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LaValle, Diane

From: Jim Rader [Rader@Alltranstek.com]

Sent: Sunday, September 19, 2004 9:48 PM

To: Exemptions@rspa.dot.gov

Cc: BBARTLEY1@dow.com; DMBrown2@dow.com; droutdw@dow.com; PMWhisler@dow.com

Subject: Dow Chemical Company; HOC Exemption Application

Please find attached an exemption application for Dow Chemical Company. The exemption asks for relief from the gross weight on rail requirement for the transportation of certain halogenated organic compounds listed in 173.31(f). RSPA has issued several other exemptions concerning this subject matter for materials with an equal or greater level of hazard.

If you have any questions, please contact me.

Jim

ALLTRANSTEK
TRANSPORTATION MANAGEMENT & CONSULTING

James H. Rader
Vice President Technical Support Group
AllTranstek L.L.C.
1101 31st Street, Suite 200
Downers Grove, Illinois 60515
630.829.9125 (office)
630.881.0309 (mobile)
630.839.0277 (efax)

September 19, 2004

Robert A. McGuire
Associate Administrator for Hazardous Materials Safety
Research and Special Programs Administration
U.S. Department of Transportation
400 Seventh Street, S.W.
Attention: DHM-31
Washington, D.C. 20590-0001

Re: Application for an Exemption

Dear Mr. McGuire:

In accordance with 49 CFR 107.105, AllTranstek, on behalf of the Dow Chemical Company, requests authorization to operate DOT 112S specification tank cars, for certain identified hazardous materials (halogenated organic compounds [hazardous substances]), that are manufactured to and marked with a maximum gross weight on rail at 286,000 pounds.

Name, mailing address, and telephone number of the applicant: AllTranstek L.L.C. submits the following contact information:

Applicant	Agent
Brian Bartley and David Drout	James H. Rader
Dow Chemical Company	AllTranstek L.L.C.
2030 Dow Center	1101 W. 31st Street, Suite 200
Midland, Michigan 48674	Downers Grove, Illinois 60515
989.636.7257	630.829.9125
519.339.3283	630.881.0309 (mobile)

State the citation(s) of the specific regulation from which relief is sought: 49 CFR 172.203(a), 173.26, and 179.13.

Transport mode(s): Rail.

Description of exemption proposal: AllTranstek, on behalf of the Dow Chemical Company, requests authorization to operate DOT 112S specification tank cars, for certain hazardous materials (halogenated organic compounds [hazardous substances]), that are manufactured to and marked with a maximum gross weight on rail at 286,000 pounds. The exemption would authorize a 10-percent increase in the gross rail load; where part of the increase will improve both structural integrity and the crashworthiness of the tank. The current regulations authorize the use of tank cars with a 200 psig test pressure. Dow Chemical Company proposes to use tank cars

having at least a 340 psig test pressure; which equates to a thicker tank shell and consequently greater puncture resistance.

Identification and description of the hazardous material: Hazardous materials identified in 49 CFR 173.31(f) authorized by the Department of Transportation for use in Class DOT 112S specification tank cars. These materials include, for example:

Hazardous Material	Hazard Class
Carbon tetrachloride	6.1 PG II
Chloroform	6.1 PG III
2,4-Dichlorophenol	6.1 (8) PG II
Ethylene dichloride	3 PG II
Methylene chloride (Dichloromethane)	6.1. PG III
Perchloroethylene (Tetrachlorethylene)	6.1 PG III
1,2-dichloropropane (propylene dichloride)	3 PG II
Tetrachloroethane	6.1 PG II
Trichloroethylene	6.1 PG III
Vinylidene chloride	3 PG I

Procedural elements to achieve an equivalent level of safety: If RSPA authorizes the manufacture and use of tank cars built to this proposal, the cars will exceed current regulatory levels of safety. Each tank car will conform to the Association of American Railroad's Manual of Standards and Recommended Practices, Manual C-II, Specification S-286, and to the Federal Railroad Administration and Transport Canada's white paper "Maximizing Safety and Weight." RSPA has issued previous exemptions to other car owners and users that ship materials having an equal or greater safety hazard:

- E 11241
- E 11654
- E 12126
- E 12368
- E 12423
- E 12561
- E 12613
- E 12768
- E 12858
- E 12903

Current federal regulations authorize the transportation of certain "listed" hazardous substances in DOT Class 112S tank cars having a tank test pressure of 200 psig, provided such cars also have an 11-guage metal jacket.[1] As an alternative, the regulations authorize the use of a tank car having a test pressure of 200 psig *without* a metal jacket when manufacturing the tank from normalized AAR TC-128 Grade B steel plate.[2] Dow Chemical Company proposes to have built DOT 112S specification tank cars having a test pressure of 340 psig. In constructing the cars, Dow Chemical Company will specify normalized AAR TC-128 Grade B steel plate. As built, these cars will exceed the federal requirement with respect to tank and head thickness to improve the overall product containment characteristics of the tank in both accident and non-accident environments. The manufactured tank cars will also have several structural enhancements to improve the overall fatigue life of the structure and enhancements to improve the trackworthiness of the car over various track conditions. Such enhancements include robust "stub-sills," draft components having a greater actual capacity, and truck components designed for a 286,000 pound gross rail load.

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[1] See 173.31(f).

[2] ibid.

Current Exemptions and Transport Canada Special Permits Issued: Dow Chemical Canada, Incorporated currently is the holder of a Transport Canada Special Permit (SR 5165) for the operation and use of DOT 112S200W specification tank cars in an identical service.

Relevant shipping and incident experience: Dow Chemical Canada was issued a Transport Canada Special Permit (SR 5165) to handle, offer for transport, and to transport ethylene dichloride in a manner that does not comply with sections 31.1.3 of the National Standard of Canada CAN/CGSB-43.147-2002, *Construction, Modification, Qualification, Maintenance, and Selection and Use of Means of Containment for the Handling, Offering for Transport, or Transporting of Dangerous Goods by Rail*, regarding the maximum gross weight on rail.[3] Tank cars covered by the permit are in compliance with specification TC 112S200W, except that the maximum gross weight is 286,000 pounds gross weight on rail (130,000 kg). [4]

Over the last several years, Dow Chemical Canada has offered several thousand shipments of ethylene dichloride for transportation. For each of these shipments, there were no specific failures identified. Of special note, cars built under this DOT exemption application will have greater structural integrity and crashworthiness protection then the cars currently operating in Canada under Special Permit SR 5165 as a result of the thicker tank shells.

Exemption Number Markings and Shipping Paper: If approved, the exemption would authorize the manufacture and use of tank cars operated at 286,000 pound gross rail load without marking the exemption number on each shipping paper. Each car would, however, have the exemption number clearly marked, as required, on each side of the tank car near the DOT specification marking.

Duration of the exemption: AllTranstek L.L.C. and Dow Chemical Company request an exemption of no less than two years.

Description of packaging prescribed: The packagings prescribed under this application consist of DOT 112S specification tank cars exceeding the requirements of 49 CFR 179 Subpart C, and meeting the Association of American Railroad's Manual of Standards and Recommended Practices, Manual C-II, Specification S-286, and the Federal Railroad Administration and Transport Canada's white paper "Maximizing Safety and Weight." In summary, the construction of these tank cars would include:

1. Puncture Resistance: AAR TC128 Gr. B, normalized heads and tank shell at 9/16-inches thick.

2. Head shields: Conforming to the requirements at 49 CFR 179.16.

3. Controlling Longitudinal Loadings: Cardwell Westinghouse Mark 325, Minor TF-880, or equivalent draft gears to attenuate the rail yard and in-train compressive and axial forces on the tank car structure.

4. Structuralworthiness: Stub-sill designed and built to a million mile fatigue life, calculated by applying an overall load factor of 1.09 to those designs approved for gross rail loads at 263,000 pounds.

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[3] Ethylene dichloride is a halogenated organic compound (HOC) listed at 49 CFR 173.31(f). Transport Canada adopted an identical list as DOT for the transportation of these HOC's. Under the DOT regulations, these materials are designated as a hazardous substance and require the use of tank cars that have greater crashworthiness in accidents.

[4] TC 112S200W tank cars are identical in all respects to DOT 112S200W specification tank cars.

5. Trackworthiness: Trucks are variable-dampened type: Barber S-2-E, S-2-HD, ASF Motion Control, or equivalent to improve ride quality and overall truck performance.

6. Pressure Relief Device: Re-closing pressure relief device designed and tested in accordance with 49 CFR 179.15.

7. Service Equipment Protection: Top fitting protection designed to the Department of Transportation's requirements at 49 CFR 179.100- 12(c) and the Association of American Railroad's Manual of Standards and Recommended Practices, Manual C-III, Appendix E, Paragraph 10.2.

8. Capacity: Each tank will have an approximate capacity of 23,000 United States gallons, or less.

Requests that Differ from Previous Issued Exemptions Coving the Same Subject Matter:

1. Location of Exemption: RSPA generally requires that each location that offers a package into transportation covered by an exemption maintain a copy of the exemption. The general basis is to ensure that the package "design" criterion is met. This application requests permission for AllTranstek and the Dow Chemical Company to maintain the exemption and to make it available to all interested parties. The nature of this request is based on the fact that tank cars may arrive at any number of locations governed by market demand and business practices. Maintaining a copy of an exemption that authorizes increased weight limitations at locations that only reoffer the same package containing only a residue of the material provides no material basis, since the package will not exceed the regulatory weight or capacity limitations to which the exemption was issued (e.g., 286,000 gross rail load or 34,500 capacity). In general, persons who reoffer packages only containing the residue of a hazardous material are not concerned with the regulatory duty to ensure that the package does not exceed the regulatory maximum for weight and capacity; therefore, knowledge of the exemption is inconsequential.

2. AAR S-286: This application references the Association of American Railroads' Manual of Standards and Recommended Practices, Manual C-II, Specification S-286. This new specification adopts improved safety features and standards recognized by industry experts as "best-in-class" practices for the manufacture and use of rail cars up to 286,000 pound gross rail loads.

3. Maintenance and Qualification Program: RSPA generally requires that applicants submit to the Federal Railroad Administration a copy of their maintenance and qualification program for cars covered by the exemption. This application requests permission for AllTranstek and the Dow Chemical Company to maintain the maintenance and qualification programs at their principle place of business and at Dow Chemical Company's maintenance locations. The nature of this request is that Dow Chemical Company's maintenance and qualification program is a "living document" that changes with respect to actuarial data, inspection findings, and failure histories. The program identifies fatigue-critical locations in the car structure and assigns maintenance tasks to ensure continuing reliability. Maintaining the maintenance and qualification program at controlled locations will also satisfy our concerns with respect to confidentiality of information as outlined in 49 CFR 105.30 and 107.105(b).

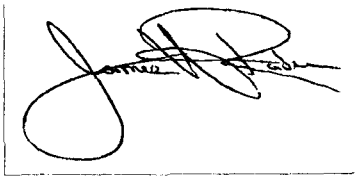
Risk assessment, level of safety, or public interests considerations: The public will not incur any increase in risk if the Department of Transportation grants this exemption. The public will incur a safety benefit if this exemption is granted through a decrease in the number of rail shipments (as a result of the greater carrying capacity); thereby reducing the overall transportation risk, and by significantly increasing the crashworthiness of the tank car from the current regulatory minimums. As discussed above, Dow Chemical Company has experienced an excellent safety record for the transportation of similar tank cars designed to 286,000 pounds

gross rail load operating in Canada. The Federal Railroad Administration, Association of American Railroads, and the Railway Supply Institute's accident performance data clearly demonstrate the improved accident performance obtained by the use of safety features outlined in this exemption application.

Security: Dow Chemical Company certifies that it is operating in conformance with the American Chemistry Council's Security Guidelines and with the Department of Transportation's security regulations.

If you have any questions on any aspect of this exemption proposal, please contact me.

Sincerely,



James H. Rader
Vice President Technical Support Group

Enclosure

DOT-E 13XXX

EXPIRATION DATE:

(FOR RENEWAL, SEE 49 CFR § 107.109

1. GRANTEE: Dow Chemical Company
Midland, Michigan

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the manufacture and use of DOT Class 112S tank cars having a maximum gross weight on rail at 286,000 pounds for the transportation of certain hazardous materials. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically provided herein.

b. The safety analysis performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107, and 171 - 180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §172.203(a) in that marking the exemption number on the shipping paper is waived; and §§ 173.26 and 179.13 in that the authorized maximum gross weight on rail is 286,000 pounds.

5. BASIS: This exemption is based on the application of AllTranstek L.L.C., submitted on behalf of the Dow Chemical Company, dated September 19, 2004, submitted in accordance with §107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

All hazardous materials identified in 173.31(f) and authorized by the Department of Transportation for use in Class DOT 112S tank cars.

7. SAFETY CONTROL MEASURES:

a. PACKAGING:

i. Packaging prescribed are Class DOT 112S tank cars having a tank test pressure of 340 psig.
ii. The packagings prescribed under this application exceed the requirements of 49 CFR 179 Subpart D, and meet the Association of American Railroad's Manual of Standards and

Recommended Practices, Manual C-II, Specification S-286. In summary, the construction of these tank cars would include:

1. Puncture Resistance: AAR TC128 Gr. B, normalized heads and shell at 9/16-inches thick.

2. Head shields: Conforming to the requirements at 49 CFR 179.16.

3. Controlling Longitudinal Loadings: Cardwell Westinghouse Mark 325 or Minor TF-880 draft gears to attenuate the rail yard and in-train compressive and axial forces on the tank car structure.

4. Structuralworthiness: Stub-sill designed and built to a million mile fatigue life, calculated by applying an overall load factor of 1.09 to those designs approved for gross rail loads at 263,000 pounds.

5. Trackworthiness: Trucks are variable-dampened type: Barber S-2-E, or alternative S-2-HD or ASF Motion Control, to improve ride quality and truck performance.

6. Pressure Relief Device: Re-closing pressure relief device designed and tested in accordance with 49 CFR 179.15.

7. Service Equipment Protection: Top fitting protection designed to the Department of Transportation's requirements at 49 CFR 179.100-12(c) and the Association of American Railroad's Manual of Standards and Recommended Practices, Manual C-III, Appendix E, Paragraph 10.2.

8. Capacity: Each tank will have an approximate capacity of 23,000 United States gallons, or less.

iii. Each tank car may be loaded to a maximum gross weight on rail of 286,000 pounds, provided that the tank is not loaded in excess of the amount authorized per § 173.24b.

b. MARKING: - Each tank car operating under the terms of this exemption must be marked "DOT-E 13XXX" in four-inch letters and numerals on a contrasting background above the DOT Specification number.

8. SPECIAL PROVISIONS:

a. A person who is not the holder of this exemption who 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 reoffed for transportation in conformance with this exemption and the HMR.

b. A current copy of this exemption must be maintained by AllTranstek L.L.C., and the Dow Chemical Company and made available to interested parties.

c. Each tank car must meet the Association of American Railroads, Manual of Standards and Recommended Practices, Manual C-II, Specification S-286, effective January 1, 2004. The AAR or an individual rail carrier may impose more stringent operating and design requirements. The applicant and the railroads must ensure that transit routes are capable of supporting 286,000 gross rail loads.

d. The additional information requirement for shipping papers in §172.203(a) is waived.

e. The applicant shall make available its complete maintenance and qualification program to the Federal Railroad Administration upon request (see the Association of American Railroads' Manual of Standards and Recommended Practices, Manual C-111, Recommended Practice RP-263). The maintenance program must incorporate structurally significant items that may be adversely affected by the increase rail load to ensure the continual fitness-for-service of the component based on the inspection method and the inspection interval specified in the maintenance program.

9. MODES OF TRANSPORTATION AUTHORIZED: Rail freight.

10. MODAL REQUIREMENTS: The applicant must notify the Federal Railroad Administration if any unusual incident occurs during the movement by contacting:

Federal Railroad Administration
Hazardous Materials Division
RRS-12, Mail Stop 25
1120 Vermont Avenue, N.W.
Washington, D.C. 20590
(202) 493-6229 or 493-6247

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.
- 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 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 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 incident involving the package and shipments made under the terms of this exemption.)

Issued in Washington, D.C.:

_____ _____

Robert A. McGuire (DATE)
Associate Administrator for
Hazardous Materials Safety

Address all inquires 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 the exemption is prohibited.

PO: FG/AM