## 1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>FLUORINE (&gt;=0.46% - &lt;=1%) In ARGON, HELIUM, KRYPTON, NEON, NITROGEN or XENON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>FLUORINE (&gt;=0.46% - &lt;=1%) In ARGON, HELIUM, KRYPTON, NEON, NITROGEN or XENON</td>
</tr>
<tr>
<td>Other means of identification</td>
<td></td>
</tr>
<tr>
<td>Safety data sheet number</td>
<td>LIND-M0081</td>
</tr>
<tr>
<td>Product code(s)</td>
<td>LE747; LE748; LE769; LE769; LE770</td>
</tr>
<tr>
<td>UN/ID no.</td>
<td>UN1956</td>
</tr>
</tbody>
</table>

### Recommended use of the chemical and restrictions on use

<table>
<thead>
<tr>
<th>Recommended Use</th>
<th>Industrial and professional use. Excimer laser gas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uses advised against</td>
<td>Consumer use</td>
</tr>
</tbody>
</table>

### Details of the supplier of the safety data sheet

- Linde Gas North America LLC - Linde Merchant Production Inc. - Linde LLC
  - 575 Mountain Ave.
  - Murray Hill, NJ 07974
  - Phone: 908-464-8100
  - www.lindeus.com

- Linde Gas Puerto Rico, Inc.
  - Road 869, Km 1.8
  - Barrio Palmas, Catano, PR 00962
  - Phone: 787-641-7445
  - www.pr.lindegas.com

- Linde Canada Limited
  - 5860 Chedworth Way
  - Mississauga, Ontario L5R 0A2
  - Phone: 905-501-1700
  - www.lindecanada.com

* May include subsidiaries or affiliate companies/ divisions.

For additional product information contact your local customer service.

### Emergency telephone number

<table>
<thead>
<tr>
<th>Company Phone Number</th>
<th>800-232-4726 (Linde National Operations Center, US)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>905-501-0802 (Canada)</td>
</tr>
<tr>
<td></td>
<td>CHEMTREC: 1-800-424-9300 (North America) +1-703-527-3887 (International)</td>
</tr>
</tbody>
</table>
2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Inhalation (Gases)</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/ irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/ eye irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Gases under pressure</td>
<td>Compressed gas</td>
</tr>
</tbody>
</table>

Label elements

Signal word  Warning

Hazard Statements
Contains gas under pressure; may explode if heated
Harmful if inhaled
Causes serious eye irritation
Causes skin irritation

Precautionary Statements - Prevention
Do not handle until all safety precautions have been read and understood
Avoid breathing gas
Use and store only outdoors or in a well ventilated place
Wash hands thoroughly after handling
Wear protective gloves, protective clothing, eye protection, and/ or face protection
Use a backflow preventive device in piping
Use only with equipment rated for cylinder pressure
Close valve after each use and when empty

Precautionary Statements - Response
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF ON SKIN: Wash with plenty of water. IF SKIN IRRITATION OCCURS: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/ attention

Precautionary Statements - Storage
Protect from sunlight when ambient temperature exceeds 52°C/ 125°F

Hazards not otherwise classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Volume %</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xenon</td>
<td>7440-63-3</td>
<td>0-99</td>
<td>Xe</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>7727-37-9</td>
<td>0-99</td>
<td>N₂</td>
</tr>
<tr>
<td>Neon</td>
<td>7440-01-9</td>
<td>0-99</td>
<td>Ne</td>
</tr>
<tr>
<td>Krypton</td>
<td>7439-90-9</td>
<td>0-99</td>
<td>Kr</td>
</tr>
<tr>
<td>Helium</td>
<td>7440-59-7</td>
<td>0-99</td>
<td>He</td>
</tr>
<tr>
<td>Argon</td>
<td>7440-37-1</td>
<td>0-99</td>
<td>Ar</td>
</tr>
<tr>
<td>Fluorine</td>
<td>7782-41-4</td>
<td>0.46-1.0</td>
<td>F₂</td>
</tr>
</tbody>
</table>

Composition covers range of mixtures that fall within the same hazard classifications.

4. FIRST AID MEASURES

Description of first aid measures

General advice
Show this safety data sheet to the doctor in attendance.

Inhalation
Remove to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Skin contact
Wash off immediately with plenty of water for at least 15 minutes. Dermal burns may be treated with calcium gluconate gel or slurry in water or glycerine. This compound binds the active fluorides in an insoluble form and limits burn extension and pain. Get medical attention if symptoms occur.

Eye contact
Immediately flush eye with running water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if symptoms occur.

Ingestion
Not an expected route of exposure.

Self-protection of the first aider
RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Most important symptoms and effects, both acute and delayed

Symptoms
Irritating to eyes, respiratory system and skin. Due to fluorine component in mixture, product may cause respiratory irritation, coughing, breathing difficulty. Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Indication of any immediate medical attention and special treatment needed

Note to physicians
For dermal exposure, the use of 2.5-33% calcium gluconate or carbonate gel or slurry has been recommended. The gel is either placed into a surgical glove into which the affected extremity is then placed or applied directly on the burn. This compound binds with the active fluorides in an insoluble form and limits burn extension and pain. Calcium chloride should not be used.

5. FIRE-FIGHTING MEASURES
Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific extinguishing methods
Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.

Specific hazards arising from the chemical
Non-flammable gas. Cylinders may rupture under extreme heat.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/ NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Evacuate personnel to safe areas. Keep people away from and upwind of spill/ leak. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level. Monitor concentration of released product. Use personal protection recommended in Section 8. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

Environmental precautions
Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods and material for containment and cleaning up

Methods for containment
Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Linde location.

Methods for cleaning up
Return cylinder to Linde or an authorized distributor.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Handle only in areas with extensive venting capabilities, preferably a gas handling cabinet. Consider installation of fluorine gas detection equipment in handling areas. Any detection of fluorine odor should trigger immediate response and corrective action. Gas handling equipment must be cleaned for oxygen service. Equipment must be dry, purged with dry nitrogen or other inert gas and meticulously leak checked before connecting cylinder to system. Open valve slowly. Prior to disconnecting cylinder from system, manifold and pigtails must be purged with inert gas.

Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Never attempt to lift a cylinder by its valve protection cap. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use an adjustable strap wrench to remove over-tight or rusted caps. Use only with adequate ventilation. Use a backflow preventive device in piping. Use only with equipment rated for cylinder pressure. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Ensure the complete gas system has been checked for leaks before use.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner’s written consent. Never strike an arc on a
compressed gas cylinder or make a cylinder a part of an electrical circuit.

Only experienced and properly instructed persons should handle gases under pressure. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

Conditions for safe storage, including any incompatibilities

**Storage Conditions**

Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Full and empty cylinders should be segregated. Use a “first in-first out” inventory system to prevent full cylinders from being stored for excessive periods of time. Stored containers should be periodically checked for general condition and leakage.

**Incompatible materials**  
Water. Moisture.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorine</td>
<td>STEL: 2 ppm TWA: 1 ppm TWA: 2.5 mg/ m³ F TWA: 0.1 ppm TWA: 2.5 mg/ m³ F (vacated) TWA: 0.1 ppm (vacated) TWA: 0.2 mg/ m³ (vacated) TWA: 2.5 mg/ m³ F</td>
<td>TWA: 0.2 mg/ m³ TWA: 2.5 mg/ m³ F TWA: 0.1 ppm TWA: 0.2 mg/ m³ (vacated) TWA: 2.5 mg/ m³ F</td>
<td>IDLH: 25 ppm TWA: 0.1 ppm TWA: 0.2 mg/ m³</td>
</tr>
</tbody>
</table>

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health

**Other Information**

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

#### Appropriate engineering controls

**Engineering Controls**

Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%. Oxygen detectors should be used when asphyxiating gases may be released. Consider installation of leak detection systems in areas of use and storage. Systems under pressure should be regularly checked for leakages.

#### Individual protection measures, such as personal protective equipment

**Eye/ face protection**

Wear safety glasses with side shields (or goggles).

**Skin and body protection**

Work gloves and safety shoes are recommended when handling cylinders.

**Respiratory protection**

Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%). If exposure limits are exceeded or irritation is experienced, NIOSH/ MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES
**Physical state**
Compressed gas

**Appearance**
Colorless.

**Odor**
Odorless to pungent.

**Odor threshold**
0.02 - 0.126 ppm (Fluorine)

**pH**
No data available

**Melting point**
No data available

**Evaporation rate**
Not applicable

**Lower flammability limit:**
Not applicable

**Upper flammability limit:**
Not applicable

**Flash point**
Not applicable

**Autoignition temperature**
No data available

**Decomposition temperature**
No data available

**Partition coefficient**
No data available

**Kinematic viscosity**
Not applicable

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Molecular weight</th>
<th>Boiling point</th>
<th>Vapor Pressure</th>
<th>Vapor density (air =1)</th>
<th>Gas Density kg/ m³ @ 20°C</th>
<th>Critical Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xenon</td>
<td>131.29</td>
<td>-108.1 °C</td>
<td>Above critical temperature</td>
<td>4.55</td>
<td>5.472</td>
<td>16.6 °C</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>28.01</td>
<td>-196 °C</td>
<td>Above critical temperature</td>
<td>0.97</td>
<td>1.153</td>
<td>-146.9 °C</td>
</tr>
<tr>
<td>Neon</td>
<td>20.17</td>
<td>-246.1 °C</td>
<td>Above critical temperature</td>
<td>0.694</td>
<td>0.922</td>
<td>-228.8 °C</td>
</tr>
<tr>
<td>Krypton</td>
<td>83.79</td>
<td>-153.4 °C</td>
<td>Above critical temperature</td>
<td>2.89</td>
<td>3.479</td>
<td>-228.8 °C</td>
</tr>
<tr>
<td>Helium</td>
<td>4.00</td>
<td>-268.9 °C</td>
<td>Above critical temperature</td>
<td>0.138</td>
<td>0.165</td>
<td>-267.9 °C</td>
</tr>
<tr>
<td>Argon</td>
<td>39.95</td>
<td>-185.9 °C</td>
<td>Above critical temperature</td>
<td>1.38</td>
<td>1.65</td>
<td>-122.3 °C</td>
</tr>
<tr>
<td>Fluorine</td>
<td>38</td>
<td>-188.2 °C</td>
<td>Above critical temperature</td>
<td>1.3</td>
<td>1.57</td>
<td>-128.8 °C</td>
</tr>
</tbody>
</table>

**10. STABILITY AND REACTIVITY**

**Reactivity**
Fluorine may react with water or moist air to form hydrogen fluoride or hydrofluoric acid

**Chemical stability**
Stable under normal conditions.

**Explosion data**

- **Sensitivity to Mechanical Impact**: None.
- **Sensitivity to Static Discharge**: None.

**Possibility of Hazardous Reactions**
None under normal processing.

**Conditions to avoid**
None under recommended storage and handling conditions (see Section 7).

**Incompatible materials**
Water. Moisture.

**Hazardous Decomposition Products**
Hydrogen fluoride. Oxygen difluoride.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Pungent odor of fluorine provides warning of release. Mice exposed to sublethal concentrations (LC50: 150 ppm/1 hr.) of fluorine experienced pulmonary irritation and delayed focal necrosis of the liver and kidney.

Skin contact
May cause irritation. Fluorine may react with water or moist air to form hydrogen fluoride or hydrofluoric acid. Prolonged skin contact may result in localized burns and pain which are not immediately noticeable. Symptoms may be delayed requiring first aid treatment.

Eye contact
Causes serious eye irritation.

Ingestion
Not an expected route of exposure.

Information on toxicological effects

Symptoms
Due to fluorine component in mixture, product may cause respiratory irritation, coughing, breathing difficulty.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Category 2.

Serious eye damage/eye irritation
Category 2.

Irritation
Irritating to eyes, respiratory system and skin.

Sensitization
Not classified.

Germ cell mutagenicity
Not classified.

Carcinogenicity
This product does not contain any carcinogens or potential carcinogens listed by OSHA, IARC or NTP.

Reproductive toxicity
Not classified.

STOT - single exposure
Not classified.

STOT - repeated exposure
Not classified.

Chronic toxicity
Extended low level systemic absorption of fluorides may cause fluorosis, an abnormal calcification pattern of the skeletal system.

Target Organ Effects
Skin, Eyes, Respiratory system, Skeletal system.

Aspiration hazard
Not applicable.

Numerical measures of toxicity

Component Level Information:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
<th>Inhalation LC50 (CGA P-20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorine 7782-41-4</td>
<td>-</td>
<td>-</td>
<td>=185 ppm (Rat) 1 h</td>
<td>185 ppm (Rat) 1hr</td>
</tr>
</tbody>
</table>

Product Information

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>No information available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>No information available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>No information available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (inhalation-gas) 9250 - 20,000 ppm

12. ECOLOGICAL INFORMATION

Ecotoxicity
No known acute aquatic toxicity.
Persistence and degradability
Not applicable.

Bioaccumulation
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Linde for proper disposal.

14. TRANSPORT INFORMATION

Note: The technical names of components listed as part of shipping description will depend on specific mixture composition and/or balance gas. The UN1956 classification for this mixture is based on testing that determined a 1.05% fluorine/neon mixture is not oxidizing per the protocol of ISO 10156–2 Determination of Oxidizing Ability of Toxic and Corrosive Gases and Gas Mixtures.

DOT
UN/ID no. UN1956
Proper shipping name Compressed gas, n.o.s.
Hazard Class 2.2
Description UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2
Emergency Response Guide Number 126

TDG
UN/ID no. UN1956
Proper shipping name Compressed gas, n.o.s.
Hazard Class 2.2
Description UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2

MEX
UN/ID no. UN1956
Proper shipping name Compressed gas, n.o.s.
Hazard Class 2.2
Description UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2

IATA
UN/ID no. UN1956
Proper shipping name Compressed gas, n.o.s.
Hazard Class 2.2
ERG Code 2L
Description UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2

IMDG
UN/ID no. UN1956
Proper shipping name Compressed gas, n.o.s.
Hazard Class 2.2
EmS-No. F-C, S-V
Special Provisions 274
Description UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2
ADR

<table>
<thead>
<tr>
<th>UN/ID no.</th>
<th>UN1956</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Compressed gas, n.o.s.</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>2.2</td>
</tr>
<tr>
<td>Classification code</td>
<td>1A</td>
</tr>
<tr>
<td>Tunnel restriction code</td>
<td>(E)</td>
</tr>
<tr>
<td>Special Provisions</td>
<td>274, 655</td>
</tr>
<tr>
<td>Description</td>
<td>UN1956, Compressed gas, n.o.s. (Fluorine, XXXXX), 2.2, (E)</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Legend:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA - United States Toxic Substances Control Act Section 8(b) Inventory</td>
</tr>
<tr>
<td>DSL/ NDSL - Canadian Domestic Substances List/ Non-Domestic Substances List</td>
</tr>
<tr>
<td>EINECS/ ELINCS - European Inventory of Existing Chemical Substances/ European List of Notified Chemical Substances</td>
</tr>
</tbody>
</table>

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/ SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorine</td>
<td>10 lb</td>
<td>10 lb</td>
<td>10 lb</td>
</tr>
<tr>
<td>7782-41-4</td>
<td></td>
<td></td>
<td>4.54 kg</td>
</tr>
</tbody>
</table>

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Risk and Process Safety Management Programs

This material, as supplied, contains one or more regulated substances with specified thresholds under 40 CFR Part 68 or regulated as a highly hazardous chemical pursuant to the 29 CFR Part 1910.110 with specified thresholds:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Toxic Substances</th>
<th>U.S. - CAA (Clean Air Act) - Accidental Release Prevention - Flammable Substances</th>
<th>U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorine</td>
<td>1000 lb</td>
<td></td>
<td>1000 lb</td>
</tr>
</tbody>
</table>
US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neon 7440-01-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Argon 7440-37-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Helium 7440-59-7</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Xenon 7440-63-3</td>
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<tr>
<td>Nitrogen 7727-37-9</td>
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</tr>
<tr>
<td>Fluorine 7782-41-4</td>
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<table>
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<tr>
<th>Chemical Name</th>
<th>Carcinogenicity</th>
<th>Exposure Limits</th>
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</thead>
<tbody>
<tr>
<td>Fluorine</td>
<td></td>
<td>Mexico: TWA 1 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA 2 mg/ m$^3$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: TWA 2.5 mg/ m$^3$</td>
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<tr>
<td></td>
<td></td>
<td>Mexico: STEL 2 ppm</td>
</tr>
<tr>
<td></td>
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<td>Mexico: STEL 4 mg/ m$^3$</td>
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</table>

Legend
Canada NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

NFPA
Health hazards 1 Flammability 0 Instability 0

Physical and Chemical Properties
Simple asphyxiant

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

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Revision Note Initial Release
suitability of the information for their particular purpose(s).