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

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

APR 13 2000

DOT-E 10327
(EIGHTH REVISION)

EXPIRATION DATE: March 31, 2002

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: CTI-Cryogenics Division of Helix Technology Corp. Mansfield, MA

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the manufacture, marking, sale and use of a refrigeration system consisting of accumulators and components containing helium for transportation in commerce, subject to the limitations specified herein. This exemption provides no relief from any regulation 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 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 § 173.306(f)(1) in that the refrigeration system deviates from the safety factor requirements; § 173.306(f)(2)(iii) in that the accumulators deviate from the testing requirements; § 173.306(f)(3) in that the accumulators do not meet the safety factor requirements or the requirements of § 173.306(f)(2)(iii); and § 175.3 in that a non-DOT specification packaging is authorized.

5. BASIS: This exemption is based on the application of CTI-Cryogenics dated March 16, 2000, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identi-fication Number	Packing Group
Accumulator containing helium -- Accumulator, pressurized, pneumatic or hydraulic	2.2	NA1956	N/A
Helium, compressed	2.2	UN1046	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed is a non-DOT specification packaging which is a refrigeration system (compressors or expander chambers) consisting of various accumulators and components (adsorbers or hose sets) described below.

ITEM	DESCRIPTION	MAX.VOL (Cu.Ft)	SHIPPING PRES.	RATIO[1]	MATERIAL
1A	SC Compressor (Air)	0.363	250	4.8	C'steel
B	8300 Compressor	0.375	250	4.8	C'steel
C	9600 Compressor	0.510	250	6.8	Stainless
D	8200 Compressor	0.363	250	6.6	C'Steel
2A	Hose Set	0.025/ft	260	4.6	Stainless
3A	Adsorber	0.191	265	4.5	C'Steel
B	Adsorber	0.191	265	4.5	C'Steel
C	Adsorber	0.191	265	4.5	C'Steel
D	Adsorber	0.191	265	4.5	C'Steel
4A	Model 350 Expander Chamber	0.028	250	4.8	Stainless
B	Model 22 Expander Chamber	0.014	250	4.8	Stainless
C	Model 1020 Expander Chamber	0.035	200	6.0	Stainless
D	Model 1050 Expander Chamber	0.033	200	6.0	Stainless

Ratio[1] = Minimum burst pressure/shipping pressure

b. During transportation the system must be protected by a pressure relief device set to discharge at not more than 110 percent of its maximum operating pressure.

8. SPECIAL PROVISIONS:

a. Refrigeration systems (Items 1A through 1D and Items 4A through 4D) are considered to be assembled machinery and are not subject to the requirements of the Hazardous Materials Regulations.

b. 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.

c. 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.

d. Packages containing accumulators and components listed in paragraph 7(a) of this exemption which are not installed in the refrigeration system must be prepared and shipped in accordance with the following:

(1) The accumulator and components need not be tested prior to each shipment as prescribed in § 173.306(f)(2).

(2) Accumulators and components must be packed in a strong outside packaging as prescribed in § 173.301(k).

(3) Each outside packaging must be marked "INSIDE CONTAINERS COMPLY WITH DOT-E 10327".

(4) Packages are excepted from labeling except when offered for transportation by air.

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

f. 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.

g. 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.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo aircraft only, and passenger-carrying aircraft.

10. MODAL REQUIREMENTS: 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 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, 49 CFR Parts 171-180.

- 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 in 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 at Washington, D.C.:

Ann Mazzullo APR 13 2000

for Robert A. McGuire (DATE)
Acting 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.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, SW, Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: sln00