



Safety Data Sheet

Section 1: Identification

Product identifier

- Product Name** • **Muriatic Acid (7-23 deg. Baume/15-38%)**
Synonyms • HCl; Hydrochloric Acid; Hydrogen Chloride; Muriatic Acid

Relevant identified uses of the substance or mixture and uses advised against

- Recommended use** • Industrial applications

Details of the supplier of the safety data sheet

- Manufacturer** • Axiall, LLC
1000 Abernathy Rd. NE, Suite 1200
Atlanta, GA 30328
United States
www.axiall.com
msdsinfo@axiall.com

Telephone (General) • +1 225-685-1240

- Supplier** • Axiall Canada, Inc.
31, rue de L'Industrie
Beauharnois J6N 1W5
Canada

Telephone (General) • 450-429-4641

Telephone (General) • 450-429-3326 - FAX

Emergency telephone number

- Manufacturer** • +1 304-455-6882

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

- OSHA HCS 2012** • Corrosive to Metals 1
Acute Toxicity Oral 4
Skin Corrosion 1B
Serious Eye Damage 1
Acute Toxicity Inhalation 4
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation

Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • May be corrosive to metals
Harmful if swallowed
Causes severe skin burns and eye damage.
Causes serious eye damage
Harmful if inhaled
May cause respiratory irritation

Precautionary statements

- Prevention** • Keep only in original container.
Do not breathe mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

- Response** • Absorb spillage to prevent material damage.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.
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 or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
Do NOT induce vomiting.

- Storage/Disposal** • Store in corrosive resistant container with a resistant inner liner.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

- OSHA HCS 2012** • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS 2015

Classification of the substance or mixture

- WHMIS 2015** • Corrosive to Metals 1
Acute Toxicity Oral 4
Skin Corrosion 1B
Serious Eye Damage 1
Acute Toxicity Inhalation 4
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation

Label elements

WHMIS 2015

DANGER



- Hazard statements**
- May be corrosive to metals
 - Harmful if swallowed
 - Causes severe skin burns and eye damage.
 - Causes serious eye damage
 - Harmful if inhaled
 - May cause respiratory irritation

Precautionary statements

- Prevention**
- Keep only in original packaging.
 - Do not breathe mist, vapours and/or spray.
 - Wash thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response**
- Absorb spillage to prevent material damage.
 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - Call a POISON CENTER/doctor if you feel unwell.
 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 - Specific treatment, see supplemental first aid information.
 - Wash contaminated clothing before reuse.
 - 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.
 - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 - Rinse mouth.
 - Do NOT induce vomiting.
- Storage/Disposal**
- Store in a well-ventilated place. Keep container tightly closed.
 - Store locked up.
 - Store in corrosive resistant container with a resistant inner liner.
 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

WHMIS 2015

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

Substances

Composition				
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive
Hydrochloric acid	CAS:7647-01-0	15% TO 40%	Inhalation-Rat LC50 • 3124 ppm 1 Hour(s)	OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1; Acute Tox. 4 (oral, inhl); STOT SE 3 Resp. Irrit.; Corr. to Metals WHMIS 2015: Skin Corr. 1B; Eye Dam. 1; Acute Tox. 4 (oral, inhl); STOT SE 3 Resp. Irrit.; Corr. to Metals

Mixtures

- Material does not meet the criteria of a mixture.

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation**
- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Get medical attention immediately.
- Skin**
- For minor skin contact, avoid spreading material on unaffected skin. Remove and isolate contaminated clothing. Wash the contaminated area of body with soap and fresh water. Get medical attention immediately.
- Eye**
- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.
- Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media**
- Use dry chemical, CO₂, water spray (fog), or foam.

- Unsuitable Extinguishing Media**
- No data available

Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Containers may explode when heated. Emits toxic fumes under fire conditions.
- Hazardous Combustion Products**
- Depending on conditions, decomposition products may include the following materials: halogenated compounds, may release dangerous gases (chlorine).

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.
Dike fire control water for later disposal; do not scatter the material.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Ventilate enclosed areas. Do not walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear

appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, spray. Do not get in eyes, on skin, or on clothing.

Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
LARGE SPILLS: Dike far ahead of spill for later disposal.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Keep away from heat. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, spray. Do not get in eyes, on skin, or on clothing. Do not ingest. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Store in a cool, dry, well-ventilated place. Keep away from incompatible materials. Keep from direct sunlight. Separate from alkalis. Do not store above the following temperature: 49°C/120°F. FOR BULK STORAGE CONTAINERS: Bulk storage tanks should be constructed of corrosion-resistant materials such as rubber- or glass-lined steel, fiberglass, or plastic and should be vented to a scrubber to remove acid fumes. Bulk storage tanks should contain a dike sufficiently large enough to contain entire contents.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada British Columbia	Canada Ontario	Canada Quebec	NIOSH
Hydrochloric acid (7647-01-0)	Ceilings	2 ppm Ceiling	2 ppm Ceiling	2 ppm Ceiling	5 ppm Ceiling; 7.5 mg/m3 Ceiling	5 ppm Ceiling; 7 mg/m3 Ceiling
Exposure Limits/Guidelines (Con't.)						
	Result	OSHA				
Hydrochloric acid (7647-01-0)	Ceilings	5 ppm Ceiling; 7 mg/m3 Ceiling				

Exposure controls

Engineering Measures/Controls

- Good general ventilation 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

Respiratory

- If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face

- Wear chemical splash goggles and face shield.

Skin/Body

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. HANDS: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

General Industrial Hygiene Considerations

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless to a light yellow liquid with a pungent odor.
Color	Colorless to light yellow.	Odor	Pungent
Odor Threshold	No data available		
General Properties			
Boiling Point	108 °C(226.4 °F) (Azeotrope @ 20.2%)	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	1 [Conc. (% w/w) 0.36%]
Specific Gravity/Relative Density	1.051 to 1.189 Water=1	Water Solubility	100 %
Viscosity	No data available		
Volatility			
Vapor Pressure	15 to 150 mmHg (torr) @ 20 °C(68 °F)	Vapor Density	1.267 Air=1
Evaporation Rate	No data available	Volatiles (Wt.)	100 %
Volatiles (Vol.)	100 %		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not relevant.		

Environmental

Octanol/Water Partition coefficient	No data available		
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Section 10: Stability and Reactivity**Reactivity**

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under recommended storage and handling conditions.

Possibility of hazardous reactions

- Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid

- When exposed to high temperatures may produce hazardous decomposition products. Avoid increased storage temperature. Pressure hazard.

Incompatible materials

- Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis.

Hazardous decomposition products

- Depending on conditions, decomposition products may include the following materials: halogenated compounds, may release dangerous gases (chlorine).

Section 11 - Toxicological Information**Information on toxicological effects**

	CAS	
Muriatic Acid (7-23 deg. Baume/15-38%)	NDA	Acute Toxicity: Ingestion/Oral-Rat LD50 • 700 mg/kg; Inhalation-Rat LC50 • 3124 ppm; Skin-Rabbit LD50 • >5010 mg/kg
Components		
Hydrochloric acid (15% TO 40%)	7647-01-0	Reproductive: Inhalation-Rat TCLo • 450 mg/m ³ 1 Hour(s)(1D pre); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Specific Developmental Abnormalities:Homeostasis</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Inhalation 4; Acute Toxicity - Oral 4 WHMIS 2015 • Acute Toxicity - Inhalation 4; Acute Toxicity - Oral 4
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Corrosion 1B WHMIS 2015 • Skin Corrosion 1B
Serious eye damage/Irritation	OSHA HCS 2012 • Serious Eye Damage 1 WHMIS 2015 • Serious Eye Damage 1
Skin sensitization	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
Respiratory sensitization	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking

Aspiration Hazard	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
Carcinogenicity	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
Germ Cell Mutagenicity	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
Toxicity for Reproduction	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
STOT-SE	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation WHMIS 2015 • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
STOT-RE	OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)

- May cause respiratory irritation.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)

- Causes severe skin burns.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)

- Causes serious eye damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)

- Harmful if swallowed. May cause irreversible damage to mucous membranes.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Carcinogenic Effects

- This material does contain a component that may cause cancer, however based on regulatory criteria this material is not classified as a carcinogen.

Carcinogenic Effects			
	CAS	IARC	NTP
Arsenic	7440-38-2	Group 1-Carcinogenic	Known Human Carcinogen
Lead	7439-92-1	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class (es)	Packing group	Environmental hazards
DOT	UN1789	Hydrochloric Acid solution	8	II	NDA
TDG	UN1789	HYDROCHLORIC ACID solution	8	II	NDA
IMO/IMDG	UN1789	HYDROCHLORIC ACID solution	8	II	NDA
IATA/ICAO	UN1789	Hydrochloric Acid solution	8	II	NDA

Special precautions for user

- None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- No data available

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications

- Acute

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Hydrochloric acid	7647-01-0	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

- Hydrochloric acid

A, D1A, E (listed under Hydrogen chloride); D1A, E; E (0.036% in aqueous solution, 0.36% in aqueous solution, 3.6% in aqueous solution); D1B, E (28% in aqueous

solution); D1A, E (31.45% in aqueous solution, 35.2% in aqueous solution)

Canada - WHMIS - Ingredient Disclosure List

• Hydrochloric acid	7647-01-0	1 %
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Environment

Canada - CEPA - Priority Substances List

• Hydrochloric acid	7647-01-0	Not Listed
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United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Hydrochloric acid	7647-01-0	5000 lb TQ; 5000 lb TQ (anhydrous)
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U.S. - OSHA - Specifically Regulated Chemicals

• Hydrochloric acid	7647-01-0	Not Listed
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Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Hydrochloric acid	7647-01-0	
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U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Hydrochloric acid	7647-01-0	5000 lb final RQ; 2270 kg final RQ
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U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Hydrochloric acid	7647-01-0	Not Listed
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U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Hydrochloric acid	7647-01-0	5000 lb EPCRA RQ (gas only)
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U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Hydrochloric acid	7647-01-0	500 lb TPQ (gas only)
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U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Hydrochloric acid	7647-01-0	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
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U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Hydrochloric acid	7647-01-0	Not Listed
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U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification

• Hydrochloric acid	7647-01-0	Not Listed
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United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Hydrochloric acid	7647-01-0	Not Listed
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U.S. - California - Proposition 65 - Developmental Toxicity

• Hydrochloric acid	7647-01-0	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Hydrochloric acid	7647-01-0	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Hydrochloric acid	7647-01-0	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Hydrochloric acid	7647-01-0	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Hydrochloric acid	7647-01-0	Not Listed

Other Information

- **WARNING:** This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 16 - Other Information

Revision Date

- 07/February/2017

Preparation Date

- 01/May/2014

Other Information

- NSF Drinking Water Treatment Chemicals Listing - hydrochloric acid from Lake Charles, Louisiana; New Martinsville, West Virginia; Longview, Washington; or Beauharnois, Quebec, Canada, is certified for maximum use at 40 mg/l under NSF/ANSI Standard 60.

Disclaimer/Statement of Liability

- The technical data given herein 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. No guarantee is being given as to the end use performance. The product is sold on the basis that buyers test the product for their specific purposes. This information related to the material designated and may not be valid for such material used in combination with any other materials or in any process.

Key to abbreviations

NDA = No Data Available