIREMENTS. Any incident involving loss of contents of the package must be reported to the OHMT as soon as practicable.

10. EXPIRATION DATE. February 1, 1988.

Issued at Washington, D.C.:

JAN 8 1987

Alan I. Roberts
Director
Office of Hazardous Materials Transportation

(DATE)

Address all inquiries to: Director, Office of Hazardous Materials Transportation, Research and Special Programs Administration, U.S. Department of Transportation, Washington, D.C., 20590. Attention: Exemptions Branch.

Dist: FHWA, FRA