SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifiers
   Product Name: Hydrochloric Acid, Solution 0.01M
   Catalog No: 5077
   Brand Name: Hydrochloric Acid Solution 0.01M
   CAS No.: 7647-01-0

2. Relevant identified uses of the substance or mixture and uses advised against
   Identified Uses: Laboratory chemicals, Manufacturer of substances

3. Details of the supplier of the safety data sheet
   Company: Advanced BioMatrix, Inc.
   Address: 5930 Sea Lion Place
   Carlsbad, CA 92010 USA
   Phone: 1-800-883-8220
   1-760-929-0755 outside USA
   Fax: 1-510-217-3452

4. Emergency telephone number
   Emergency Phone No.: 1-800-883-8220

SECTION 2 – HAZARDS IDENTIFICATION

1. Classification of the substance or mixture
   GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
   Corrosive to metals (Category 1), H290
   Skin corrosion (Category 1B), H314
   Serious eye damage (Category 1), H318
   Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
   For the full text of the H-Statements mentioned in this Section, see Section 16.

2. GHS Label elements, including precautionary statements
   Pictogram

   Signal word: Danger
   Hazard statement(s)
H290  May be corrosive to metals.
H314  Causes severe skin burns and eye damage.
H335  May cause respiratory irritation.

Precautionary statement(s)
P234  Keep only in original container.
P261  Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264  Wash skin thoroughly after handling.
P271  Use only outdoors or in a well-ventilated area.
P280  Wear protective gloves/ protective clothing/ eye protection/ face.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363  Wash contaminated clothing before reuse.
P390  Absorb spillage to prevent material damage.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P405  Store locked up.
P406  Store in corrosive resistant stainless steel container with a resistant inner liner.
P501  Dispose of contents/ container to an approved waste disposal plant.

3. Hazards not otherwise classified (HNOC) or not covered by GHS – None.
**SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS**

1. **Substances**
   - Formula: \( \text{HCl} \)
   - Molecular weight: 36.46 g/mol

   ![Hazardous components table]

**SECTION 4 – FIRST AID MEASURES**

1. **General advice**
   - Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

2. **Eye Contact**
   - Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

3. **Skin Contact**
   - Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4. **Inhalation**
   - If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

5. **Ingestion**
   - Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

6. **Most important symptoms and effects, both acute and delayed**
   - The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

7. **Indication of any immediate medical attention and special treatment needed**
   - No data available

**SECTION 5 – FIREFIGHTING MEASURES**

1. **Extinguishing media**
   - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

2. **Special hazards arising from the substance or mixture**
   - No data available

3. **Advice for firefighters**
Wear self-contained breathing apparatus for firefight if necessary.

4. Further Information
   No data available

SECTION 6 – ACCIDENTAL RELEASE MEASURES

1. Personal precautions, protective equipment and emergency procedures
   Avoid breath vapors, mist or gas.
   For personal protection see section 8.

2. Environmental precautions
   Do not let product enter drains.

3. Methods and materials for containment and cleaning up
   Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

4. Reference to other sections
   For disposal see section 13.

SECTION 7 – HANDLING AND STORAGE

1. Precautions for safe handling
   Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

2. Conditions for safe storage, including any incompatibilities
   Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
   Recommended storage: room temperature

3. Specific end use(s)
   Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS/PERSOAL PROTECTION

1. Workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>C</td>
<td>2.000000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td>Upper Respiratory Tract irritation Not classifiable as a human carcinogen.</td>
<td></td>
</tr>
</tbody>
</table>
2. **Exposure controls**

**Appropriate engineering control**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/Face protection**

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

<table>
<thead>
<tr>
<th>C</th>
<th>5.000000 ppm</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.000000 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Often used in an aqueous solution.

<table>
<thead>
<tr>
<th>C</th>
<th>5.000000 ppm</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.000000 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

The value in mg/m³ is approximate. Ceiling limit is to be determined from breathing-zone air samples.

<table>
<thead>
<tr>
<th>C</th>
<th>2 ppm</th>
<th>USA. ACGIH Threshold Limit Values (TLV)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>C</th>
<th>5 ppm</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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<tr>
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<td></td>
<td>7 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

The value in mg/m³ is approximate. Ceiling limit is to be determined from breathing-zone air samples.

<table>
<thead>
<tr>
<th>C</th>
<th>5 ppm</th>
<th>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product. Dispose of the contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Full contact**
- Material: Nitrile rubber
- Minimum layer thickness: 0.11 mm
- Break through time: 480 min
- Material tested: Dermatril®

**Splash contact**
- Material: Nitrile rubber
- Minimum layer thickness: 0.11 mm
- Break through time: 480 min
- Material tested: Dermatril®

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**
Do not let product enter drains.

### SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>Light yellow</td>
</tr>
<tr>
<td>Color</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td></td>
</tr>
</tbody>
</table>
pH: No data available
Melting point/freezing point: -30°C (-22°F)
Initial boiling point and boiling range: > 100°C (> 212°F) – lit.
Flash point: Not applicable
Evaporation rate: No data available
Flammability: No data available
Upper/lower flammability: No data available
Vapor pressure: 227 hPa (170 mmHg) at 21.1°C (70°F)
Vapor density: No data available
Relative density: 1.2 g/cm³ at 25°C (77°F)
Water solubility: Soluble
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: No data available
Chemical stability: Stable under recommend storage conditions
Possibility of hazardous reactions: No data available
Conditions to avoid: No data available
Incompatible material: Bases, Amines, Alkali metals, Metals, permanganates, e.g. potassium permanganate, Fluorine, metal acetylides, hexalithium disilicide

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas
Other decomposition products - No data available

**In the event of fire: see section 5.**

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute toxicity No data available (Hydrochloric acid)
Inhalation May provoke the following symptoms:
Respiratory irritation, cough,
difficulty in breathing, pneumonia (Hydrochloric acid)

Dermal
No data available (Hydrochloric acid)

Skin corrosion/irritation
Rabbit (Hydrochloric acid)
Result: Causes burn

Serious eye damage/eye irritation
Rabbit (Hydrochloric acid)
Result: Corrosive to eyes

Respiratory or skin sensitization
Did not cause sensitization on laboratory animals (Hydrochloric acid)

Germ cell mutagenicity
No data available (Hydrochloric acid)

Carcinogenicity
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. (Hydrochloric acid)

IARC
3 - Group 3: Not classifiable as to its carcinogenicity to humans (Hydrochloric acid)

NTP
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available (Hydrochloric acid)

Specific target organ toxicity
Single exposure
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. (Hydrochloric acid)

Repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
No aspiration toxicity classification (Hydrochloric acid)

Additional information
RTECS
MW4025000

Inhalation of vapors may cause; burning sensation, Cough, wheezing, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema (Hydrochloric acid)
**To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.**

### SECTION 12 – ECOLOGICAL INFORMATION

**Toxicity**

**Toxicity to fish**

- LC50 - Lepomis macrochirus (Bluegill) - 24.6 mg/l - 96 h (Hydrochloric acid)

**Toxicity to daphnia and other aquatic invertebrates**

- EC50 - Daphnia magna (Water flea) - 4.91 mg/l - 48 h (Hydrochloric acid)

**Persistence and degradability**

- No data available

**Bioaccumulative potential**

- No data available

**Mobility in soil**

- No data available

**Results of PBT and vPvB assessment**

- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**Other adverse effect**

- May be harmful to aquatic organisms due to the shift of the pH. Do not empty into drains.

### SECTION 13 – DISPOSAL CONSIDERATIONS

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

### SECTION 14 – TRANSPORT INFORMATION

**DOT (US)**

- UN number: 1789
- Class: 8
- Packing group: II
- Proper shipping name: Hydrochloric acid
- Poison Inhalation Hazard: No

**IMDG**

- UN number: 1789
- Class: 8 P
IATA

UN number: 1789
Class 8
Packing group II
Proper shipping name Hydrochloric acid

SECTION 15 – REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
- Hydrochloric acid
  - CAS No. 7647-01-0
  - Acute Health Hazard

Massachusetts Right To Know Components
- Hydrochloric acid
  - CAS No. 7647-01-0

Pennsylvania Right To Know Components
- Water
  - CAS No. 7732-18-5
- Hydrochloric acid
  - CAS No. 7647-01-0

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer birth defects, or any other reproductive harm.

SECTION 16 – OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

- **Eye Dam.**
  - **H290**: Serious eye damage
  - **H314**: May be corrosive to metals.
  - **H318**: Causes severe skin burns and eye damage.
  - **H335**: Causes serious eye damage.
  - **Met. Corr.**: May cause respiratory irritation.
  - **Skin Corr.**: Corrosive to metals
  - **STOT SE**: Skin corrosion

- **HMIS Rating**
  - **Health hazard**: 3
<table>
<thead>
<tr>
<th>Chronic Health Hazard</th>
<th>Flammability</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Hazard</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>NFPA Rating</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health hazard</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Further information:**
This information has been prepared by Advanced BioMatrix, Inc. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Advanced BioMatrix, Inc. and its Affiliates shall not be held liable for any damages resulting from handling or from contact with the above product. See [www.advancedbiomatrix.com](http://www.advancedbiomatrix.com) for additional terms and conditions of sale.

**Preparation Information:**
Advanced BioMatrix, Inc.
1-800-883-8220