

OCT 17 1995

Continuation of 2nd REV DOT E-11335

Page 3

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.

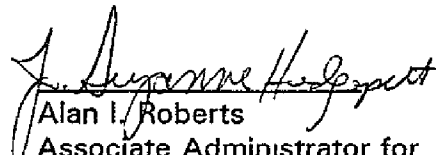
The original of this exemption is on file at the above office.
Photo reproductions and legible reductions of this exemption are
permitted. Any alteration of this exemption is prohibited.

Dist: FRA

APPENDIX A

The following are hereby granted party status to this exemption based on their applications submitted in accordance with 49 CFR 107.111 and the public proceeding thereon or 107.105, as appropriate:

Company Name City/State	Application Date	PTE #	Issue Date
Union Tank Car Company East Chicago, IN	July 13, 1995	1	OCT 17 1995


Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety



Union Tank Car Company

151st & Railroad Avenue
East Chicago, Indiana 46312
219/392-1500

10/10/95
91
DOT/RSPA/DHMS
EXEMPTIONS & APPROVALS
95 SEP 28 11:19:01

September 22, 1995

Mr. Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety
Research and Special Programs Administration
U.S. Department of Transportation
400 Seventh Street, SW
Washington, DC 20590-0001

Subject: DOT Exemption E-10717

Dear Mr. Roberts:

This petition is a request for relief from the requirement in Section 8.C. where "A current copy of this exemption is to be maintained at each facility from which a reoffering occurs."

The exemption, which addresses tank retest intervals, imposes no loading, unloading or operating restriction to shippers therefore maintaining a copy is of no real value to them.

The exemption covers approximately 500 tank cars and is not dedicated to any particular shipper. The requirement for shippers to have a current copy on hand imposes an unreasonable hardship for them in trying to accommodate this provision.

Sincerely,

Wayne T. Gose
AAR Rules Coordinator

WTG/mc



A member of The Marmon Group of companies



US Department
of Transportation
**Research and
Special Programs
Administration**

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

DOT-E 10717
(SECOND REVISION)

AUG 2 1995

EXPIRATION DATE: January 31, 1997

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: Union Tank Car Company, East Chicago, Indiana
(See Appendix A of this exemption)
2. PURPOSE AND LIMITATION: This exemption authorizes a modified periodic test schedule for certain DOT specification tank cars, and provides no relief from any regulations other than as specifically stated.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.31(c); 173.31 Retest Table 1.
5. BASIS. This exemption is based on Union Tank Car Company's application dated March 25, 1994 submitted in accordance with 49 CFR 107.103 and the public proceeding thereon and April 27, 1995, submitted in accordance with 49 CFR 107.105. (See Appendix A of this exemption)
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous materials description/proper shipping name	Hazard Class or Division	Identification number	Packing Group
Sulfuric acid	8	UN1830	II
Sulfuric acid, spent	8	UN1832	II
Sulfuric acid, fuming <i>less than 30 percent free sulfur trioxide</i>	8	UN1831	I

7. PACKAGING(S) and SAFETY CONTROL MEASURES:
 - a. PACKAGING - Packaging prescribed are DOT Specification 111A60W2 and 111A100W2 tank cars meeting all DOT requirements.

b. TESTING

i. The following periodic pressure test schedule is authorized for tank and interior heater systems, if any, for tank cars offered for transportation under the terms of this exemption:

Specification	Retest interval years for Tank and interior heater system ¹		
	Up to 10 years	Over 10 to 22 years	Over 22 years
DOT111A60W2	5	3	3
DOT111A100W2	5	3	3

¹ For non-lined or non-coated tank cars, an interval based on the following formula, but in no case shall the interval exceed the intervals specified above

$$i = \frac{t_1 - t_2}{r}$$

where:

- i means the inspection and test interval
- t₁ means the actual thickness
- t₂ means the allowable minimum thickness specified in 49 CFR Part 179
- r means the corrosion rate per year

ii. The provisions specified in footnotes "d", "j", and "q" of 173.31(c) apply.

c. MARKING - Each tank car must be marked "DOT-E 10717" in four inch letters and numerals, on a contrasting background, above the DOT specification number.

8. SPECIAL PROVISIONS.

a. Union Tank Car Company shall notify the Office of Hazardous Materials Exemptions and Approvals, in writing, of the tank car reporting marks, prior to offering any tank car for transportation under the terms of this exemption.

b. Each lined tank car must have been constructed with a plate thickness (shell and head) of 1/2 inch which exceeds the plate thickness requirements specified in 49 CFR 179.201-1 Table. In addition, each tank car must have an acid resistant coating applied to the interior of the tank as stated in the applicant's request.

c. Each nonlined tank car must have been constructed with a plate thickness (shell and head) of 9/16 inch which exceeds the plate thickness requirements specified in 49 CFR 179.201-1 Table.

9. MODES OF TRANSPORTATION AUTHORIZED. Rail freight.10. MODAL REQUIREMENTS:

a. The Federal Railroad Administration is to be notified if any unusual incident occurs during the unloading, such as undesired movement of cars resulting in damage to property or personal injury, by contacting the:

Federal Railroad Administration
Office of Safety, RRS-12
400 Seventh Street, S.W.
Washington, D.C. 20590
(202) 366-9178 or 366-0549

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 Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Registration required by 49 CFR 107.601 et seq., when applicable.

AUG 2 1995

Continuation of 2nd Rev of DOT-E 10717

Page 4

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 unless a regulation has been amended making the exemption no longer necessary.

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. (49 CFR 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.:



Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

AUG 2 1995

(DATE)

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.

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Dist: FRA

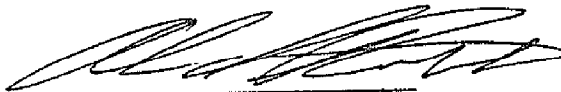
AUG 2 1995

Continuation of 2nd Rev of DOT-E 10717
APPENDIX A

Page 5

The following are hereby granted party status to this exemption based on their applications submitted in accordance with 49 CFR 107.111 and the public proceeding thereon or 107.105, as appropriate:

Company Name City/State	Application Date	PTE #	Issue Date
General Chemicals, Incorporated Parsipanny, New Jersey	April 3, 1995	1	
Procor Limited East Chicago, IN	December 1, 1994	2	March 10, 1995
General American Transportation Corporation Chicago, IL	May 2, 1995 & May 4, 1995	3	AUG 2 1995



Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety



Union Tank Car Company

151st Street & Railroad Avenue East Chicago, Indiana 46312 219 392 6247 • Fax 219 392 6277

Carl S. Hybinette
Director Welding and Fleet Repair Engineering

July 24, 1995

Office of Hazardous Material Transportation
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, DC 20590-0001

DOT/RSPA/OHNS
EXEMPTIONS & APPROVALS
95 JUL 31 PM 9:50

ATTENTION: Exemption Branch

SUBJECT: Retest Interval for DOT111A100W-6 Tank Cars

GENTLEMEN:

This petition is a request for relief from Retest Table 1 in Part 173.31 as applicable to DOT 111A100W-6 tank cars. Presently, the Table requires annual retest of these cars after age 22. We request that this interval be maintained at 3 years.

This petition is submitted by Union Tank Car Company, 151st and Railroad Avenue, East Chicago, IN 46312. Telephone No. is (219) 392-6247, attention Carl S. Hybinette.

Specifically, we request that retest interval continue at 3 years on cars that:

1. The tank material is corrosion resistant.
2. Tank interior be inspected visually for evidence of damage that may render the tank unfit for further service.
3. The tank be hydrostatically tested to at the retest pressure specified in Retest Table #1.
4. These cars have been routinely inspected and re-tested on a 3 year cycle with no evidence of deterioration or corrosion.

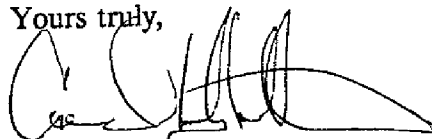
We request that this Exemption be granted for a period of 3 years, or until HM-201 becomes effective, at which time we anticipate the retest interval will become a 10 year cycle as opposed to the present 3 year cycle.

This will permit continued operation of sound tank cars, which otherwise become undesirable if retesting must be done each year, with associated more frequent cleaning, residue disposal and out-of service time.

Office of Hazardous Material Transportation
July 24, 1995
Page 2

While Union Tank Car Company is not a shipper of product, we do ship cars containing residue so we request this Exemption be granted to us so that we can stencil cars with the Exemption No. and that shippers of product be allowed to become a party to this Exemption so that they may use these cars that are so marked.

Yours truly,

A handwritten signature in black ink, appearing to read 'Carl S. Hybinette', written over a horizontal line.

Carl S. Hybinette

CSH/mc

cc: Mr. Mason B. Flagg - AAR
W. Constantino - UTC
D. Flowers - UTC

113351



Union Tank Car Company

151st Street & Railroad Avenue East Chicago, Indiana 46312 219 382 1500

**Supplement Page 2
Letter dated 7/13/95
DOT 11335**

Union Tank Car Company certifies the description, technical information and safety assessment submitted in the original application remains the same.

Union Tank Car Company certifies that we did approximately 10 testings and had zero incidents or accidents.

J Reiner



Union Tank Car Company

151st Street & Railroad Avenue East Chicago, Indiana 46312 219 392 1500

DOT/RSPA/OHMS
EXEMPTIONS & APPROVALS

95 JUL 18 PM 12:02

July 13, 1995

Associate Administrator for Hazardous Materials Safety
U.S. Department of Transportation
Washington, DC 20590 - 0001

Attention: Exemption Branch

RE: Renewal of Exemption, DOT E-11335

Dear Mr. Roberts:

DOT Exemption E-11335 was originally requested by and granted to Trinity Industries. Union Tank Car Company has been granted party status to this exemption

This exemption authorizes the use of non-destructive testing in lieu of hydrostatic testing to qualify certain weld porosity repairs to tank car tanks.

Union Tank Car Company is now requesting that this exemption be extended beyond the October 1, 1995, expiration date for a period of at least one year. Subsequent to the date of our initial filing, Union Tank Car Company has not experienced any incidents associated with this exemption

We submit this request to your office in accordance with 49 CFR 107.105 and appreciate a reply at your earliest convenience. Please forward any questions or concerns you may have to the undersigned at (219) 392-6378.

Sincerely,

Tony Warwick
AAR/DOT Coordinator



US Department
of Transportation

**Research and
Special Programs
Administration**

46 (6)

JUN 12 1995

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

DOT-E 10589
(SECOND REVISION)

EXPIRATION DATE: September 1, 1996

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. **GRANTEE:** Monsanto Chemical Company, St. Louis, Missouri
(See appendix A of this exemption for the parties to the exemption)
2. **PURPOSE AND LIMITATION:** This exemption authorizes the use of an acoustic emission non-destructive testing procedure for evaluating the continuing qualification of tanks that are mounted on or form part of a railroad freight car structure.
3. **REGULATORY SYSTEM AFFECTED:** 49 CFR Parts 106, 107 and 171-180.
4. **REGULATIONS FROM WHICH EXEMPTED:** 49 CFR 173.31(c).
5. **BASIS.** This exemption is based on Monsanto Chemical Company's application dated April 17, 1991, and supplemental letters dated October 28, 1993, December 13, 1994, and April 27, 1995 submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.
6. **HAZARDOUS MATERIALS (49 CFR 172.101):** Hazardous materials authorized in tank cars by 49 CFR Part 173; by an exemption issued under 49 CFR Subpart B of Part 107 or as authorized in accordance with 49 CFR 171.12 or 49 CFR 171.12a.
7. **PACKAGING(S) AND SAFETY CONTROL MEASURES:**
 - a. **PACKAGING:** Packagings prescribed are DOT specification tank car tanks, or tank car tanks built to an Association of American Railroads (AAR) specification, that are - in lieu of the required hydrostatic qualification test method - qualified by an acoustic emission test method.
 - b. **TESTING:**
 - i. The acoustic emission test must be in accordance with the procedures outlined in the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," Issue 4, December 1993.

- ii. For each tank designated for the acoustic emission test, details in reference to design, actual configuration, history of service, and previous test and qualification evaluation results must be documented prior to test.
 - iii. For each tank designated for the acoustic emission test, a detailed description of the sensor location arrangement and the purpose of the arrangement must be documented prior to test.
 - iv. Each tank design must have a stress analysis performed to verify that the applied loads produce sufficient stress levels throughout the tank envelope to stimulate adequate acoustic emission activity. The stress analysis must take into consideration the tank geometry; material of construction; thickness of materials; and geometrical discontinuities, such as reinforcements, pads, manways, nozzles, and outlets.
 - v. As an alternative to the stress analysis, strain gauge data must validate that the entire tank envelope is sufficiently stressed to stimulate adequate acoustic emission activity by the applied loads.
 - vi. As appropriate, the applicant shall use calculation, laboratory test evidence, stress analysis, or comparative non-destructive testing of representative tank car designs, to establish and support the adequacy and sensitivity of the acoustic emission instrumentation, the test procedure, and the cumulative signal strength category (damage detection rating system). For each car tested, the minimum detectable defect size shall be stated for the principal parts of the pressure envelope.
- c. MARKING:
- i. Each tank must be marked "DOT-E 10589" in four inch letters and numerals on a contrasting background above the tank specification number.
 - ii. After successfully passing an acoustic emission test, the tank must be marked "AE TANK TESTED" followed by the date of the test and the date of the next required test in the tank test stenciling location specified in the AAR, Specifications for Tank Cars, Specification M-1002, Appendix C.

d. In addition to the non-destructive testing procedures outlined in the AAR's "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," the following elements apply—

- i. The loading parameter (i.e., applied load, deflection or pressure) must be continuously recorded during each test.
- ii. For the jacking tests, the instrumentation must be triggered to begin data acquisition immediately upon reaching the specified upward deflection.

e. Acoustic emission testing personnel shall maintain a NDT Level I or NDT Level II certification. Employers shall establish the written company practice for qualification and certification of NDT personnel according to The American Society for Nondestructive Testing, Incorporated's Recommended Practice SNT-TC-1A. Personnel with Level I certification may perform the test, but only under the supervision of an individual maintaining at least a Level II certification. All acoustic emission testing personnel shall maintain professional competency by participating in a continuing education or professional development program, or annual refresher course, or by having an annual review by employer's acoustic emission training personnel.

8. SPECIAL PROVISIONS:

a. The grantee shall furnish the AAR Tank Car Committee all data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks." The AAR Tank Car Committee shall collect and compile the data documentation to ensure accuracy and reliability.

b. At least thirty days prior to an acoustic emission test, the exemption holder shall provide the Federal Railroad Administration (FRA) with the results of stress analysis, test procedure, supporting documentation, and the qualifications of each individual scheduled to perform the test. FRA review is required prior to performing the acoustic emission test under this exemption. This requirement is applicable, however, to the first two tank tests only, unless extended by the FRA, and is intended for the purpose of validating the applicability of requirements prescribed in this exemption.

c. For each tank that is tested under the terms of this exemption, data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," must be made available to the FRA upon request.

9. MODES OF TRANSPORTATION AUTHORIZED. Rail freight.
10. MODAL REQUIREMENTS: No modal specific requirements are required 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 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 49 CFR 107.601 et seq., when applicable.

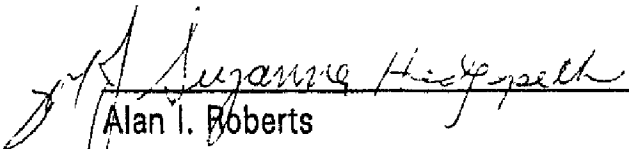
No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect unless a regulation has been amended making the exemption no longer necessary.

12. REPORTING REQUIREMENTS:

a. 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. (49 CFR 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.

b. In addition, the tank car owner is required to report to the Federal Railroad Administration, Hazardous Materials Division, any incident involving a loss of packaging contents that originated from the tank shell, by telephone, during normal business hours, at (202) 366-9252.

Issued at Washington, D.C.:



Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

JUN 12 1995

(DATE)

Continuation of 2nd Rev. DOT-E 10589

Page 5

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.

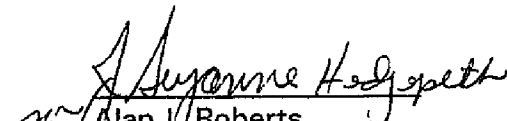
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Dist: FRA

APPENDIX A

The following are hereby granted party status to this exemption based on their applications submitted in accordance with 49 CFR 107.111 and the public proceeding thereon or 107.105, as appropriate:

Company Name City/State	Application Date	PTE #	Issue Date
Union Tank Car Company East Chicago, IN	March 23, 1994	1	September 9, 1994
Testing Associates La Honda, CA	September 19, 1991	2	September 9, 1994
Physical Acoustics Corporation Lawrenceville, NJ	May 3, 1994	3	September 9, 1994


Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety



Union Tank Car Company

151st Street & Railroad Avenue East Chicago, Indiana 46312 219 392 6247 • Fax 219 392 6277

C. 47
10717

Carl S. Hybinette
Director - Welding and Fleet Repair Engineering

April 27, 1995

TO: Ms. Sherrie Nelson
Exemption Program
Department of Transportation
Fax: (202) 366-3308

FROM: Carl S. Hybinette

SUBJECT: Exemption DOT-E-10717 - Revision 1

Pursuant to DOT E-10717 in accordance with 49 CFR 107.105 Paragraph and Paragraph 5, we request that the exemption be extended to 1/97 expiration date.

Application name: Union Tank Car Company
151st & Railroad Avenue
East Chicago, IN 46312
Carl S. Hybinette
(219) 392-6247

DOT/RSPA/OHMS
EXEMPTIONS & APPROVALS
95 MAY 15 AM 7:55

Union Tank Car Company certifies that the description, technical information, and all safety assessments submitted in the original application remain the same.

Union Tank Car company certifies that we made 5250 number of shipments and had 0 number of incidents.

All written and telephone inquiries should be addressed to Carl S. Hybinette.

Sincerely,

Carl S. Hybinette

CSH/mc
File: 234.A



US Department
of Transportation

**Research and
Special Programs
Administration**

(
48 (6)

APR 18 1995

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

DOT-E 10589
FIRST REVISION

EXPIRATION DATE: September 1, 1996

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: Monsanto Chemical Company, St. Louis, Missouri
(See appendix A of this exemption for the parties to the exemption)
2. PURPOSE AND LIMITATION: This exemption authorizes the use of an acoustic emission non-destructive testing procedure for evaluating the continuing qualification of tanks that are mounted on or form part of a railroad freight car structure.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.31(c).
5. BASIS. This exemption is based on Monsanto Chemical Company's application dated April 17, 1991, and supplemental letters dated October 28, 1993 and December 13, 1994, submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR 172.101): Hazardous materials authorized in tank cars by 49 CFR Part 173; by an exemption issued under 49 CFR Subpart B of Part 107 or as authorized in accordance with 49 CFR 171.12 or 49 CFR 171.12a.
7. PACKAGING(S) AND SAFETY CONTROL MEASURES:
 - a. PACKAGING: Packagings prescribed are DOT specification tank car tanks, or tank car tanks built to an Association of American Railroads (AAR) specification, that are - in lieu of the required hydrostatic qualification test method - qualified by an acoustic emission test method.
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 - i. The acoustic emission test must be in accordance with the procedures outlined in the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," Issue 4, December 1993.

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 - v. As an alternative to the finite element analysis, strain gauge data must validate that the entire tank envelope is sufficiently stressed to stimulate adequate acoustic emission activity by the applied loads.
 - vi. As appropriate, the applicant shall use calculation, laboratory test evidence, stress analysis, or comparative non-destructive testing of representative tank car designs, to establish and support the adequacy and sensitivity of the acoustic emission instrumentation, the test procedure, and the cumulative signal strength category (damage detection rating system). For each car tested, the minimum detectable defect size shall be stated for the principal parts of the pressure envelope.
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d.. In addition to the non-destructive testing procedures outlined in the AAR's "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," the following elements apply—

- i. The loading parameter (i.e., applied load, deflection or pressure) must be continuously recorded during each test.
- ii. For the jacking tests, the instrumentation must be triggered to begin data acquisition immediately upon reaching the specified upward deflection.

e. Acoustic emission testing personnel shall maintain a NDT Level I or NDT Level II certification. Employers shall establish the written company practice for qualification and certification of NDT personnel according to The American Society for Nondestructive Testing, Incorporated's Recommended Practice SNT-TC-1A. Personnel with Level I certification may perform the test, but only under the supervision of an individual maintaining at least a Level II certification. All acoustic emission testing personnel shall maintain professional competency by participating in a continuing education or professional development program, or annual refresher course, or by having an annual review by employer's acoustic emission training personnel.

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a. The grantee shall furnish the AAR Tank Car Committee all data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks." The AAR Tank Car Committee shall collect and compile the data documentation to ensure accuracy and reliability.

b. At least thirty days prior to an acoustic emission test, the exemption holder shall provide the Federal Railroad Administration (FRA) with the results of stress analysis, test procedure, supporting documentation, and the qualifications of each individual scheduled to perform the test. FRA review is required prior to performing the acoustic emission test under this exemption. This requirement is applicable, however, to the first two tank tests only, unless extended by the FRA, and is intended for the purpose of validating the applicability of requirements prescribed in this exemption.

c. For each tank that is tested under the terms of this exemption, data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," must be made available to the FRA upon request.

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10. MODAL REQUIREMENTS: No modal specific requirements are required by this exemption.
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- b. In addition, the tank car owner is required to report to the Federal Railroad Administration, Hazardous Materials Division, any incident involving a loss of packaging contents that originated from the tank shell, by telephone, during normal business hours, at (202) 366-9252.

Issued at Washington, D.C.:



Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

APR 18 1995

(DATE)

APR 18 1995

Continuation of DOT E-10589 (1st Rev.)

Page 5

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.

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Dist: FRA

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Testing Associates La Honda, CA	September 19, 1991	2	September 9, 1994
Physical Acoustics Corporation Lawrenceville, NJ	May 3, 1994	3	September 9, 1994

Alan V. Roberts
 Alan V. Roberts
 Associate Administrator for
 Hazardous Materials Safety



Union Tank Car Company

151st & Railroad Avenue
East Chicago, Indiana 46312
219/392 1500

49 11335-
DOT/RSPA/OHMS
EXEMPTIONS & APPROVALS

95 FEB 17 PM 2:46

February 6, 1995

Mr. Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety
U.S. Department of Transportation
Washington, DC 20590-0001

Attention: Exemptions Branch, DHM 31

Dear Mr. Roberts:

On October 25, 1994, Union Tank Car Co. submitted a request to be made a party to Exemption DOT E-11335. This exemption was originally granted to Trinity Industries, Dallas, TX, authorizing the use of nondestructive testing techniques, in lieu of hydrostatic test to qualify repairs of DOT specification tank cars.

Union Tank Car Company wished to modify our initial request to also include our subsidiary Procor Limited as a party to Exemption E-11335.

Sincerely,

Wayne T. Gose
AAR Rules Coordinator

WTG/mc

cc: BJ Damiani
CS Hybinette
S. Wong - Procor Limited



A member of The Marmon Group of companies



US Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street S W
Washington D C 20590

DOT-E 11335
(FIRST REVISION)

EXPIRATION DATE: October 1, 1995

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: Trinity Industries, Incorporated, Dallas, Texas
(SEE APPENDIX A OF THIS EXEMPTION)
2. PURPOSE AND LIMITATION: This emergency exemption authorizes the use of non-destructive testing techniques, in lieu of a hydrostatic test, to qualify repairs of DOT Specification tank car tank. This exemption provides no relief from any regulation other than as specifically stated.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: The provisions of 49 CFR Appendix B to Subpart B of Part 107 entitled Packages, Containers, Shipments; and 173.31(c)(9).
5. BASIS. This emergency exemption is based on Trinity Industry, Incorporated's application of October 6, 1994, submitted in accordance with 49 CFR 107.113, and a determination that it is necessary to prevent serious economic loss. (SEE APPENDIX A OF THIS EXEMPTION)
6. HAZARDOUS MATERIALS (49 CFR 172.101): The proper shipping description authorized under the terms of this exemption shall be as specified in 49 CFR Part 172, an exemption issued under 49 CFR Subpart B of Part 107 or as authorized in accordance with 49 CFR 171.12 or 49 CFR 171.12a.
7. PACKAGING(S) and SAFETY CONTROL MEASURES:
PACKAGING. Tank cars must conform to 49 CFR Parts 173 and 179 and successfully pass the initial hydrostatic test after construction. After passing the initial hydrostatic test, there is no requirement to perform a hydrostatic test to qualify a weld porosity repair if:
 - (a) The depth of a defect, including metal removed during the repair, does not exceed half the required tank thickness;
 - (b) Spacing of the defects may not be closer than that defined as acceptable for subsurface porosity in Appendix W of the Association of American Railroads

FEB 10 1995

Continuation of 1ST REV DOT E-11335

page 2

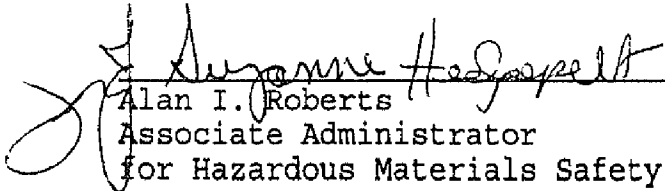
- (c) The integrity of the repair is verified by the use of a nondestructive examination method according to Appendix W of the Association of American Railroads Specifications for Tank Cars, M-1002.
8. SPECIAL PROVISIONS. Persons who receive packages covered by this exemption may reoffer them for transportation provided no modifications or changes are made to the packages, all terms of this exemption are complied with, and a current copy of this exemption is maintained at each facility from which such reoffering occurs.
9. MODES OF TRANSPORTATION AUTHORIZED. Rail freight.
10. MODAL REQUIREMENTS: None
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 laws 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Registration required by 49 CFR 107.601 et seq., when applicable.

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 unless a regulation has been amended making the exemption no longer necessary.

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 as soon as practicable. (49 CFR 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.)

Issued at Washington, D.C.:


Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

FEB 10 1995

(DATE)

FEB 10 1995

Continuation of 1ST REV DOT E-11335

Page 3

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.

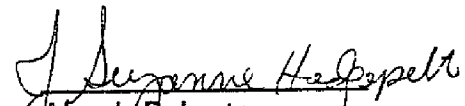
The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Dist: FRA

APPENDIX A

The following are hereby granted party status to this exemption based on their applications submitted in accordance with 49 CFR 107.111 and the public proceeding thereon or 107.105, as appropriate:

Company Name City/State	Application Date	PTE #	Issue Date
Union Tank Car Company East Chicago, IN	October 25, 1994	1	FEB 10 1995


Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety

51(2)

NOV 7 1994



Union Tank Car Company

DOT-12 10587

DOT 475

151st & Railroad Avenue
East Chicago, Indiana 46312
219/392 1500

October 31, 1994

Mr. Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety
U.S. Department of Transportation
Washington, DC 20590-0001

Attention: DHM 31

Subject: Union Tank's Comments on DOT Exemption E10589, Acoustic Emission Testing in Lieu of Hydrostatic Testing for Tank Cars

Dear Mr. Roberts:

Before Union Tank can begin using the DOT exemption for qualifying tank car tanks with Acoustic Emission testing, some clarifications and modifications are required.

A meeting is scheduled for November 9th, 1994 beginning at 8:30 am in the DOT building with representatives from the FRA, RSPA, Monsanto and Union Tank to discuss revisions and clarifications necessary to use this exemption.

The following items address Union Tank's concerns:

- 7.b.ii. Does the Acoustic Emission Test set-up screens supplied by Physical Acoustic Corporation Tank Car Transportation test unit satisfy this requirement? The data disk retains this information for each car tested.
- 7 b.iii. The test set-up screen locates each sensor placed on the tank car. Spacing is determined from the cars attenuation so all source zone locations are covered. Does this satisfy the purpose of the sensor arrangement as stated?
- 7 b.iv. What is meant by "sufficient stress levels through the tank envelope"? Application of the pressure and bolster jacking loads will result in significant stress levels in some critical areas of the tank and the bolster attachments but not in all areas of the tank. The tank envelope is assumed to include the tank, nozzles, and attached reinforcement pads. Is this a correct interpretation?
- 7 b.v. A definition of tank envelope is necessary. The applied loads are assumed to be pressure and bolster jacking. Is this correct?



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- 7.b.vi. Does this section require a full blown damage tolerancing analysis on each tank attachment weld? Wouldn't it be more definitive to use some quantitative measure of tank damage which must be detected

I would like to note that Dr. Fowler, who is representing the Monsanto Company, will expand on Union Tank's comments in 7 d in much greater detail during the meeting on the 9th

- 7.d.i. Physical Acoustics Transportation Tester does not presently have the capabilities to automatically initiate data acquisition.
- 7.d.ii. The requirement to begin recording data at 60% of the maximum load hold is impossible. The transportation test unit will lock up because of the flooding of information it will receive from background noise.
- 7.d.iii. Physical Acoustics Transportation Tester does not presently have the capabilities to define the rate of application of the load. Tanks with up to a 1/4" thick shell are monitored during loading and thicker tanks have load holds built into the test procedure.
- 7.d.iv. Physical Acoustics Transportation Tester does not presently have the capabilities to supplement the data set.
- 8.a. Will Paul Kinnecom be responsible for the data retention of Acoustic Emission tested cars? If not, Paul who?
- 8.b. Who will be the contact person in the FRA that will review the stress analysis results, test procedure etc. prior to testing?

I look forward to discussing and resolving these issues at the November 9th meeting

Should you have any questions or comments prior to our meeting, please don't hesitate to call.

Sincerely,



Thomas E DeLafosse
Project Engineer II

TED/mc
cc: BJ Damiani
CB Ferczok
CS Hyblinette
PJ Daum
AW Giffin



Union Tank Car Company

151st Street & Railroad Avenue East Chicago, Indiana 46312 219 392 6247 • Fax 219 392 6277

Carl S. Hybinette

Director Welding and Fleet Repair Engineering

October 25, 1994

Mr. Alan I. Roberts
Associate Administrator for
Hazardous Materials Safety
U.S. Department of Transportation
Washington, DC 20590-0001

Attention: Exemptions Branch, DHM 31

Dear Mr. Roberts:

A request is hereby submitted for Union Tank Car Company to be made a party to Exemption DOT-E 11335. This exemption was originally granted to Trinity Industries, Incorporated, Dallas, TX, authorizing the use of nondestructive testing techniques, in lieu of hydrostatic test to qualify repairs of DOT specification tank car tanks. The exemption application was dated October 6, 1994.

Union Tank Car Company frequently experiences the same type of disruptions when minor surface pinholes are discovered in preparation for interior lining or coating. As with Trinity Industries, these disruptions can be quite severe. We concur with Trinity's opinion that other means of nondestructive testing other than hydrostatic testing may be employed to qualify the repairs.

For your records, this application is for:

Carl S. Hybinette
Union Tank Car Company
300 W. 151st Street
East Chicago, IN 46312

Telephone 219-392-6247

I look forward to hearing from you soon. If you have any questions, or require additional information, please call me at the above indicated telephone number.

Sincerely,

CSH/mc

52 11335-1
RECEIVED
NOV 3 1994



US Department of Transportation

Research and Special Programs Administration

DOT-E 11272

AUG 19 1994

400 Seventh Street SW
Washington D.C. 20590

53 (2)

EXPIRATION DATE: September 30, 1994

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: Union Tank Car Company, Chicago, Illinois
2. PURPOSE AND LIMITATION: This emergency exemption authorizes the transportation in commerce of a DOT Specification 111A100W1 tank car, containing a residue of a Class 3 material, which does not fully comply with all DOT requirements and provides no relief from any regulations other than as specifically stated.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.29(a); 173.31(a).
5. BASIS. This emergency exemption is based on Union Tank Car Company's application of July 12, 1994, submitted in accordance with 49 CFR 107.113, and a determination that it is necessary for the protection of life and property.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous materials description/proper shipping name	Hazard Class (Written Class) class number	Identification number	Packing Group
Naphtha (solvent)	3	UN 1256	III

7. PACKAGING(S) and SAFETY CONTROL MEASURES:
 - a. PACKAGING - Packaging prescribed is a DOT Specification 111A100W1 tank car, UTLX 201425, with a head puncture consisting of a 10 to 12 inch hole above the draft sill. Prior to offering for transportation, the damaged area of the tank must be repaired to prevent leakage of any residue of product.
 - b. TESTING - Tank car UTLX 201425 must be reinspected and retested prior to the tank car being refilled.
 - c. MARKING - Tank car UTLX 201425 must be marked "DOT-E 11272" in four inch letters and numerals on a contrasting background above the DOT specification number.

AUG 19 1994

Continuation of DOT-E 11272

Page 2

d. MOVEMENT CONTROLS - Tank car UTLX 201425 must be moved as the last car of the train.

8. SPECIAL PROVISIONS.

a. Shipment of tank car UTLX 201425 is authorized from CSX Transportation, Louisville, Kentucky to Calvert City, Kentucky, a distance of approximately 207 miles and once cleaned and purged, from Calvert City, Kentucky, to Union Tank Car Company in Cleveland, Texas, a distance of approximately 924 miles utilizing the most direct route via CSX Transportation, Illinois Central, and Atchinson, Topeka, and Santa Fe.

b. Persons who receive packages covered by this exemption may reoffer them for transportation provided no modifications or changes are made to the packages, all terms of this exemption are complied with, and a current copy of this exemption is maintained at each facility from which such reoffering occurs.

9. MODES OF TRANSPORTATION AUTHORIZED. Rail freight.

10. MODAL REQUIREMENTS: The Federal Railroad Administration (FRA) is to be notified if any unusual incident occurs, such as derailment, during the movement by contacting the:

Federal Railroad Administration
Office of Safety, RRS-12
400 Seventh Street, S.W.
Washington, D.C. 20590
(202) 366-9178 or 366-0549


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 laws:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
- Registration required by 49 CFR 107.601 et seq., when applicable.

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 unless a regulation has been amended making the exemption no longer necessary.

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 as soon as practicable. (49 CFR 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder 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 at Washington, D.C.:



Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

AUG 19 1994

(DATE)

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.

Dist: FRA

54(6)

SEP - 9 1994



US Department of Transportation
Research and Special Programs Administration

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

DOT-E 10589

EXPIRATION DATE: September 1, 1996

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: Monsanto Chemical Company, St. Louis, Missouri
(See appendix A of this exemption for the parties to the exemption)
2. PURPOSE AND LIMITATION: This exemption authorizes the use of an acoustic emission non-destructive testing procedure for evaluating the continuing qualification of tanks that are mounted on or form part of a railroad freight car structure.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.31(c).
5. BASIS. This exemption is based on Monsanto Chemical Company's application dated April 17, 1991, and supplemental letter dated October 28, 1993, submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR 172.101): Hazardous materials authorized in tank cars by 49 CFR Part 173; by an exemption issued under 49 CFR Subpart B of Part 107 or as authorized in accordance with 49 CFR 171.12 or 49 CFR 171.12a.
7. PACKAGING(S) AND SAFETY CONTROL MEASURES:
 - a. PACKAGING: Packagings prescribed are DOT specification tank car tanks, or tank car tanks built to an Association of American Railroads (AAR) specification, that are - in lieu of the required hydrostatic qualification test method - qualified by an acoustic emission test method.
 - b. TESTING:
 - i. The acoustic emission test must be in accordance with the procedures outlined in the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," Issue 4, December 1993.

ii. For each tank designated for the acoustic emission test, details in reference to design, actual configuration, history of service, and previous test and qualification evaluation results must be documented prior to test.

iii. For each tank designated for the acoustic emission test, a detailed description of the sensor location arrangement and the purpose of the arrangement must be documented prior to test.

iv. Each tank design must have a finite element analysis performed to verify that the applied loads produce sufficient stress levels throughout the tank envelope to stimulate adequate acoustic emission activity. The finite element analysis must take into consideration the tank geometry; material of construction; thickness of materials; and geometrical discontinuities, such as reinforcements, pads, manways, nozzles, and outlets.

v. As an alternative to the finite element analysis, strain gauge data must validate that the entire tank envelope is sufficiently stressed to stimulate adequate acoustic emission activity by the applied loads.

v. The applicant shall establish and support by test evidence the adequacy and the sensitivity of the acoustic emission instrumentation, the test procedure, and the cumulative signal strength category (damage detection rating system) by performing comparative non-destructive testing of each tank design. The sensitivity of the instrumentation and test procedure must ensure the detection of any tank damage that may, as a result of the loading spectrum, grow to failure before the next tank qualification.

c. MARKING:

i. Each tank must be marked "DOT-E 10589" in four inch letters and numerals on a contrasting background above the tank specification number.

ii. After successfully passing an acoustic emission test, the tank must be marked "AE TANK TESTED" followed by the date of the test and the date of the next required test in the tank test stenciling location specified in the AAR, Specifications for Tank Cars, Specification M-1002, Appendix C.

d. In addition to the non-destructive testing procedures outlined in the AAR's "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," the following elements apply--

- i. The instrumentation must automatically record the loading parameter (i.e., applied load, deflection or pressure) in the data record to avoid the loss of significant data that may occur with manual initiation of data acquisition.
- ii. The instrumentation must begin recording the measured area of the rectified signal envelope (MARSE) data at 60 percent of maximum load hold.
- iii. To validate the test, the data recorded during increasing load must define the rate of application of the load.
- iv. For the assessment of damage severity, the data recorded during increasing load must supplement the data set.

e. Acoustic emission testing personnel shall maintain a NDT Level I or NDT Level II certification. Employers shall establish the written company practice for qualification and certification of NDT personnel according to The American Society for Nondestructive Testing, Incorporated's Recommended Practice SNT-TC-1A. Personnel with Level I certification may perform the test, but only under the supervision of an individual maintaining at least a Level II certification. All acoustic emission testing personnel shall maintain professional competency by participating in a continuing education or professional development program, or annual refresher course, or by having an annual review by employer's acoustic emission training personnel.

8. SPECIAL PROVISIONS:

a. The grantee shall furnish the AAR Tank Car Committee all data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks." The AAR Tank Car Committee shall collect and compile the data documentation to ensure accuracy and reliability.

b. At least thirty days prior to an acoustic emission test, the exemption holder shall provide the Federal Railroad Administration (FRA) with the results of stress analysis, test procedure, supporting documentation, and the qualifications of each individual scheduled to perform the test. FRA review is required prior to performing the acoustic emission test under this exemption. This requirement is applicable, however, to the first two tank tests only, unless extended by the FRA, and is intended for the purpose of validating the applicability of requirements prescribed in this exemption.

c. For each tank that is tested under the terms of this exemption, data documentation, as described in Appendix H2 of the "Procedure for Acoustic Emission Evaluation of Tank Cars and IM-101 Portable Tanks," must be made available to the FRA upon request.

9. **MODES OF TRANSPORTATION AUTHORIZED.** Rail freight.

10. **MODAL REQUIREMENTS:** No modal specific requirements are required 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 laws:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- Registration required by 49 CFR 107.601 et seq., when applicable.

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 unless a regulation has been amended making the exemption no longer necessary.

12. **REPORTING REQUIREMENTS:**

a. 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. (49 CFR 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.