1 Product and Company Identification

1.1 Product Name: Hydrochloric Acid (HCl), 2N
1.2 Catalog Number: 01704
1.3 Product Use: Laboratory Chemical
1.4 Manufacturer/Supplier: STEMCELL Technologies
   Suite 500-1618 Station Street
   Vancouver, British Columbia V6A 1B6 Canada
1.5 In Case of Emergency Call: 1-800-667-0322

2 Hazards Identification

2.1 Classification of the substance or mixture
   Corrosive to metals (Category 1)
   Skin corrosion (Category 1B)
   Serious eye damage (Category 1)

2.2 Label elements

Pictogram

Signal word
Danger

Hazard statement(s)
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statement(s)
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+330+331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+361+353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.

2.3 Other hazards
No data available
3 Composition / Information on Ingredients

3.1 Substances

Synonyms: Hydrochloric acid solution, hydrogen chloride
Molecular formula: HCl
Molecular weight: 36.46 g/mol

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen chloride</td>
<td>7647-01-0</td>
<td>7.29%</td>
<td>231-595-7</td>
</tr>
</tbody>
</table>

4 First Aid Measures

4.1 Description of first aid measures

4.1.1 If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.1.2 In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.1.3 In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

4.1.4 If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in section 2.2 and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5 Fire Fighting Measures

5.1 Extinguishing Media

5.1.1 Suitable Extinguishing Media
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

5.1.2 Unsuitable Extinguishing Media
No data available

5.2 Special hazards arising from the substance or mixture

5.2.1 Flammable Properties and Hazards
Not flammable or combustible.
5.2.2 Flash Pt
No data available

5.2.3 Autoignition Pt
No data available

5.2.4 Explosive Limits
LEL: No data available UEL: No data available

5.2.5 Hazardous Combustion Products
Hydrogen chloride gas

5.3 Fire Fighting Instructions
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

6 Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 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.

7 Handling and Storage

7.1 Precautions for safe handling
Avoid inhalation of vapour or mist. For precautions see section 2.2.

7.2 Conditions for safe storage
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.

8 Exposure Controls/Personal Protection

8.1 Exposure limits
Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen chloride</td>
<td>7647-01-0</td>
<td>(c)</td>
<td>2 ppm 3 mg/m³</td>
<td>Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)</td>
</tr>
</tbody>
</table>
### Safety Data Sheet

**HYDROCHLORIC ACID (HCl), 2N**

**EFFECTIVE DATE: 2015-05-05**

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>2 ppm</td>
</tr>
<tr>
<td>C</td>
<td>5 ppm 7.5 mg/m³</td>
</tr>
</tbody>
</table>

A substance which may not be recirculated in accordance with section 108

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

**Remarks**

Upper Respiratory Tract irritation
Not classifiable as a human carcinogen

<table>
<thead>
<tr>
<th>C</th>
<th>5 ppm 7.5 mg/m³</th>
<th>USA. NIOSH Recommended Exposure Limits</th>
</tr>
</thead>
</table>

Often used in an aqueous solution.

<table>
<thead>
<tr>
<th>C</th>
<th>5 ppm 7.5 mg/m³</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</th>
</tr>
</thead>
</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 7.5 mg/m³</th>
<th>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</th>
</tr>
</thead>
</table>

**Indicative**

<table>
<thead>
<tr>
<th>STEL</th>
<th>10 ppm 15 mg/m³</th>
<th>Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values</th>
</tr>
</thead>
</table>

**Indicative**

### 8.2 Engineering controls

Use mechanical exhaust or laboratory fume hood to avoid exposure.

### 8.3 Personal protective equipment

#### 8.3.1 Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### 8.3.2 Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### 8.3.3 Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested.
9 Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colourless liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

10 Stability and Reactivity

10.1 Reactivity                                  No data available
10.2 Chemical stability                         Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions          No data available
10.4 Conditions to avoid                        No data available
10.5 Incompatible materials                    No data available
10.6 Hazardous decomposition products           Hazardous decomposition products formed under fire conditions - Hydrogen chloride gas

11 Toxicological Information

11.1 Acute toxicity                             No data available

Oral:                                          No data available
Safety Data Sheet

HYDROCHLORIC ACID (HCl), 2N

Inhalation: No data available
Dermal: No data available
Other: No data available

11.2 Skin corrosion/irritation
No data available

11.3 Serious eye damage/eye irritation
No data available

11.4 Respiratory and/or skin sensitization
No data available

11.5 Germ cell mutagenicity
No data available

11.6 Carcinogenicity
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.

11.7 Reproductive toxicity
No data available

11.8 Specific target organ toxicity - single exposure
No data available

11.9 Specific target organ toxicity - repeated exposure
No data available

11.10 Aspiration hazard
No data available

11.11 Potential health effects
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.
Skin: May be harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.

11.12 Signs and symptoms of exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Stomach - Irregularities - Based on Human Evidence (Sulfuric acid)

11.13 RTECS # No data available

12 Ecological Information

12.1 Toxicity No data available
12.2 Persistence and degradability No data available
12.3 Bioaccumulative potential No data available
12.4 Mobility in soil
No data available

12.5 Other adverse effects
No data available

13 Disposal Considerations

13.1 Waste disposal method
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.

13.2 Contaminated packaging
Dispose of as unused product.

14 Transport Information

14.1 UN number
DOT 1789
ADR/RID 1789
IMDG 1789
IATA 1789

14.2 UN proper shipping name
DOT Hydrochloric acid
ADR/RID HYDROCHLORIC ACID
IMDG HYDROCHLORIC ACID
IATA Hydrochloric acid

14.3 Transport hazard class(es)
DOT 8
ADR/RID 8
IMDG 8
IATA 8

14.4 Packing group
DOT III
ADR/RID III
IMDG III
IATA III

14.5 Environmental hazards
DOT Marine pollutant: No
ADR/RID No
IMDG Marine pollutant: No
IATA No

14.6 Special precautions
No data available

15 Regulatory Information

15.1 USA

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:
Safety Data Sheet

Hydrochloric Acid (HCl), 2N

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<th>Component</th>
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<tbody>
<tr>
<td>Hydrogen chloride</td>
<td>7647-01-0</td>
<td>1993-04-24</td>
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SARA 311/312:
Acute Health Hazard

Massachusetts Right To Know Components

<table>
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<th>Revision Date</th>
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Pennsylvania Right To Know Components

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<th>Revision Date</th>
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<td>Hydrogen chloride</td>
<td>7647-01-0</td>
<td>1993-04-24</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

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<th>CAS #</th>
<th>Revision Date</th>
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<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

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.

15.2 EU

This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

15.3 Canada

WHMIS Classification: E Corrosive Material
This SDS was prepared in accordance with Hazardous Products Regulations (HPR) and WHMIS 2015.

16 Other Information

16.1 Prepared by: Quality Control, STEMCELL Technologies Inc.

16.2 Revision: N/A

16.3 Notice: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product. The information contained in this Safety Data Sheet (SDS) is current as of the Effective Date shown in this document and may be subject to amendment by STEMCELL Technologies Inc.

16.4 Disclaimer: THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.