



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

## Safety Data Sheet

# KR-41KSL

### 1. IDENTIFICATION

**Product name** KR-41KSL  
**Description** Proprietary aqueous solution  
**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 800-424-9200

### 2. HAZARDS IDENTIFICATION

**Hazard classification** Acute Toxicity: Oral, Category 3  
Skin Corrosion, Category 1  
Serious Eye Damage, Category 1  
Carcinogenicity, Category 1B (Ingestion)  
Reproductive Toxicity, Category 1B  
Aquatic Environment Toxicity: Acute, Category 2  
**Signal word** Danger  
**Hazard statements** Toxic if swallowed.  
Causes severe skin burns and eye damage.  
Causes serious eye damage.  
May cause cancer if ingested.  
May damage fertility or the unborn child.  
Toxic to aquatic life.

**Pictograms of related hazards**



**Precautionary statements**

Prevention

Wash skin thoroughly after handling.  
Do not eat, drink, or smoke when using this product.  
Do not breathe fumes, mist, vapors, or spray.  
Wear protective gloves, protective clothing, eye protection, and face protection.  
Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.  
 Use personal protective equipment as required.  
 Avoid release to the environment.

#### Response

DO NOT induce vomiting.  
 Wash contaminated clothing before reuse.  
 Specific measures:  
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Immediately contact a POISON CENTER or health care provider.  
 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or emergency shower.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position 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 contact a POISON CENTER or health care provider.  
 IF exposed or concerned: Get medical attention.

#### Storage

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

#### Disposal

Dispose of in accordance with local, state, and federal regulations.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %
Sodium nitrite	7632-00-0	1-10
Sodium nitrate	7631-99-4	1-10
Sodium tetraborate pentahydrate	12179-04-3	<5
Potassium hydroxide	1310-58-3	<2
Non-hazardous substances	Proprietary	>70

### 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. Do not wait for symptoms to develop. Get medical attention immediately.
<b>Skin contact</b>	Remove contaminated clothing and wash the affected area with soap and water. 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>	Ingestion of nitrates or nitrites may lead to life-threatening methemoglobinemia.

## 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>	Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential. Use water to keep fire-exposed containers cool.
<b>Specific hazards</b>	Combustion may produce toxic gases.
<b>Hazardous combustion products</b>	Carbon oxides, nitrogen oxides, sulfur oxides, phosphorous 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. Contaminated clothing should not be removed from the workplace.
<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
Sodium nitrite	None established	None established
Sodium nitrate	None established	None established
Sodium tetraborate pentahydrate	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>
Potassium hydroxide	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>
Non-hazardous substances	None established	None established

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>pH</b>	>12.5
<b>Appearance</b>	Clear yellow liquid
<b>Odor</b>	No odor
<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>	1.203-1.283

<b>Solubility</b>	Complete
<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, oxidizers
<b>Hazardous decomposition products</b>	Reaction with acids may evolve carcinogenic nitrosamines.

## 11. TOXICOLOGICAL INFORMATION

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

### Acute toxicity

#### *Sodium nitrite*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	180 mg/kg
LC <sub>50</sub> , Inhalation (rat)	5.5 mg/m <sup>3</sup> /4hr
LD <sub>Lo</sub> , Oral (human)	14 mg/kg

#### *Sodium nitrate*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	1,267 mg/kg
LD <sub>Lo</sub> , Oral (human)	14 mg/kg

#### *Sodium tetraborate pentahydrate*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	3,200-3,400 mg/kg
LD <sub>50</sub> , Dermal (rabbit)	>2,000 mg/kg

#### *Potassium hydroxide*

Parameter	Result
LD <sub>50</sub> , Oral (rat)	365 mg/kg
LD <sub>50</sub> , Oral (rat)	273 mg/kg
LD <sub>50</sub> , Dermal (rabbit)	1,260 mg/kg
Draize, Skin (rabbit)	Severely irritating
Draize, Eye (rabbit)	Severely irritating

**Acute symptoms and effects**

<b>Eye</b>	Severe eye irritation with serious damage including, but not limited to, tissue destruction, corneal opacification, and temporary or permanent blindness.
<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. Onset of symptoms may be delayed relative to exposure.
<b>Ingestion</b>	Gastrointestinal distress with or without nausea, vomiting, and diarrhea. May cause irritation or corrosion of the oral and esophageal mucosa.
<b>Inhalation</b>	Upper respiratory irritation with or without cough, watering of the eyes, and postnasal drip. Aspiration of liquid or vomit may cause severe respiratory distress, airway corrosion, and acute lung damage.
<b>Reproductive effects</b>	Exposure to sodium tetraborate has been implicated in damaging fertility or causing harm to unborn offspring in animal studies.
<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>	Nitrites and nitrates have been identified as probable human carcinogens by the IARC (group 2A).
<b>Chronic</b>	No information available

**12. ECOLOGICAL INFORMATION****Aquatic toxicity*****Sodium nitrite***

Parameter	Result
96 hr LC <sub>50</sub> , Mosquito fish	7.5 mg/L
96 hr LC <sub>50</sub> , Rainbow trout	<1 mg/L (flow through)
24 hr NOEC, Minnow	17.1 mg/L

***Sodium nitrate***

Parameter	Result
96 hr LC <sub>50</sub> , Bluegill sunfish	2,000 mg/L
96 hr LC <sub>50</sub> , Fathead minnow	522 mg/L
96 hr LC <sub>50</sub> , Rainbow trout	1,658 mg/L
48 hr EC <sub>50</sub> , Daphnia magna	323 mg/L

**Persistence** No information available

**Bioaccumulative potential** No information available

**Mobility** No information available

**13. DISPOSAL CONSIDERATIONS**

**Disposal** Dispose of in accordance with federal, state, and local regulations. Do not discharge into sewer or surface water.

**RCRA status** As sold, discarded product would be considered a RCRA hazardous waste based on the corrosive characteristics. The EPA hazardous waste number is D002.

**14. TRANSPORT INFORMATION**

**US Department of Transportation (DOT)**

**UN Number** UN3266  
**Proper shipping name** Corrosive liquid, basic, inorganic, n.o.s. (contains potassium hydroxide)  
**Primary hazard class/division** 8  
**Secondary hazard** None  
**Packing group** III  
**Label** Corrosive

**15. REGULATORY INFORMATION**

**OSHA Hazard Communication Status** Acute Toxicity: Oral, Category 3  
 Skin Corrosion, Category 1  
 Serious Eye Damage, Category 1  
 Carcinogenicity, Category 1B (Ingestion)  
 Reproductive Toxicity, Category 1B  
 Aquatic Environment Toxicity: Acute, Category 2

**EPA Registration Number** 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)
Sodium nitrite	100 lb
Sodium nitrate	None
Sodium tetraborate pentahydrate	None
Potassium hydroxide	1,000 lb
Non-hazardous substances	None
Product	1,000 lb (Notify the EPA of spills exceeding this amount.)

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
Yes	No	No	No	No

## Section 313 Toxic Chemicals (40 CFR 372)

Chemical Name	CAS Number	Percent by Weight
Sodium nitrite	7632-00-0	1-10
Sodium nitrate	7631-99-4	1-10

**16. OTHER INFORMATION**

<b>HMIS Ratings</b>	Health—3; Flammability—0; Reactivity—0
<b>NFPA Ratings</b>	Health—3; Flammability—0; Reactivity—0; Special Hazard—None
<b>HMIS and NFPA Rating Scale</b>	Minimal—0; Slight—1; Moderate—2; Serious—3; Severe—4
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<b>Revision Date</b>	Version 1

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