Material Name: Hydrogen Iodide

**Section 1 - IDENTIFICATION**

Material Name
Hydrogen Iodide

Synonyms
Anhydrous hydriodic acid; Hydroiodic acid

Chemical Family
Acids, inorganic

Product Use
Industrial.

Restrictions on Use
None known.

Details of the supplier of the safety data sheet
Electronic Fluorocarbons
3266 Bergey Road
Hatfield PA 19440
General Information: 1-215-443-9600
Emergency #: 1-800-535-5053
Outside the US: 1-352-323-3500 (Call collect)

**Section 2 - HAZARDS IDENTIFICATION**

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
- Gases Under Pressure - Liquefied gas
- Skin Corrosion/Irritation - Category 1
- Serious Eye Damage/Eye Irritation - Category 1
- Specific target organ toxicity - Single exposure - Category 1 (respiratory system)
- Specific target organ toxicity - Repeated exposure - Category 1 (respiratory system)
- Simple Asphyxiants

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
- Contains gas under pressure; may explode if heated.
- Causes severe skin burns and eye damage.
- May displace oxygen and cause rapid suffocation.
- Causes damage to respiratory system.
- Causes damage to organs through prolonged or repeated exposure. **Precautionary Statement(s)**

Prevention
- Do not breathe gas.
- Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage
Protect from sunlight.
Store in a well-ventilated place.
Store locked up.

Disposal
Dispose in accordance with all applicable regulations.

Other Hazards
May cause frostbite upon sudden release of liquefied gas.

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### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10034-85-2</td>
<td>Hydrogen Iodide</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. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

**Skin**
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

**Eyes**
Immediately flush eyes with plenty of water for at least 60 minutes. Then get immediate medical attention.

**Ingestion**
If a large amount is swallowed, get medical attention.

**Most Important Symptoms/Effects**

**Acute**
Frostbite, respiratory tract burns, skin burns, eye burns, mucous membrane burns, respiratory system damage

**Delayed**
respiratory system damage

**Note to Physicians**
For inhalation, consider oxygen.
**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. Pressurized containers may rupture or explode if exposed to sufficient heat.

Fire Fighting Measures
- Do not get water inside container. 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. Keep unnecessary people away, isolate hazard area and deny entry. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Special Protective Equipment and Precautions for Firefighters
- Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

**Section 6 - ACCIDENTAL RELEASE MEASURES**

Personal Precautions, Protective Equipment and Emergency Procedures
- Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
- Keep unnecessary people away, isolate hazard area and deny entry. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Stop leak if possible without personal risk. Reduce vapors with water spray. Ventilate closed spaces before entering. Avoid heat, flames, sparks and other sources of ignition.

Environmental Precautions
- Avoid release to the environment.

**Section 7 - HANDLING AND STORAGE**

Precautions for Safe Handling
- Keep away from heat, sparks and flame. Do not breathe gas, fumes, vapor, or spray. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Do not get in eyes, on skin, or on clothing. Use only with adequate ventilation. Keep container tightly closed.

Including any incompatibilities

Conditions for Storage,
- Protect from sunlight.
- Store in a well-ventilated place.
- Store locked up.
- Store and handle in accordance with all current regulations and standards. Store in a well-ventilated area. Protect from sunlight. Protect from physical damage. Keep locked up. Keep separated from incompatible substances. **Incompatible Materials**
  - combustible materials, halogens, metals, oxidizing materials, peroxides

**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.

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 or process enclosure ventilation system. Ensure compliance with applicable exposure limits.
Individual Protection Measures, such as Personal Protective Equipment

**Eye/face protection**
Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection**
For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

**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: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

---

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Appearance</th>
<th>colorless gas</th>
<th>Physical State</th>
<th>gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>pungent odor</td>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
<td>pH</td>
<td>(Acidic in solution)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-50 °C (-58 °F)</td>
<td>Boiling Point</td>
<td>-35 °C (-31 °F)</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
<td>Freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available</td>
<td>Flash Point</td>
<td>(Not flammable)</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>4.5</td>
<td>Specific Gravity (water=1)</td>
<td>2.85 at -47 °C</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>70 % (@ 10 °C)</td>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
<td>Kinematic viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available</td>
<td>Density</td>
<td>6.6 g/L</td>
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<tr>
<td>Physical Form</td>
<td>gas</td>
<td>Molecular Formula</td>
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<tr>
<td>Molecular Weight</td>
<td>127.91</td>
<td></td>
<td></td>
</tr>
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</table>

**Solvent**
- Soluble
- alcohol
**Section 10 - STABILITY AND REACTIVITY**

**Chemical Stability**
Stable at normal temperatures and pressure.

**Possibility of Hazardous Reactions**
Will not polymerize.

**Conditions to Avoid**
Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

**Incompatible Materials**
combustible materials, halogens, metals, oxidizing materials, peroxides

**Hazardous decomposition products**
iodinated compounds

**Section 11 - TOXICOLOGICAL INFORMATION**

**Information on Likely Routes of Exposure**

**Inhalation**
burns, lung congestion, digestive disorders

**Skin Contact**
burns

**Eye Contact**
burns

**Ingestion**
burns

**Acute and Chronic Toxicity**

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

**Product Toxicity Data**

**Acute Toxicity Estimate**
No data available.

**Immediate Effects**
respiratory tract burns, skin burns, eye burns, mucous membrane burns, respiratory system damage

**Delayed Effects**
respiratory system damage

**Irritation/Corrosivity Data**
No animal testing data available for skin or eyes.

**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**
skin, eyes, respiratory system

**Specific Target Organ Toxicity - Repeated Exposure**
respiratory system

**Aspiration hazard**
Safety Data Sheet

Material Name: Hydrogen Iodide

Not applicable.

Medical Conditions Aggravated by Exposure None known.

**Section 12 - ECOLOGICAL INFORMATION**

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

Persistence and Degradability
Readily hydrolyzes to form hydriodic acid.

Bioaccumulative Potential
No data available.

Mobility
No data available.

**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 component

**Section 14 - TRANSPORT INFORMATION**

Component Marine Pollutants (IMDG)
Not a marine pollutant.

US DOT Information:
Shipping Name: HYDROGEN IODIDE, ANHYDROUS
Hazard Class: 2.3
UN/NA #: UN2197
Required Label(s): 2.3
Additional information: Toxic-Inhalation Hazard Zone C

IMDG Information:
Shipping Name: HYDROGEN IODIDE, ANHYDROUS
Hazard Class: 2.3
UN#: UN2197
Required Label(s): 2.3
International Bulk Chemical Code
This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

**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)** 2016 reporting categories
Acute Health: Yes Chronic Health: Yes Fire: No Pressure: Yes Reactivity: No
SARA Section 311/312 (40 CFR 370 Subparts B and C) 2017 reporting categories
Gas Under Pressure; Skin Corrosion/Irritation; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity; Simple Asphyxiating
U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:
Material Name: Hydrogen Iodide

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen Iodide</td>
<td>10034-85-2</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Not listed under California Proposition 65
Canada Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

**Hydrogen Iodide 10034-85-2**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>1 %</td>
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</tbody>
</table>

WHMIS Classification
A, E

Component Analysis - Inventory Hydrogen Iodide (10034-85-2)

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

**Section 16 - OTHER INFORMATION**

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

Other Information
Electronic Fluorocarbons 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 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.
Safety Data Sheet

Material Name: Hydrogen Iodide

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; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; 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; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; 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; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States