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

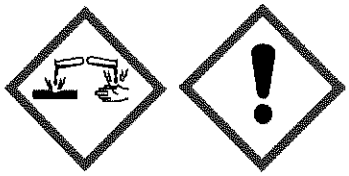
Safety Data Sheet

KRO-285

1. IDENTIFICATION

Product name	KRO-285
Description	Boiler water treatment
Product class	Water treatment
Supplier address	Suite 450 One North Shore Center 12 Federal Street Pittsburgh, PA 16212
Telephone numbers	
Company Phone Number	(412) 321-9800
Emergency Telephone	CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification	Acute toxicity, oral Category 4 Skin corrosion/irritation Category 1 Serious eye damage/eye irritation Category 1
Signal word	Danger
Hazard statements	Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. Harmful if inhaled.
Pictograms of related hazards	

Precautionary statements

Prevention

Do not breathe mist or vapor. 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

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 locked up.

Disposal

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

Supplemental information

3% of the mixture consists of component(s) of unknown acute oral toxicity. % of the mixture consists of component(s) of unknown acute inhalation toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS Number	Weight %
Potassium hydroxide	1310-58-3	5 - 10
Tetrasodium ethylenediaminetetraacetate	64-02-8	1 - 5
Sodium hydroxide	1310-73-2	0.1 - 1
Other components below reportable levels		80 - 100

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

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

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.

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 under observation. Symptoms may be delayed.
General information	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. Do not taste or swallow. 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. Observe good industrial hygiene practices. Use care in handling/storage.

Storage conditions

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV
Sodium hydroxide (CAS 1310-73-2)	2 mg/m^3	2 mg/m^3, ceiling
Potassium hydroxide (CAS 1310-58-3)		2 mg/m^3, ceiling

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

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

Skin protection

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

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

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

pH	>12.5
Appearance	Clear colorless liquid
Odor	Characteristic
Odor Threshold	No information available
Melting/freezing point	<40 °F (< 4.4 °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	1.13
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 acids. This product may react with oxidizing 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 Acids. Oxidizing agents. Maleic anhydride.

Hazardous decomposition products	None 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. 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.
Information on toxicological effects	
Acute toxicity	Harmful if inhaled. Harmful if swallowed.
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.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard
Chronic effects	Prolonged inhalation may be harmful.

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Product

Parameter	Result
96 hr LC_{50}, Rainbow trout	752 mg/L
48 hr EC_{50}, Daphnia magna	10,174 mg/L

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

No data is available on the degradability of this product

Bioaccumulative potential

No data available

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

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	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Potassium hydroxide)
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

U.S. 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)

Sodium hydroxide (CAS 1310-73-2) Listed

SARA 304 Emergency release notification Not regulated

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	Not listed
SARA 311/312 Hazardous chemical	No
SARA 313 (TRI reporting)	Not regulated

Chemical name	**CAS number**	**% by wt.**

Other federal regulations

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

Not regulated

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

Not regulated

Safe Drinking Water Act (SDWA) Not regulated.

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))

Sodium hydroxide (CAS 1310-73-2)

US. Massachusetts RTK - Substance List

Potassium hydroxide (CAS 1310-58-3)

Sodium hydroxide (CAS 1310-73-2)

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

Potassium hydroxide (CAS 1310-58-3)

Sodium hydroxide (CAS 1310-73-2)

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

Potassium hydroxide (CAS 1310-58-3)

Sodium hydroxide (CAS 1310-73-2)

US. Rhode Island RTK

Potassium hydroxide (CAS 1310-58-3)

Sodium hydroxide (CAS 1310-73-2)

US. 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.

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)	No
Europe	European Inventory of Existing Commercial Chemical	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	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

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.