1. Identification

Product Name: Hydrobromic acid, ca. 48 wt% solution in water

Cat No.: AC223320000; AC223320025; AC223325000

Synonyms: Hydrogen bromide in aqueous solution.

Recommended Use: Laboratory chemicals.

Uses advised against: Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company:
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US: 001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US: 001-800-424-9300 / Europe: 001-703-527-3887

2. Hazard(s) identification

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

<table>
<thead>
<tr>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
</tr>
<tr>
<td>Target Organs - Respiratory system.</td>
</tr>
</tbody>
</table>

Label Elements

Signal Word: Danger

Hazard Statements
May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation
Hydrobromic acid, ca. 48 wt% solution in water

Revision Date 24-Dec-2021

Precautionary Statements

Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep only in original container

Response
Immediately call a POISON CENTER or doctor/physician

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Spills
Absorb spillage to prevent material damage

Storage
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant polypropylene container with a resistant inliner

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>52</td>
</tr>
<tr>
<td>Hydrobromic acid</td>
<td>10035-10-6</td>
<td>48</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

Inhalation
If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory
Hydrobromic acid, ca. 48 wt% solution in water

**Ingestion**
Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.

**Most important symptoms and effects**
Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Notes to Physician**
Treat symptomatically

5. **Fire-fighting measures**

- **Suitable Extinguishing Media**
  CO₂, dry chemical, dry sand, alcohol-resistant foam.

- **Unsuitable Extinguishing Media**
  No information available

- **Flash Point**
  No information available

- **Autoignition Temperature**
  No information available

- **Explosion Limits**
  No data available

- **Sensitivity to Mechanical Impact**
  No information available

- **Sensitivity to Static Discharge**
  No information available

**Specific Hazards Arising from the Chemical**
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

**Hazardous Combustion Products**
Halogenated compounds. Thermal decomposition can lead to release of irritating gases and vapors.

**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. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. **Accidental release measures**

**Personal Precautions**
Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Should not be released into the environment.

**Environmental Precautions**
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**Methods for Containment and Clean Up**

7. **Handling and storage**

**Handling**
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

**Storage**
8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>Ceiling: 2 ppm</td>
<td>(Vacated) Ceiling: 3 ppm</td>
<td>IDLH: 30 ppm</td>
<td>Ceiling: 2 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) Ceiling: 10 mg/m³</td>
<td>Ceiling: 3 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 3 ppm</td>
<td>Ceiling: 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 10 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

Tight sealing safety goggles. Face protection shield.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear to yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-11 °C / 12.2 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>126 - 128 °C / 258.8 - 262.4 °F @ 760 mmHg</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability  (solid,gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>Upper: No data available  Lower: No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>8 mm Hg @ 25 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.8</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.480</td>
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<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>H Br</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>80.9</td>
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</tbody>
</table>

10. Stability and reactivity

Reactive Hazard

None known, based on information available
Hydrobromic acid, ca. 48 wt% solution in water

Revision Date: 24-Dec-2021

Stability
Light sensitive. Air sensitive.

Conditions to Avoid

Incompatible Materials
Strong oxidizing agents, Metals

Hazardous Decomposition Products
Halogenated compounds, Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Oral LD50

Dermal LD50

Vapor LC50

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral Water</th>
<th>LD50 Dermal Water</th>
<th>LC50 Inhalation</th>
<th>LC50 = 2858 ppm (rat) 1 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>Not listed</td>
<td>Not listed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products
No information available

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

Irritation
Causes burns by all exposure routes

Sensitization
No information available

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Hydrobromic acid</td>
<td>10035-10-6</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects
No information available

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

STOT - single exposure
Respiratory system

STOT - repeated exposure
None known

Aspiration hazard
No information available

Symptoms / effects, both acute and delayed
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.
Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information
No information available

Other Adverse Effects
The toxicological properties have not been fully investigated.
12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>EC₅₀ = 130 mg/L 72h</td>
<td>LC₅₀ = 65.04 mg/L 96h</td>
<td>Not listed</td>
<td>EC₅₀ = 19 mg/L 48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability  Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/Accumulation  No information available.

Mobility  Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods  Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
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<tbody>
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<td>UN1788</td>
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<tr>
<td>Proper Shipping Name</td>
<td>HYDROBROMIC ACID</td>
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<tr>
<td>Hazard Class</td>
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<tr>
<td>Packing Group</td>
<td>II</td>
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</table>

<table>
<thead>
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<tbody>
<tr>
<td>UN-No</td>
<td>UN1788</td>
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<td>HYDROBROMIC ACID</td>
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<tr>
<td>Hazard Class</td>
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<tr>
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<td>UN-No</td>
<td>UN1788</td>
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<tr>
<td>Proper Shipping Name</td>
<td>HYDROBROMIC ACID</td>
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<tr>
<td>Hazard Class</td>
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<table>
<thead>
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<tr>
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</tr>
<tr>
<td>Proper Shipping Name</td>
<td>HYDROBROMIC ACID</td>
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<td></td>
</tr>
<tr>
<td>Hazard Class</td>
<td>8</td>
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</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active-Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
<tr>
<td>Hydrobromic acid</td>
<td>10035-10-6</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend:
TSCA  US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export  Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).
Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL
---|---|---|---|---|---|---|---|---|---|---
Water | 7732-18-5 | X | - | 231-791-2 | X | X | - | X | X | KE-35400
Hydrobromic acid | 10035-10-6 | X | - | 233-113-0 | X | X | X | X | X | KE-20187

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

**U.S. Federal Regulations**

**SARA 313**
Not applicable

**SARA 311/312 Hazard Categories**
See section 2 for more information

**CWA (Clean Water Act)**
Not applicable

**Clean Air Act**
Not applicable

**OSHA - Occupational Safety and Health Administration**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specifically Regulated Chemicals</th>
<th>Highly Hazardous Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>-</td>
<td>TQ: 5000 lb</td>
</tr>
</tbody>
</table>

**CERCLA**
Not applicable

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

**U.S. State Right-to-Know Regulations**

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hydrobromic acid</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

**U.S. Department of Transportation**

- Reportable Quantity (RQ): N
- DOT Marine Pollutant: N
- DOT Severe Marine Pollutant: N

**U.S. Department of Homeland Security**

- **Legend** - STQs = Screening Threshold Quantities, APA = A placarded amount

<table>
<thead>
<tr>
<th>Component</th>
<th>DHS Chemical Facility Anti-Terrorism Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>Theft STQs - 500lb (anhydrous)</td>
</tr>
</tbody>
</table>

**Other International Regulations**

**Mexico - Grade**
No information available

**Authorisation/Restrictions according to EU REACH**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrobromic acid</td>
<td>-</td>
<td>-</td>
<td>Use restricted. See item 75. (see link for restriction details)</td>
</tr>
</tbody>
</table>


**Safety, health and environmental regulations/legislation specific for the substance or mixture**
Hydrobromic acid, ca. 48 wt% solution in water

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OECD HPV</th>
<th>Persistent Organic Pollutant</th>
<th>Ozone Depletion Potential</th>
<th>Restriction of Hazardous Substances (RoHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Listed</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hydrobromic acid</td>
<td>10035-10-6</td>
<td>Listed</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
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<td>Not applicable</td>
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<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Annex I - Y34</td>
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</table>

16. Other information

Prepared By                    Regulatory Affairs
                                Thermo Fisher Scientific
                                Email: EMSDS.RA@thermofisher.com

Creation Date                  02-Sep-2010
Revision Date                  24-Dec-2021
Print Date                     24-Dec-2021
Revision Summary               This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS