



Suite 450
One North Shore Center
12 Federal Street
Pittsburgh, PA 15212


Safety Data Sheet

KRO-375

1. IDENTIFICATION

Product name	KRO-375L
Description	Boiler water treatment
Product class	Water treatment
Supplier address	Suite 450 One North Shore Center 12 Federal Street Pittsburgh, PA 16212
Telephone numbers	
<u>Company Phone Number</u>	(412) 321-9800
<u>Emergency Telephone</u>	CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification	Acute toxicity, inhalation Category 4 Skin corrosion/irritation Category 1 Serious eye damage/eye irritation Category 1 Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Signal word	Danger
Hazard statements	Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if inhaled. May cause respiratory irritation.
Pictograms of related hazards	

Precautionary statements

Prevention

Do not breathe mist or vapor. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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. Wash contaminated clothing before reuse.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS
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INGREDIENT(S)	CAS Number	Weight %
Hydrochloric acid	7647-01-0	20 - 40
.alpha.-Hydro-.omega.-hydroxypoly (oxy-1,2-ethanediyl)	25322-68-3	0.1 - 1
Other components below reportable levels		60 - 80

4. FIRST-AID MEASURES

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.

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.

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.

Inhalation

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

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.

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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

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

Protective equipment and precautions for firefighters

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

Firefighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

Specific hazards

Use standard firefighting procedures and consider the hazards of other involved materials. No unusual fire or explosion hazards noted. The product itself does not burn.

Hazardous combustion products

During fire, gases hazardous to health may be formed

General information

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. Do not breathe mist or vapor. 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 containment and cleaning up:

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE

Advice on safe handling

Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.

Storage conditions

Store locked up. Store in original 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

Chemical Name	OSHA PEL	ACGIH TLV
Hydrochloric acid (CAS 7647-01-0)	Ceiling 7 mg/m ³ 5 ppm	2 mg/m ³ , ceiling
ACETALDEHYDE (CAS 75-07-0)	360 mg/m ³ 200 ppm	25 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
.alpha.-Hydro-.omega.-hydr oxypoly(oxy-1,2-ethanediyl) (CAS 25322-68-3)	TWA	10 mg/m ³	Particulate

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

Eye/face protection

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Wear appropriate chemical resistant clothing.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

General hygiene considerations

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.

Biological limit values No biological exposure limits noted for the ingredient(s).

9. PHYSICAL AND CHEMICAL PROPERTIES
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pH	<1.0
Appearance	Clear pale yellow liquid
Odor	Strong pungent
Odor Threshold	No information available
Melting/freezing point	32 °F (< 0 °C) estimated
Initial boiling point/boiling range	212 °F (> 100 °C) estimated
Flash point	None
Evaporation rate	No information available
Flammability (solid, gas)	Combustible II estimated
Upper/lower flammability or explosive limits	No information available
Vapor pressure	< 1.0 mm Hg estimated
Vapor density	No information available
VOC content	No information available
Specific gravity	1.11

Solubility	Complete
Partition coefficient n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available

10. STABILITY AND REACTIVITY

Reactivity	Reacts violently with strong alkaline substances. This product may react with reducing agents.
Chemical stability	Stable under normal conditions of storage and handling.
Hazardous polymerization	Polymerization will not occur.
Conditions to avoid	Do not mix with other chemicals. Contact with incompatible materials.
Incompatibilities	Bases. Reducing agents. Amines.
Hazardous decomposition products	No hazardous decomposition products are known

11. TOXICOLOGICAL INFORMATION

TOXICITY: No Data Available For Product

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.

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.

Information on toxicological effects

Acute toxicity	Harmful if inhaled. May cause respiratory irritation.
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	Not a respiratory sensitizer.

<p>Skin sensitization Germ cell mutagenicity</p>	<p>This product is not expected to cause skin sensitization. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</p>
<p>Carcinogenicity</p>	<p>This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.</p>
<p>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) IARC Monographs. Overall Evaluation of Carcinogenicity Hydrochloric acid (CAS 7647-01-0)</p>	<p>Not listed. 3 Not classifiable as to carcinogenicity to humans.</p>
<p>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</p>	<p>Not listed.</p>
<p>US. National Toxicology Program (NTP) Report on Carcinogens</p>	<p>ACETALDEHYDE (CAS 75-07-0) - Reasonably Anticipated to be a Human Carcinogen.</p>
<p>Reproductive toxicity</p>	<p>This product is not expected to cause reproductive or developmental effects.</p>
<p>Specific target organ toxicity - single exposure</p>	<p>May cause respiratory irritation.</p>
<p>Specific target organ toxicity - repeated exposure</p>	<p>Not classified.</p>
<p>Aspiration hazard</p>	<p>Not an aspiration hazard</p>
<p>Chronic effects</p>	<p>Prolonged inhalation may be harmful.</p>

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Product

Parameter	Result
96 hr LC ₅₀ , Rainbow trout	200 mg/L
48 hr EC ₅₀ , Daphnia magna	200 mg/L

<p>Ecotoxicity</p>	<p>Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.</p>
<p>Persistence and degradability</p>	<p>No data is available on the degradability of this product</p>
<p>Bioaccumulative potential</p>	<p>No data available</p>

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

Disposal	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company
US RCRA Hazardous Waste U List: Reference	
ACETALDEHYDE (CAS 75-07-0)	U001
Waste from residues / unused products	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).
Contaminated packaging	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

US Department of Transportation (DOT) –

UN Number	UN3264
Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (HYDROCHLORIC ACID)
Transport hazard class(es)	
Primary hazard class/division	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling
Special provisions	B2 IB2, T11, TP2, TP27

Packaging exceptions 154
 Packaging non bulk 202
 Packaging bulk 242
 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.
 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not regulated as dangerous goods
 DOT Label



15. REGULATORY INFORMATION

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

CERCLA Hazardous Substance List (40 CFR 302.4)

ACETALDEHYDE (CAS 75-07-0) Listed.
 Hydrochloric acid (CAS 7647-01-0) Listed.

SARA 304 Emergency release notification

Hydrochloric acid (CAS 7647-01-0) 5000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories

Immediate Hazard - Yes
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable Quantity	Threshold planning quantity	Threshold planning quantity, Lower value	Threshold planning quantity, upper value
Hydrochloric acid	7647-01-0	5000	500 lbs		

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Hydrochloric acid	7647-01-0	20 - 40

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

ACETALDEHYDE (CAS 75-07-0)
 Hydrochloric acid (CAS 7647-01-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Hydrochloric acid (CAS 7647-01-0) 6545

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Hydrochloric acid (CAS 7647-01-0) 20 %WV

DEA Exempt Chemical Mixtures Code Number

Hydrochloric acid (CAS 7647-01-0) 6545

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

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

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

US. Massachusetts RTK - Substance List

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

US. New Jersey Worker and Community Right-to-Know Act

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

US. Pennsylvania Worker and Community Right-to-Know Law

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

US. Rhode Island RTK

ACETALDEHYDE (CAS 75-07-0)
Hydrochloric acid (CAS 7647-01-0)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

ACETALDEHYDE (CAS 75-07-0) Listed: April 1, 1988

International Inventories

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	No

	Chemical	
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	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). 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

SDS Issue Date February 17, 2016

Revision Date Version 1

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.