

March 26, 2014



U.S. Department  
of Transportation

East Building, PHH-30  
1200 New Jersey Avenue S.E.  
Washington, D.C. 20590

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 15451  
(FIRST REVISION)

**EXPIRATION DATE: January 31, 2018**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: NK CO., LTD  
Gangseo-Gu, Busan, South Korea  
(US Agent: Busan Trade Office, Los Angeles, CA)
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the transportation in commerce of certain Division 2.1 and 2.2 materials in DOT 3A, 3AA, 3AX, 3AAX and 3T cylinders having a water capacity over 125 lbs to be periodically requalified every ten years instead of every five years. The cylinders must be horizontally mounted on a motor vehicle (trailer chassis) or in an ISO frame or other framework of equivalent structural integrity. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
  - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
  - c. No party status will be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 180.209(a) and (b), in that cylinders with water capacity over 125 lbs may be requalified every ten years and they are not required to be removed from bundles or frames and hammer tested prior to

**March 26, 2014**

each refill; and that the approved combination acoustic emission and ultrasonic examination (AE/UE) or 100% UE methods are authorized in lieu of hydrostatic pressure testing and visual inspection.

5. BASIS: This special permit is based on the application of NK CO., LTD dated January 13, 2014 submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

<b>Hazardous Materials Description</b>			
<b>Proper Shipping Name</b>	<b>Hazard Class/ Division</b>	<b>Identification Number</b>	<b>Packing Group</b>
1,1-Difluoroethylene or Refrigerant gas R 1132a	2.1	UN1959	N/A
Air, compressed	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Compressed gas, flammable, n.o.s.	2.1	UN1954	N/A
Compressed gas, n.o.s.	2.2	UN1956	N/A
Helium, compressed	2.2	UN1046	N/A
Hexafluoroethane, compressed or Refrigerant gas R 116	2.2	UN2193	N/A
Hydrogen, compressed	2.1	UN1049	N/A
Neon, compressed	2.2	UN1065	N/A
Nitrogen trifluoride, compressed	2.2	UN2451	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Nitrous oxide	2.2	UN1070	N/A
Oxygen, compressed	2.2	UN1072	N/A

March 26, 2014

<b>Hazardous Materials Description</b>			
<b>Proper Shipping Name</b>	<b>Hazard Class/Division</b>	<b>Identification Number</b>	<b>Packing Group</b>
Sulfur hexafluoride	2.2	UN1080	N/A
Trifluoromethane or Refrigerant gas R 23	2.2	UN1984	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed are DOT 3A, 3AA, 3AX, 3AAX or 3T cylinders (tubes) mounted on a trailer chassis (tube trailers) or in an ISO frame, or other framework of equivalent structural integrity (see § 173.301(i)), that are subjected to periodic requalification and marking specified in §§ 180.205, 180.209, and 180.213 except that:

(1) Each tube mounted in a frame or on a trailer chassis, may be requalified every 10 years in accordance with § 180.205 using either the hydrostatic pressure test and visual inspection described in § 180.205 or in accordance with current DOT special permits applicable to these DOT specification cylinders using one of the following methods:

- 100% ultrasonic examination (UE); or
- Acoustic emission and ultrasonic examination (AE/UE)

The 10 year requalification period applies only to tubes that meet all requirements specified in § 180.209(b) except that the tubes may have a water capacity over 125 lbs and they are not required to be hammer tested.

(2) Every 5 years, each tube including the tube neck and flange/sleeve must be subjected to an external visual inspection (without disassembly) in accordance with CGA Pamphlet C-6. A tube with excessive corrosion around the neck or under the flange/sleeve must be removed and examined in accordance with the DOT procedure for the inspection of DOT/TC tube mounting threads "Inspection Procedure for Inspection of DOT/TC

**March 26, 2014**

cylinder Mounting Threads" listed on the PHMSA website at:

[http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Inspection\\_Procedure.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Inspection_Procedure.pdf)

(3) Every 10 years, each tube or tube must be removed from frame and examined in accordance with the DOT procedure for the inspection of DOT/TC cylinder mounting threads "Inspection Procedure for Inspection of DOT/TC cylinder Mounting Threads" listed on PHMSA website at:

[http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/files/Inspection\\_Procedure.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/files/Inspection_Procedure.pdf)

NK must record the results of the visual inspection and examination for each cylinder or tube and submit the report to the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) upon request.

b. OPERATIONAL CONTROLS -

(1) Before a DOT 3T cylinder (tube) is used under the terms of this special permit, it must be subjected to shear wave ultrasonic examination (UE). The UE must be performed by an authorized DOT UE special permit holder or the cylinder (tube) manufacturer. Maximum acceptance defect (sidewall crack) for a tube that is tested by UE shear wave is 5% of the minimum design wall thickness of the tube. The UE shear wave must cover 100% of the sidewall of the cylinder.

(2) This special permit is limited to the packagings described in paragraph 7.a. above. The tubes must be mounted horizontally in a suitable frame or on a trailer chassis. Flat bottom cylinders are not covered by this permit.

(3) Maximum cycling (fillings) of each cylinder (tube) in a 10 year period must be less than or equal to 600 for DOT 3A, 3AA, 3AAX and 300 for DOT 3T cylinders. NK must obtain the record of fillings of each tube and submit the report to the OHMSPA upon request.

(4) All gases must meet the requirements of § 180.209(b) (ii) and have a dew point at or below minus 52°F at one atmosphere.

**March 26, 2014**

(5) Hydrogen and hydrogen bearing gases are not authorized in DOT 3T specification cylinders (see § 173.302a(a)(4)).

(6) Carbon dioxide or any corrosive gas in any concentration shall not be added to these cylinders.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

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

c. MARKING:

(1) An exterior cylinder (tube) on each side of the frame or tube trailer must be plainly and durably marked "DOT-SP 15451" with the letters and numbers at least 2 inches high on a contrasting background.

(1) The retest date must be marked on the rear or side of the frame or tube trailer at approximately eye level. In the event the retest dates of the cylinders differ in the frame or tube trailer, the oldest retest date (i.e., the retest date of the tube that becomes due first) must be displayed.

d. Transportation of Division 2.1 (flammable gases) is not authorized aboard a cargo vessel unless specifically authorized in the Hazardous Materials Table (§ 172.101).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo vessel and rail freight.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this special permit.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous

**March 26, 2014**

materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie  
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at [http://hazmat.dot.gov/sp\\_app/special\\_permits/spec\\_perm\\_index.htm](http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm). Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: M Toughiry:dl