# SAFETY DATA SHEET

Nitrogen Trifluoride

## Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>Nitrogen Trifluoride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>nitrogen trifluoride</td>
</tr>
<tr>
<td>Other means of</td>
<td>Nitrogen fluoride (NF3); Trifluorammonia; Trifluoramine;Nitrogen fluoride</td>
</tr>
<tr>
<td>identification</td>
<td>Synthetic/Analytical chemistry.</td>
</tr>
<tr>
<td>Product use</td>
<td>Synthetic/Analytical chemistry.</td>
</tr>
<tr>
<td>Synonym</td>
<td>Nitrogen fluoride (NF3); Trifluorammonia; Trifluoramine;Nitrogen fluoride</td>
</tr>
<tr>
<td>SDS #</td>
<td>001079</td>
</tr>
</tbody>
</table>
| Supplier’s details     | Airgas USA, LLC and its affiliates  
                          259 North Radnor-Chester Road  
                          Suite 100  
                          Radnor, PA 19087-5283  
                          1-610-687-5253 |
| Emergency telephone     | 1-866-734-3438 |
| number (with hours of  | operation) |

## Section 2. Hazards identification

<table>
<thead>
<tr>
<th>OSHA/HCS status</th>
<th>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</th>
</tr>
</thead>
</table>
| Classification of the   | OXIDIZING GASES - Category 1  
                          GASES UNDER PRESSURE - Compressed gas  
                          ACUTE TOXICITY (inhalation) - Category 4  
                          SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (blood system) - Category 2 |
| substance or mixture    |---------------------------------------------------------------------------------------------------|
| GHS label elements      | |
| Hazard pictograms       | ![hazard pictograms](image) |
| Signal word             | Danger |
| Hazard statements       | May cause or intensify fire; oxidizer.  
                          Contains gas under pressure; may explode if heated.  
                          May displace oxygen and cause rapid suffocation.  
                          Harmful if inhaled.  
                          May cause damage to organs. (blood system) |
| Precautionary statements| Read and follow all Safety Data Sheets (SDS’S) before use. Read label before use.  
                          Keep out of reach of children. If medical advice is needed, have product container or label at hand.  
                          Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use.  
                          Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service. |

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**Date of previous issue**: No previous validation  
**Version**: 0.01  

Powered by IHS
Nitrogen Trifluoride

Section 2. Hazards identification

Prevention: Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Use only outdoors or in a well-ventilated area. Do not breathe gas. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Use and store only outdoors or in a well ventilated place.

Response: In case of fire: Stop leak if safe to do so. IF exposed or if you feel unwell: Call a POISON CENTER or physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Storage: Store locked up. Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified: In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture: Substance
Chemical name: Nitrogen trifluoride
Other means of identification: Nitrogen fluoride (NF3); Trifluorammonia; Trifluoramine; Nitrogen fluoride

CAS number/other identifiers:
- CAS number: 7783-54-2
- Product code: 001079

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen trifluoride</td>
<td>100</td>
<td>7783-54-2</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

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Section 4. First aid measures

Ingestion: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: May cause eye irritation. Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation: Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: May cause skin irritation. Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite: Try to warm up the frozen tissues and seek medical attention.

Ingestion: As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: No specific data.

Skin contact: No specific data.

Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- nitrogen oxides
- halogenated compounds

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Do not breathe gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Separate from acids, alkalies, reducing agents and combustibles. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Nitrogen trifluoride     | ACGIH TLV (United States, 3/2012).  
|                          | STEL: 29 mg/m³ 15 minutes.  
|                          | TWA: 10 ppm 8 hours.  
|                          | NIOSH REL (United States, 1/2013).  
|                          | TWA: 29 mg/m³ 10 hours.  
|                          | TWA: 10 ppm 10 hours.  
|                          | OSHA PEL (United States, 6/2010).  
|                          | TWA: 29 mg/m³ 8 hours.  
|                          | TWA: 10 ppm 8 hours.  
|                          | TWA: 29 mg/m³ 8 hours.  
|                          | TWA: 10 ppm 8 hours.  |

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Section 9. Physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Gas. [Compressed gas.]</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>71 g/mole</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>F3-N</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>-129°C (-200.2°F)</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>-208.5°C (-343.3°F)</td>
</tr>
<tr>
<td>Critical temperature</td>
<td>-39.2°C (-38.6°F)</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Burning time</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Burning rate</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>657.2 (psia)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>2.46 (air=1)</td>
</tr>
<tr>
<td>Specific Volume (ft³/lb)</td>
<td>5.4466</td>
</tr>
<tr>
<td>Gas Density (lb/ft³)</td>
<td>0.1836</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>SADT</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

**Reactivity**

No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**

The product is stable.

**Possibility of hazardous reactions**

Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials. Reactions may include the following: risk of causing fire.

**Conditions to avoid**

No specific data.
Section 10. Stability and reactivity

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen trifluoride</td>
<td>LC50 Inhalation Gas.</td>
<td>Mouse</td>
<td>2000 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>6700 ppm</td>
<td>1 hours</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen trifluoride</td>
<td>Category 2</td>
<td>Not determined</td>
<td>blood system</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact: May cause eye irritation. Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation: Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact: May cause skin irritation. Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion: As this product is a gas, refer to the inhalation section.
Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects
Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential
Not available.

Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.
Section 12. Ecological information

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN2451</td>
<td>UN2451</td>
<td>UN2451</td>
<td>UN2451</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>NITROGEN TRIFLUORIDE</td>
<td>NITROGEN TRIFLUORIDE</td>
<td>NITROGEN TRIFLUORIDE</td>
<td>NITROGEN TRIFLUORIDE</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>2.2 (5.1)</td>
<td>2.2 (5.1)</td>
<td>2.2 (5.1)</td>
<td>2.2 (5.1)</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>Limited quantity: Yes.</td>
<td>Explosive Limit and Limited Quantity Index 0</td>
<td>-</td>
<td>Passenger and Cargo Aircraft Quantity limitation: 75 kg Cargo Aircraft Only Quantity limitation: 150 kg</td>
</tr>
<tr>
<td>Packaging instruction</td>
<td>-</td>
<td>ERAP Index 25</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Passenger aircraft</td>
<td>Passenger Carrying Ship Index Forbidden</td>
<td>Passenger Carrying Road or Rail Index 75</td>
<td>Special provisions 38</td>
<td>-</td>
</tr>
<tr>
<td>Quantity limitation: 75 kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cargo aircraft</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quantity limitation: 150 kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

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Section 15. Regulatory information

**U.S. Federal regulations**

- **Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)**: Not listed
- **Clean Air Act Section 602 Class I Substances**: Not listed
- **Clean Air Act Section 602 Class II Substances**: Not listed
- **DEA List I Chemicals (Precursor Chemicals)**: Not listed
- **DEA List II Chemicals (Essential Chemicals)**: Not listed

**State regulations**

- **Massachusetts**: This material is listed.
- **New York**: This material is not listed.
- **New Jersey**: This material is listed.
- **Pennsylvania**: This material is listed.

**International regulations**

- **Australia inventory (AICS)**: Not determined.
- **China inventory (IECSC)**: This material is listed or exempted.
- **Japan inventory**: This material is listed or exempted.
- **Korea inventory**: This material is listed or exempted.
- **Malaysia Inventory (EHS Register)**: Not determined.
- **New Zealand Inventory of Chemicals (NZIoC)**: Not determined.
- **Philippines inventory (PICCS)**: This material is listed or exempted.
- **Taiwan inventory (CSNN)**: Not determined.

**TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

**United States inventory (TSCA 8b)**: This material is listed or exempted.

**SARA 302/304**

**Composition/information on ingredients**

No products were found.

**SARA 304 RQ**: Not applicable.

**SARA 311/312**

**Classification**: Sudden release of pressure

Immediate (acute) health hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen trifluoride</td>
<td>100</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Date of issue/Date of revision**: 10/20/2014

**Date of previous issue**: No previous validation

**Version**: 0.01
Section 15. Regulatory information

**Chemical Weapons Convention List Schedule II Chemicals**
- Not listed

**Chemical Weapons Convention List Schedule III Chemicals**
- Not listed

**Canada**

**WHMIS (Canada)**
- Class A: Compressed gas.
- Class D-1A: Material causing immediate and serious toxic effects (Very toxic).

- **CEPA Toxic substances**: This material is not listed.
- **Canadian ARET**: This material is not listed.
- **Canadian NPRI**: This material is not listed.
- **Alberta Designated Substances**: This material is not listed.
- **Ontario Designated Substances**: This material is not listed.
- **Quebec Designated Substances**: This material is not listed.

Section 16. Other information

**Canada Label requirements**
- Class A: Compressed gas.
- Class D-1A: Material causing immediate and serious toxic effects (Very toxic).

**Hazardous Material Information System (U.S.A.)**

- **Health**: 1
- **Flammability**: 0
- **Physical hazards**: 3

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**National Fire Protection Association (U.S.A.)**

- **Flammability**: 0
- **Instability/Reactivity**: 0
- **Special**: Ox

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Section 16. Other information

Key to abbreviations
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA = Canadian Environmental Protection Act
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR = United States Code of Federal Regulations
CPR = Controlled Products Regulations
DSL = Domestic Substances List
GWP = Global Warming Potential
IARC = International Agency for Research on Cancer
ICAO = International Civil Aviation Organisation
Inh = Inhalation
LC = Lethal concentration
LD = Lethal dosage
NDSL = Non-Domestic Substances List
NIOSH = National Institute for Occupational Safety and Health
TDG = Canadian Transportation of Dangerous Goods Act and Regulations
TLV = Threshold Limit Value
TSCA = Toxic Substances Control Act
WEEL = Workplace Environmental Exposure Level
WHMIS = Canadian Workplace Hazardous Material Information System

References
Not available.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.