Section 1: Product and Company Identification

Middlesex Gases & Technologies
292 Second Street
P.O. Box 490249
Everett, MA 02149
(617) 387-5050
(800) 649-6704
Fax (617) 387-3537
http://www.middlesexgases.com/

Product Code: Octafluoropropane

Section 2: Hazards Identification

Warning

Hazard Classification:
Gases Under Pressure

Hazard Statements:
Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
76-19-7
## Section 4: First Aid Measures

<table>
<thead>
<tr>
<th>Skin Contact</th>
<th>Eye Contact</th>
<th>Ingestion</th>
<th>Inhalation</th>
<th>Note to Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flush skin with lukewarm water for 15 minutes.</td>
<td>Flush eyes with lukewarm water for 15 minutes.</td>
<td>Not likely route of exposure</td>
<td>Remove victim to fresh air. If breathing is difficult administer artificial respiration. Get medical help immediately.</td>
<td>Consider oxygen.</td>
</tr>
</tbody>
</table>

## Section 5: Fire Fighting Measures

<table>
<thead>
<tr>
<th>Suitable Extinguishing Media</th>
<th>Products of Combustion</th>
<th>Protection of Firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-flammable. Use suitable extinguishing media for surrounding fire.</td>
<td>Non-flammable</td>
<td>Wear self-contained breathing apparatus.</td>
</tr>
</tbody>
</table>

## Section 6: Accidental Release Measures

<table>
<thead>
<tr>
<th>Personal Precautions</th>
<th>Environmental Precautions</th>
<th>Methods for Containment</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact emergency personnel. Keep unnecessary people away.</td>
<td>Avoid contamination of environment.</td>
<td>Stop leak if possible without risk</td>
<td>Contact emergency personnel.</td>
</tr>
</tbody>
</table>

## Section 7: Handling and Storage

<table>
<thead>
<tr>
<th>Handling</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125°F (52°C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.</td>
<td>Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier.</td>
</tr>
</tbody>
</table>

## Section 8: Exposure Controls(Personal Protection)

<table>
<thead>
<tr>
<th>Exposure Guidelines</th>
<th>Engineering Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not established.</td>
<td>No specific controls are needed.</td>
</tr>
</tbody>
</table>

### Eye Protection | Skin Protection | Respiratory Protection |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear goggles</td>
<td>Wear chemical resistant clothing</td>
<td>Wear self-contained breathing apparatus.</td>
</tr>
</tbody>
</table>

**General Hygiene considerations**
- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking
Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Appearance</th>
<th>Color</th>
<th>Change in Appearance</th>
<th>Physical Form</th>
<th>Odor</th>
<th>Taste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>Clear</td>
<td>Colorless</td>
<td>N/A</td>
<td>Gas</td>
<td>Faint odor, sweet odor</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Flammability</th>
<th>Partition Coefficient</th>
<th>Autoignition Temperature</th>
<th>Upper Explosive Limits</th>
<th>Lower Explosive Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not flammable</td>
<td>Not available</td>
<td>Not available</td>
<td>Nonflammable</td>
<td>Nonflammable</td>
<td>Nonflammable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Freezing Point</th>
<th>Vapor Pressure</th>
<th>Vapor Density</th>
<th>Specific Gravity</th>
<th>Water Solubility</th>
<th>pH</th>
<th>Odor Threshold</th>
<th>Evaporation Rate</th>
<th>Viscosity</th>
</tr>
</thead>
<tbody>
<tr>
<td>-34.15°F (-36.75°C)</td>
<td>-233.84°F (-147.69°C)</td>
<td>114.8 psia (791.5 kPa abs)</td>
<td>6.61 (Air=1)</td>
<td>6.5</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>High</td>
<td>Not available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Molecular Weight</th>
<th>Molecular Formula</th>
<th>Density</th>
<th>Weight per Gallon</th>
<th>Volatility by Volume</th>
<th>Volatility</th>
<th>Solvent Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>188.03 g/mole</td>
<td>C3-F8</td>
<td>0.4996</td>
<td>Not available</td>
<td>100%</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

<table>
<thead>
<tr>
<th>Stability</th>
<th>Conditions to Avoid</th>
<th>Incompatible Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable at normal temperatures and pressures.</td>
<td>Stable at normal temperatures and pressures.</td>
<td>Not known</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Decomposition Products</th>
<th>Possibility of Hazardous Reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluorides</td>
<td>Polymerization may occur.</td>
</tr>
</tbody>
</table>

Section 11: Toxicology Information

### Acute Effects

<table>
<thead>
<tr>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDLo Intravenous Rat 25 mL/kg</td>
<td>Not available</td>
<td>Asphyxiant. High concentrations may cause dizziness, nausea, vomiting, disorientation, confusion, incoordination, and narcosis. Effects are due to suffocation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye Irritation</th>
<th>Skin Irritation</th>
<th>Sensitization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid: frostbite, blurred vision</td>
<td>Liquid can cause frostbite. Prolonged exposure can cause harmful amounts to be absorbed.</td>
<td>Can cause rapid suffocation. May cause frostbite.</td>
</tr>
</tbody>
</table>

### Chronic Effects

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Mutagenicity</th>
<th>Reproductive Effects</th>
<th>Developmental Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
<td>No data</td>
</tr>
</tbody>
</table>

Section 12: Ecological Information

<table>
<thead>
<tr>
<th>Fate and Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco toxicity</td>
</tr>
<tr>
<td>Fish toxicity: Not available</td>
</tr>
<tr>
<td>Invertibrate toxicity: Not available</td>
</tr>
<tr>
<td>Algal toxicity: Not available</td>
</tr>
<tr>
<td>Phyto toxicity: Not available</td>
</tr>
<tr>
<td>Other toxicity: Not available</td>
</tr>
</tbody>
</table>

Section 13: Disposal Considerations

Return cylinder to supplier. Dispose of in accordance with applicable regulations.
Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>ID Number</th>
<th>Hazard Class or Division</th>
<th>Packing Group</th>
<th>Labeling Requirements</th>
<th>Passenger Aircraft or Railcar Quantity Limitations</th>
<th>Cargo Aircraft Only Quantity Limitations</th>
<th>Additional Shipping Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octafluoropropane</td>
<td>UN2424</td>
<td>2.2</td>
<td>Not applicable</td>
<td>Nonflammable gas</td>
<td>75 kg or L</td>
<td>150 kg</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Canadian Transportation of Dangerous Goods

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>UN Number</th>
<th>Class</th>
<th>Packing Group / Risk Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octafluoropropane</td>
<td>UN2424</td>
<td>2.2</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Section 15: Regulatory Information

U.S. Regulations

<table>
<thead>
<tr>
<th>CERCLA Sections</th>
<th>SARA 355.30</th>
<th>SARA 355.40</th>
</tr>
</thead>
</table>

SARA 370.21

<table>
<thead>
<tr>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Reactive</th>
<th>Sudden Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65

Not Listed.

Canadian Regulations

WHMIS Classification

A

National Inventory Status

<table>
<thead>
<tr>
<th>US Inventory (TSCA)</th>
<th>TSCA 12b Export Notification</th>
<th>Canada Inventory (DSL/NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on inventory.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Section 16: Other Information

NFPA Rating

HEALTH=1 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard