

## 1. Identification

<b>Product identifier</b>	<b>Muriatic Acid 31% Inhibited 213 US A</b>	
<b>Other means of identification</b>		
<b>SDS Number</b>	329308-01	
<b>Recommended use</b>	Corrosion inhibitor.	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Company name</b>	Harcros Chemicals Inc	
<b>Address</b>	5200 Speaker Rd. Kansas City, KS 66106 United States	
<b>Main Telephone Number</b>	1-913-321-3131	
<b>Website</b>	www.harcros.com	
<b>E-mail</b>	custserv@harcros.com	
<b>Emergency #: CHEMTREC</b>	1-800-424-9300	
<b>Emergency #: CHEMTREC</b>	1-703-741-5970 (International Number - Call collect)	

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
<b>OSHA defined hazards</b>	Not classified.	

### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. May cause respiratory irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.
<b>Precautionary statement</b>	
<b>Prevention</b>	Avoid breathing mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response</b>	Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Collect spillage.
<b>Storage</b>	Store away from incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in accordance with local, regional, national, and international regulations.
<b>Disposal</b>	Dispose of contents and container in accordance with local, regional, national, and international regulations.

**Hazard(s) not otherwise classified (HNOC)**

None known.

**Supplemental information**

30.55% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 30.55% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Water		7732-18-5	60 - < 70
Hydrochloric Acid		7647-01-0	30 - < 40
2-butoxyethanol		111-76-2	< 1
1-phenylethanone		98-86-2	< 0.1
Other components below reportable levels			< 1

### 4. First-aid measures

#### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician.

#### Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

#### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

#### Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

#### Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Coughing.

#### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

#### General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

#### Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

#### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

#### General fire hazards

No unusual fire or explosion hazards noted.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

#### Methods and materials for clean-up

Absorb/clean with appropriate and compatible material. Stop flow of material if without risk. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

#### Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing mist/vapors. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2-butoxyethanol (CAS 111-76-2)	PEL	240 mg/m <sup>3</sup>
		50 ppm
Hydrochloric Acid (CAS 7647-01-0)	Ceiling	7 mg/m <sup>3</sup>
		5 ppm

#### US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
1-phenylethanone (CAS 98-86-2)	TWA	10 ppm
2-butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Hydrochloric Acid (CAS 7647-01-0)	Ceiling	2 ppm

#### NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
2-butoxyethanol (CAS 111-76-2)	IDLH	1.1 %
		700 ppm
Hydrochloric Acid (CAS 7647-01-0)	IDLH	50 ppm

#### US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Components	Type	Value
2-butoxyethanol (CAS 111-76-2)	TWA	24 mg/m <sup>3</sup>
		5 ppm
Hydrochloric Acid (CAS 7647-01-0)	Ceiling	7 mg/m <sup>3</sup>
		5 ppm

#### US. OARS. Workplace Environmental Exposure Level (WEEL) Guide

Components	Type	Value
1-phenylethanone (CAS 98-86-2)	TWA	50 mg/m <sup>3</sup>
		10 ppm

### Biological limit values

#### ACGIH Biological Exposure Indices (BEI)

Components	Value	Determinant	Specimen	Sampling Time
2-butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

\* - For sampling details, please see the source document.

## Exposure guidelines

### US - California OELs: Skin designation

2-butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

### US - Minnesota Haz Subs: Skin designation applies

2-butoxyethanol (CAS 111-76-2) Skin designation applies.

### US - Tennessee OELs: Skin designation

2-butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

### US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

## Appropriate engineering 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. Eye wash facilities and emergency shower must be available when handling this product.

## Individual protection measures, such as personal protective equipment

### General

It is recommended that users of this product perform a risk assessment to determine the appropriate PPE.

### Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield.

### Skin protection

#### Hand protection

Wear appropriate chemical resistant gloves.

#### Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

### Respiratory protection

Chemical respirator with organic vapor cartridge. Respiratory protection may be required based on the task hazards and potential for exposure.

### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

## General hygiene considerations

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

Clear.

### Physical state

Liquid.

### Form

Liquid.

### Color

Transparent to Translucent

### Odor

Strong.  
Pungent;

### Odor threshold

Not available.

### pH

<1

### Melting point/freezing point

Not available.

### Initial boiling point and boiling range

Not available.

### Flash point

>212.0 °F (>100.0 °C) Pensky-Martens Closed Cup

### Evaporation rate

Not available.

### Flammability (solid, gas)

Not applicable.

### Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

### Vapor pressure

Not available.

### Vapor density

Not available.

### Relative density

Not available.

### Solubility(ies)

Solubility (water) Soluble.

### Partition coefficient (n-octanol/water)

Not available.

### Auto-ignition temperature

Not available.

<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Flash point class</b>	Non-Flammable.
<b>Oxidizing properties</b>	Not oxidizing.
<b>Specific gravity</b>	> 1.145 - < 1.32 @ 60°F

## 10. Stability and reactivity

<b>Reactivity</b>	Reacts violently with strong alkaline substances. This product may react with reducing agents.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials. Do not mix with other chemicals.
<b>Incompatible materials</b>	Water. Bases. Oxidizing agents. Reducing agents. Metals. Amines. Alkalies. Organic compounds.
<b>Hazardous decomposition products</b>	Hydrogen Chloride gas.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Toxic if inhaled.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Causes digestive tract burns. Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation. Coughing.

### Information on toxicological effects

**Acute toxicity** Toxic if inhaled. Harmful if swallowed.

Components	Species	Test Results
1-phenylethanone (CAS 98-86-2)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	0.9 g/kg
2-butoxyethanol (CAS 111-76-2)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	400 mg/kg
<b>Inhalation</b>		
LC50	Rat	450 ppm, 4 Hours
<b>Oral</b>		
LD50	Rat	470 mg/kg
Hydrochloric Acid (CAS 7647-01-0)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Mouse	1449 mg/kg
<b>Inhalation</b>		
<i>Gas</i>		
LC50	Rat	1405 ppm, 4 Hours
<b>Oral</b>		
<i>Liquid</i>		
LD50	Rat	237 - 277 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation** Causes serious eye damage.

**Respiratory or skin sensitization**

**Respiratory sensitization** Due to partial or complete lack of data the classification is not possible.

**Skin sensitization** Due to partial or complete lack of data the classification is not possible.

**Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.

**Carcinogenicity** Due to partial or complete lack of data the classification is not possible.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

2-butoxyethanol (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

Hydrochloric Acid (CAS 7647-01-0) 3 Not classifiable as to carcinogenicity to humans.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Not listed.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Due to partial or complete lack of data the classification is not possible.

**Chronic effects** Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Product	Species	Test Results
Muriatic Acid 31% Inhibited 213 US A		
<b>Aquatic</b>		
Fish LC50	Fish	0.2698 mg/l, 96 hours
<i>Acute</i>		
Fish LC50	Fish	918.4269 mg/l, 96 hours estimated
<b>Components</b>	<b>Species</b>	<b>Test Results</b>
1-phenylethanone (CAS 98-86-2)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish LC50	Fathead minnow (Pimephales promelas)	155 mg/l, 96 hours
2-butoxyethanol (CAS 111-76-2)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish LC50	Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours
Hydrochloric Acid (CAS 7647-01-0)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish LC50	Western mosquitofish (Gambusia affinis)	282 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential**

**Partition coefficient n-octanol / water (log Kow)**

1-phenylethanone 1.58  
2-butoxyethanol 0.83

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

<b>Disposal instructions</b>	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### DOT

<b>UN number</b>	UN1789
<b>UN proper shipping name</b>	Hydrochloric acid
<b>Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	8
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	A3, A6, B3, B15, IB2, N41, T8, TP2, TP12
<b>Packaging exceptions</b>	154
<b>Packaging non bulk</b>	202
<b>Packaging bulk</b>	242

Reportable Quantity for Hydrochloric Acid = 5000 lbs.

#### IATA

<b>UN number</b>	UN1789
<b>UN proper shipping name</b>	Hydrochloric acid
<b>Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	8L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed with restrictions.
<b>Cargo aircraft only</b>	Allowed with restrictions.

#### IMDG

<b>UN number</b>	UN1789
<b>UN proper shipping name</b>	HYDROCHLORIC ACID
<b>Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-B
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not established.



IATA; IMDG



## 15. Regulatory information

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### Toxic Substances Control Act (TSCA)

All components of the mixture on the TSCA 8(b) inventory are designated "active".

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

1-phenylethanone (CAS 98-86-2)	Listed.
2-butoxyethanol (CAS 111-76-2)	Listed.
Hydrochloric Acid (CAS 7647-01-0)	Listed.

#### SARA 304 Emergency release notification

Hydrogen chloride (anhydrous); Hydrogen chloride (gas only) (CAS 7647-01-0) 5000 LBS

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)	7647-01-0	30 - < 40

### US state regulations

#### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1-phenylethanone (CAS 98-86-2)  
2-butoxyethanol (CAS 111-76-2)  
Hydrochloric Acid (CAS 7647-01-0)

#### California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
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)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 09-12-2023

**Version #** 01

**HMIS® ratings**  
Health: 3  
Flammability: 0  
Physical hazard: 0

**NFPA ratings**  
Health: 3  
Flammability: 0  
Instability: 0

**Disclaimer** Harcros Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet has been obtained from sources believed to be reliable. Harcros Chemicals Inc., provides no warranties, either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. Harcros Chemicals Inc., knows of no medical condition, other than those noted on this Safety Data Sheet, which are generally recognized as being aggravated by exposure to this product.