



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

## Safety Data Sheet

# KRO-668

### 1. IDENTIFICATION

**Product name** KRO-668  
**Description** Proprietary aqueous solution  
**Product class** Boiler  
**Supplier address** Suite 450  
One North Shore Center  
12 Federal Street  
Pittsburgh, PA 15212  
**Telephone numbers**  
Company Phone Number (412) 321-9800  
Emergency Telephone CHEMTREC 800-424-9300

### 2. HAZARDS IDENTIFICATION

**Hazard classification** Serious Eye Damage, Category 1  
**Signal word** Danger  
**Hazard statements** Causes serious eye damage.  
**Pictograms of related hazards**



#### Precautionary statements

##### Prevention

Wear protective gloves, protective clothing, eye protection, and face protection.

##### Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately contact a POISON CENTER or health care provider.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	2809-21-4	1–10
Sodium bisulfite	7631-90-5	<1
Non-hazardous substances	Proprietary	>90

**4. FIRST-AID MEASURES**

<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. Remove contact lenses if present and easy to do, then resume rinsing. Get medical attention immediately.
<b>Skin contact</b>	Immediately remove all contaminated clothing. Rinse with copious amounts of water; use an emergency shower if available. Wash contaminated clothing before reuse.
<b>Ingestion</b>	If swallowed, DO NOT induce vomiting. Rinse mouth and get emergency medical attention. Do not give anything by mouth unless instructed to do so by a poison center or health care provider.
<b>Inhalation</b>	If inhaled, move victim to fresh air. Seek emergency medical attention if breathing is difficult; perform artificial respiration if breathing stops.
<b>Note to health care provider</b>	No specific information; treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable extinguishing media</b>	Use extinguishing media appropriate for the surrounding fire.
<b>Unsuitable extinguishing media</b>	No information available
<b>Protective equipment and precautions for firefighters</b>	Stay upwind of the fire. Full protective equipment including self-contained breathing apparatus should be used. Use water to cool closed containers. Contain water runoff if possible.
<b>Specific hazards</b>	Combustion may produce toxic gases.
<b>Hazardous combustion products</b>	Carbon oxides, nitrogen oxides, sulfur oxides

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions</b>	Evacuate the area of all non-essential personnel. Do not touch spilled material without proper protective equipment. Ventilate the area and mitigate further release if it is safe to do so. Avoid contact with eyes.
<b>Methods for clean-up</b>	
<u>Small spills</u>	Contain spill and soak up with an inert absorbent material and place residues in a properly labeled container for disposal. Avoid discharge into sewer or surface water.
<u>Large spills</u>	Contain spill using trenches, diking, or absorption with an inert material (i.e. sand or earth). Reclaim spilled material into recovery or salvage drums or tank truck for proper disposal.

**7. HANDLING AND STORAGE**

<b>Advice on safe handling</b>	Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash hands thoroughly after handling.
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<b>Storage conditions</b>	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
<b>Suitable materials of construction</b>	No information available
<b>Unsuitable materials of construction</b>	No information available

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Eye/face protection</b>	Chemical splash goggles
<b>Skin protection</b>	Chemical-resistant gloves and body-covering clothing
<b>Respiratory protection</b>	Observe published airborne exposure limits. NIOSH approved respirator should be used in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).
<b>Engineering controls</b>	Adequate ventilation, eye-wash station, and emergency shower
<b>General hygiene considerations</b>	Do not eat, drink, or smoke while handling this product.

Chemical Name	OSHA PEL	ACGIH TLV
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	None established	None established
Sodium bisulfite	None established	None established
Non-hazardous substances	None established	None established

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>pH</b>	6.0-8.0
<b>Appearance</b>	Clear yellow liquid
<b>Odor</b>	Mild
<b>Odor Threshold</b>	No information available
<b>Melting/freezing point</b>	No information available
<b>Initial boiling point/boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>VOC content</b>	No information available
<b>Specific gravity</b>	1.200-1.300

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

## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under normal conditions of storage and handling.
<b>Hazardous polymerization</b>	Polymerization will not occur.
<b>Conditions to avoid</b>	Extreme temperatures, incompatibilities.
<b>Incompatibilities</b>	Strong acids, strong bases, oxidizers
<b>Hazardous decomposition products</b>	No information available

## 11. TOXICOLOGICAL INFORMATION

**Likely routes of exposure** Skin, eyes, ingestion

### Acute toxicity

#### *1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	1,536-2,003 mg/kg
LD <sub>50</sub> , Oral (mouse)	1,100 mg/kg
LD <sub>50</sub> , Dermal (rabbit)	>6,000 mg/kg
Draize, Eye (rabbit)	Severe corrosion

#### *Sodium bisulfite*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	2,000 mg/kg

### Acute symptoms and effects

<b>Eye</b>	Eye irritation with or without pain, burning, itching, redness, discharge, and serious eye damage.
<b>Skin</b>	Skin irritation with or without pain, burning, itching, redness, and swelling. Symptoms may be exacerbated by open wounds, excoriations, rashes, or other skin breaches.
<b>Ingestion</b>	Gastrointestinal distress with or without nausea, vomiting, and diarrhea.
<b>Inhalation</b>	Upper respiratory irritation with or without cough, watering of the eyes, and postnasal drip.
<b>Reproductive effects</b>	No information available
<b>Teratogenicity</b>	No information available
<b>Mutagenicity</b>	No information available
<b>Embryotoxicity</b>	No information available
<b>Sensitization to product</b>	No information available
<b>Synergistic products</b>	No information available

<b>Carcinogenicity</b>	No components have been identified as carcinogenic by OSHA, NTP, or IARC.
<b>Chronic</b>	No information available

## 12. ECOLOGICAL INFORMATION

### Aquatic toxicity

#### *1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)*

Parameter	Result
96 hr LC <sub>50</sub> , Bluegill sunfish	868 mg/L
96 hr LC <sub>50</sub> , Rainbow trout	195 mg/L
96 hr LC <sub>50</sub> , Cyprinodon varigatus	2,180 mg/L
48 hr EC <sub>50</sub> , Daphnia magna	527 mg/L
14 day chronic NOEC, Rainbow trout	180 mg/L
28 day chronic NOEC, Daphnia magna	6.75 mg/L

#### *Sodium bisulfite*

Parameter	Result
96 hr LC <sub>50</sub> , Bluegill sunfish	>1,000 ppm
96 hr LC <sub>50</sub> , Fathead minnow	59 mg/L
96 hr LC <sub>50</sub> , Rainbow trout	>1,000 ppm
48 hr EC <sub>50</sub> , Daphnia magna	140 mg/L

<b>Persistence</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Mobility</b>	No information available

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal</b>	Dispose of in accordance with federal, state, and local regulations.
<b>RCRA status</b>	Discarded product, as sold, would not be considered a RCRA Hazardous Waste.

## 14. TRANSPORT INFORMATION

### US Department of Transportation (DOT)

<b>UN Number</b>	
<b>Proper shipping name</b>	Not regulated
<b>Primary hazard class/division</b>	
<b>Secondary hazard</b>	
<b>Packing group</b>	
<b>Label</b>	

## 15. REGULATORY INFORMATION

<b>OSHA Hazard Communication Status</b>	Serious Eye Damage, Category 1
<b>EPA Registration Number</b>	Not applicable

**TSCA**

The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

**CERCLA**

EPA Hazardous Substances (40 CFR 302)

Chemical Name	Reportable Quantity (RQ)
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	None
Sodium bisulfite	5,000 lb
Non-hazardous substances	None

SARA Title III (Sections 302, 311, 312, and 313)

Section 302 Extremely Hazardous Substances (40 CFR 355)

Chemical Name	CAS#	RQ	TPQ
None			

Section 311 and 312 Health and Physical Hazards

Immediate	Delayed	Fire	Pressure	Reactivity
No	No	No	No	No

Section 313 Toxic Chemicals (40 CFR 372)

Chemical Name	CAS Number	Percent by Weight
None		

**16. OTHER INFORMATION**

**HMIS Ratings** Health—1; Flammability—0; Reactivity—0  
**NFPA Ratings** Health—1; Flammability—0; Reactivity—0  
**HMIS/NFPA Rating Scale** Minimal—0; Slight—1; Moderate—2; Serious—3; Severe—4  
**SDS Issue Date** 4/30/2015  
**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.*