Material Name: XENON

***Section 1 - PRODUCT AND COMPANY IDENTIFICATION***

Manufacturer Information
Electronic Fluorocarbons, LLC
3266 Bergey Road
Hatfield PA 19440

General Information: 1-215-443-9600
Emergency#: 1-800-535-5053 (Infotrac)
Outside the US: +1-352-323-3500 (Call Collect)

Product Identifier: Xenon

Trade Names/Synonyms
UN 2036; Xe

Chemical Family
Inorganic, Gas

Product Use
Industrial and Specialty Gas Applications.

Restrictions on Use
None known.

***Section 2 - HAZARDS IDENTIFICATION***

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Gases Under Pressure - Liquefied gas

Specific Target Organ Toxicity - Single Exposure - Category 3
Simple Asphyxiant

GHS Label Elements
Symbol(s)

Signal Word
Warning

Hazard Statement(s)
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statement(s)
Prevention
Use only outdoors or in a well-ventilated area.
Avoid breathing dust/fume/gas/mist/vapours/spray.

Response
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
Safety Data Sheet

Material Name: XENON

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Store in a well-ventilated place.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards
Frostbite may occur from rapid evaporation of the liquified gas.

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-63-3</td>
<td>XENON</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Section 4 - FIRST AID MEASURES

**Inhalation**
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**Skin**
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eyes**
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion**
If swallowed, get medical attention.

**Most Important Symptoms/Effects**
**Acute**
Frostbite, suffocation

**Delayed**
No information on significant adverse effects

### Section 5 - FIRE FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media**
Carbon Dioxide, regular dry chemical, Large fires: Use regular foam or flood with fine water spray.

**Unsuitable Extinguishing Media**
None known.

**Special Hazards Arising from the Chemical**
Negligible fire hazard. Containers may rupture or explode if exposed to heat.

**Hazardous Combustion Products**
None known.

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). **Special Protective Equipment and Precautions for Firefighters**
Wear personal protective clothing and equipment such as self-contained breathing apparatus (SCBA) for protection against possible exposure.
Safety Data Sheet

Material Name: XENON

***Section 6 - ACCIDENTAL RELEASE MEASURES***

Personal Precautions, Protective Equipment and Emergency Procedures
Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

Methods and Materials for Containment and Cleaning Up
Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304).

Environmental Precautions
Avoid release to the environment.

***Section 7 - HANDLING AND STORAGE***

Precautions for Safe Handling
None needed according to classification criteria.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Protect from sunlight. Store in a well-ventilated place.

Incompatible Materials
   Halogens

***Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION***

Component Exposure Limits
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures
There are no biological limit values for any of this product's components.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)
There are no biological limit values for any of this product's components.

Engineering Controls
Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment
Eye/face protection
   Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. Eye protection not required, but recommended.

Skin Protection
   Protective clothing is not required.

Respiratory Protection
   Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations
   For the gas: Wear appropriate chemical resistant gloves. For the liquid: Wear appropriate protective, cold insulating clothing.

***Section 9 - PHYSICAL AND CHEMICAL PROPERTIES***

| Appearance | Not available | Physical State | gas |
Safety Data Sheet

Material Name: XENON

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-112 °C (-170 °F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>-108 °C (-162 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>Autoignition</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>4.561</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>0.108 %</td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.528 cp</td>
</tr>
<tr>
<td>Density</td>
<td>5.8878 g/L</td>
</tr>
<tr>
<td>Taste</td>
<td>tasteless</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>131.3</td>
</tr>
</tbody>
</table>

**Section 10 - STABILITY AND REACTIVITY**

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions
Will not polymerize.

Conditions to Avoid
Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. **Incompatible**

Materials
Halogens

Hazardous decomposition products

**Section 11 - TOXICOLOGICAL INFORMATION**

Information on Likely Routes of Exposure

Inhalation
nausea, vomiting, symptoms of drunkenness, suffocation, convulsions, coma

Skin Contact
no information on significant adverse effects

Ingestion
no information on significant adverse effects

Acute and Chronic Toxicity
Material Name: XENON

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and no selected endpoints have been identified

Immediate Effects
Frostbite, suffocation

Delayed Effects
No information on significant adverse effects

Irritation/Corrosivity Data
No information available for the product

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Component Carcinogenicity
None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity
No data available.

Tumorigenic Data
No data available

Reproductive Toxicity
No data available.

Specific Target Organ Toxicity - Single Exposure
No target organs identified

Specific Target Organ Toxicity - Repeated Exposure
No target organs identified

Aspiration hazard
No data available.

Medical Conditions Aggravated by Exposure
No data available.

***Section 12 - ECOLOGICAL INFORMATION***

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

***Section 13 - DISPOSAL CONSIDERATIONS***

Disposal Methods
Dispose in accordance with all applicable regulations.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components

***Section 14 - TRANSPORT INFORMATION***

US DOT Information:
Shipping Name: XENON, COMPRESSED
Hazard Class: 2.2
Safety Data Sheet

Material Name: XENON
UN/NA #: UN2036
Required Label(s): 2.2

TDG Information:
Shipping Name: XENON
Hazard Class: 2.2
UN#: UN2036
Required Label(s): 2.2

***Section 15 - REGULATORY INFORMATION***

U.S. Federal Regulations
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.
SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes Chronic Health: No Fire: No Pressure: Yes Reactivity: No

U.S. State Regulations
None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA
Not listed under California Proposition 65

Component Analysis - Inventory
XENON (7440-63-3)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

***Section 16 - OTHER INFORMATION***

NFPA Ratings
Health: 1 Fire: 2 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Updated: 06/01/2016

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory, EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law, JP - Japan; Kow - Octanol/water partition coefficient; KECI - Korea Existing Chemicals Inventory, KECL – Korea Existing Chemicals List, KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LisTs™ - ChemADVISOR’s Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH-
Material Name: XENON


Other Information

Disclaimer:
Electronic Fluorocarbons, LLC makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Electronic Fluorocarbons, LLC shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.