

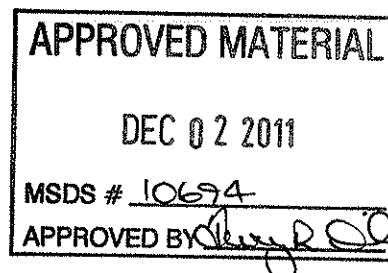
(10694)



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

Material name: HYDROCHLORIC ACID  
 Version #: 07  
 Revision date: 08-25-2011  
 CAS #: Mixture  
 Product Codes: J.T.Baker: 5367, 5537, 5800, 5814, 5821, 5861, 5862, 6900, 9165, 9529, 9530, 9534, 9535, 9536, 9537, 9538, 9539, 9543, 9544, 9548, 9551, 9555, 9625  
 Macron: 2062, 20620, 2515, 25496, 2612, 2624, 2626, 3861, 5587, H611, H613, H616, H987, H999, IM2612, V001, V078, V187, V226  
 Synonym(s): Muriatic acid \* hydrogen chloride, aqueous  
 Manufacturer information: Avantor Performance Materials, Inc.  
 3477 Corporate Parkway  
 Suite #200  
 Center Valley, PA 18034 US  
 24 Hour Emergency 908-859-2151  
 Chemtrec 800-424-9300  
 Customer Service 855-282-6867



## 2. Hazards Identification

Emergency overview: DANGER  
 Corrosive. Causes severe skin and eye burns. Causes digestive tract burns. Mist or vapor extremely irritating to eyes and respiratory tract.

Potential health effects  
 Routes of exposure: Ingestion. Inhalation. Skin contact. Eye contact.  
 Eyes: Corrosive. Causes severe eye burns. Vapor or spray may cause eye damage, impaired sight or blindness.  
 Skin: Corrosive. Causes severe skin burns.  
 Inhalation: Corrosive. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.  
 Ingestion: Corrosive. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Target organs: Eyes. Skin. Lungs. Respiratory system.  
 Chronic effects: Corrosive. Prolonged contact causes serious tissue damage.  
 Potential environmental effects: The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

## 3. Composition / Information on Ingredients

| Hazardous components     | CAS #     | Percent  |
|--------------------------|-----------|----------|
| HYDROGEN CHLORIDE        | 7647-01-0 | 15 - 40  |
| Non-hazardous components | CAS #     | Percent  |
| WATER                    | 7732-18-5 | 60 - 100 |

## 4. First Aid Measures

First aid procedures  
 Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

|                           |   |
|---------------------------|---|
| <b>Skin contact</b>       | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.                              |
| <b>Inhalation</b>         | Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.   |
| <b>Ingestion</b>          | Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.   |
| <b>Notes to physician</b> | Keep victim under observation. Treat symptomatically.   |
| <b>General advice</b>     | In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Show this safety data sheet to the doctor in attendance. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire Fighting Measures

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|   |   |
|---|---|
| <b>Flammable properties</b>                       | The product is not flammable. No unusual fire or explosion hazards noted.   |
| <b>Extinguishing media</b>                        |   |
| <b>Suitable extinguishing media</b>               | Water. Carbon dioxide (CO2). Dry chemical powder. Foam.   |
| <b>Unsuitable extinguishing media</b>             | None known.   |
| <b>Protection of firefighters</b>                 |   |
| <b>Specific hazards arising from the chemical</b> | Fire may produce irritating, corrosive and/or toxic gases.  |
| <b>Protective equipment for firefighters</b>      | Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires. |
| <b>Fire fighting equipment/instructions</b>       | Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.   |
| <b>Specific methods</b>                           | In the event of fire and/or explosion do not breathe fumes.   |

## 6. Accidental Release Measures

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|                                  |  |
|----------------------------------|--|
| <b>Personal precautions</b>      | Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.   |
| <b>Environmental precautions</b> | Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.   |
| <b>Methods for containment</b>   | Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.   |
| <b>Methods for cleaning up</b>   | <p>Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Neutralize spill area and washings with soda ash or lime. Collect in a non-combustible container for prompt disposal.</p> <p>J. T. Baker NEUTRASORB® acid neutralizers are recommended for spills of this product.</p> |

## 7. Handling and Storage

|          |   |
|----------|---|
| Handling | Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes. |
| Storage  | Keep tightly closed in a dry, cool and well-ventilated place. Do not store in metal containers.   |

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

#### Canada - British Columbia

| Components                    | Type    | Value      |
|-------------------------------|---------|------------|
| HYDROGEN CHLORIDE (7647-01-0) | Ceiling | 2.0000 ppm |

#### Canada - Ontario

| Components                    | Type    | Value      |
|-------------------------------|---------|------------|
| HYDROGEN CHLORIDE (7647-01-0) | Ceiling | 2.0000 ppm |

#### Canada - Quebec

| Components                    | Type    | Value                                  |
|-------------------------------|---------|--|
| HYDROGEN CHLORIDE (7647-01-0) | Ceiling | 5.0000 ppm<br>7.5000 mg/m <sup>3</sup> |

|                      |   |
|----------------------|---|
| Engineering controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |
|----------------------|---|

### Personal protective equipment

|                        |   |
|------------------------|---|
| Eye / face protection  | Wear safety glasses with side shields (or goggles) and a face shield.   |
| Skin protection        | Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.   |
| Respiratory protection | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with acid gas cartridge. |
| General                | Provide eyewash station and safety shower. Wear chemical protective equipment that is specifically recommended by the manufacturer. Launder contaminated clothing before reuse.   |

## 9. Physical & Chemical Properties

|                  |                                 |
|------------------|---------------------------------|
| Appearance       | Clear.                          |
| Color            | Colorless.                      |
| Odor             | Pungent.                        |
| Odor threshold   | Not available.                  |
| Physical state   | Liquid.                         |
| Form             | Liquid.                         |
| pH               | 0.1 (1.0 N Solution)            |
| Melting point    | -14.8 - -61.6 °F (-26 - -52 °C) |
| Freezing point   | -14.8 - -61.6 °F (-26 - -52 °C) |
| Boiling point    | 118.4 - 194 °F (48 - 90 °C)     |
| Flash point      | Not available.                  |
| Evaporation rate | Not available.                  |

|  |                 |
|--|-----------------|
| Flammability limits in air, upper, % by volume | Not available.  |
| Flammability limits in air, lower, % by volume | Not available.  |
| Vapor pressure                                 | 2.13 - 28.3 kPa |
| Vapor density                                  | Not available.  |
| Specific gravity                               | 1.149 - 1.189   |
| Relative density                               | Not available.  |
| Solubility (water)                             | Not available.  |
| Partition coefficient (n-octanol/water)        | Not available   |
| Auto-ignition temperature                      | Not available.  |
| Decomposition temperature                      | Not available.  |
| Molecular formula                              | HCl             |

## 10. Chemical Stability & Reactivity Information

|                                    |  |
|------------------------------------|--|
| Chemical stability                 | Material is stable under normal conditions.  |
| Conditions to avoid                | Reacts violently with strong alkaline substances. This product may react with reducing agents. This product may react with oxidizing agents. Do not mix with other chemicals. Unsuitable containers: metals. |
| Incompatible materials             | Incompatible with bases. Metals. Oxidizing agents. Acids. Amines. Reducing agents.   |
| Hazardous decomposition products   | Hydrogen chloride. Chlorine. May decompose upon heating to produce corrosive and/or toxic fumes.   |
| Possibility of hazardous reactions | Hazardous polymerization does not occur.   |

## 11. Toxicological Information

### Toxicological data

| Product                     | Test Results   |
|-----------------------------|--|
| HYDROCHLORIC ACID (Mixture) | Acute Inhalation LC50 Rat: 9188 mg/l estimated<br>Acute Oral LD50 Rat: 581 mg/kg |

| Components                    | Test Results  |
|-------------------------------|---|
| HYDROGEN CHLORIDE (7647-01-0) | Acute Inhalation LC50 Rat: 3124 mg/l 1.00 Hours<br>Acute Oral LD50 Rat: 238 - 277 mg/kg |

|                 |   |
|-----------------|---|
| Sensitization   | Not a skin sensitizer.  |
| Local effects   | Causes severe burns.  |
| Chronic effects | Corrosive. Prolonged contact causes serious tissue damage.                      |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

|                                   |   |
|-----------------------------------|---|
| HYDROGEN CHLORIDE (CAS 7647-01-0) | 3 Not classifiable as to carcinogenicity to humans. |
|-----------------------------------|---|

|                            |  |
|----------------------------|--|
| Neurological effects       | No data available for this product.  |
| Mutagenicity               | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| Reproductive effects       | Contains no ingredient listed as toxic to reproduction   |
| Teratogenicity             | No data available to indicate product or any components present at greater than 0.1% may cause birth defects.    |
| Symptoms and target organs | Corrosive effects.   |

Epidemiology No epidemiological data is available for this product.  
Further information Danger of very serious irreversible effects. Symptoms may be delayed.

## 12. Ecological Information

### Ecotoxicological data

| Product                       | Test Results   |
|-------------------------------|--|
| HYDROCHLORIC ACID (Mixture)   | LC50 Fish: 829 mg/l 96.00 hours estimated                          |
| Components                    | Test Results   |
| HYDROGEN CHLORIDE (7647-01-0) | LC50 Western mosquitofish (Gambusia affinis): 282 mg/l 96.00 hours |

**Ecotoxicity** The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Persistence and degradability** Expected to be readily biodegradable.

**Partition coefficient** Not available

## 13. Disposal Considerations

**Disposal instructions** Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

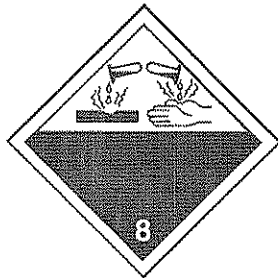
**Waste from residues / unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

## 14. Transport Information

### TDG

Proper shipping name HYDROCHLORIC ACID  
Hazard class 8  
UN number UN1789  
Packing group II



TDG

## 15. Regulatory Information

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS status** Controlled

**WHMIS classification** D1A - Immediate/Serious-VERY TOXIC  
E - Corrosive

### WHMIS labeling



## Inventory status

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## Saf-T-Data

Health: 3 - Severe (Poison)  
Flammability: 0 - None  
Reactivity: 1 - Slight  
Contact: 4 - Extreme (Corrosive)  
Lab Protective Equip: D - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES  
Storage Color Code: W - White (Corrosive)

## 16. Other Information

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### NFPA ratings

Health: 3  
Flammability: 0  
Instability: 1

### Disclaimer

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### Issue date

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