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KR-60DL

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
 CALL: 1-800-424-9300 CHEMTREC

FOR ADDITIONAL INFORMATION
 CALL: 412-321-9800

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **KR-60DL**
 CHEMICAL DESCRIPTION: Aqueous bisulfite solution, catalyzed
 PRODUCT CLASS: Boiler
 VERSION: 7-12-2012

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Sodium bisulfite	7631-90-5	10-20	TWA: 5 mg/m ³	TWA: 5 mg/m ³
Potassium hydroxide	1310-58-3	<2	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear, pale yellow to pale pink liquid
WARNING!
 May cause eye, skin, and respiratory tract irritation.
 Ingestion is hazardous to health.
 May cause severe allergic reaction in some asthmatics and sulfite sensitive individuals.
 Product is corrosive to mild steel and aluminum.
 Product reacts with acids to form toxic and irritating sulfur dioxide gas.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, inhalation, and ingestion

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Some individuals are said to be dangerously sensitive to minute amounts of sulfites in foods. Symptoms may include bronchoconstriction, shock, gastrointestinal disturbances, swelling, flushing and tingling sensations.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation.

SKIN CONTACT: Contact may cause skin irritation.

INGESTION: If ingested, this product may cause gastric irritation due to the liberation of sulfurous acid. Very large doses may cause violent colic and diarrhea, bone marrow effects, circulatory disturbances and central nervous system depression. Ingestion may cause severe allergic reactions in some asthmatics and sulfite sensitive people. The allergic reaction may be characterized by nausea, diarrhea, itching, swelling, hives, acute asthma attack (possibly life-threatening), loss of consciousness or anaphylactic shock.

INHALATION: Vapors of this product may cause respiratory tract irritation. Sulfite-sensitive individuals, upon inhalation of this product, may experience an allergic reaction similar to that described under **INGESTION**.

This product may give off toxic and irritating sulfur dioxide gas upon heating or during reaction.

SUBCHRONIC, CHRONIC: Sodium bisulfite is a sensitizer; it can cause dermatitis and can precipitate asthma attacks, angioedema, anaphylaxis, and other allergies in sensitized persons.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally to ensure complete rinsing. Get medical attention.

SKIN CONTACT: In a timely manner, remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. Get medical attention if irritation persists. Wash clothing before reuse.

INGESTION: If victim is conscious and alert, immediately give a large quantity of water or milk to drink and induce vomiting by touching finger to back of throat. Get immediate medical attention. Never give anything by mouth or induce vomiting if the victim is unconscious.

INHALATION: If inhaled, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention if any signs of suffocation, irritation, or other symptoms develop.

NOTE: Treat symptomatically. Note the potential for anaphylactic shock with allergic individuals.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: None

This product is not by definition a "flammable liquid" or a "combustible liquid".

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use water, foam, dry chemical, or carbon dioxide as appropriate to fight the surrounding fires.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Burning produces extremely toxic and irritating sulfur dioxide gas.

DECOMPOSITION PRODUCTS: Sulfur dioxide, disodium oxide, dipotassium oxide, sodium potassium oxide, sodium sulfide, potassium sulfide, and potassium sodium sulfide.

NFPA RATINGS: Health = 2 Flammability = 0 Reactivity = 1

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Only trained personnel equipped with a NIOSH/MSHA approved, full face piece combination dust/mist & acid gas respirator should be permitted in the area of the spill. Dike the area to contain the spill in order to prevent contamination of sewage system or waterway. Reclaim as much material as possible. Dilute the remaining material with a large quantity of water, and then neutralize with soda ash. Ventilate area well, since sulfur dioxide and carbon dioxide may be released during neutralization. Dispose of according to federal, state, and local regulations.

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Avoid contact with eyes, skin and clothing.

Avoid breathing vapor or mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.

Ensure that containers are properly labeled.

Since empty containers retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.

Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles.

Prolonged storage of drums containing bisulfites may result in the evolution of sulfur dioxide. Open containers in areas with adequate ventilation only.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and clean body covering clothing

RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 191.0.134).

ENGINEERING CONTROLS: A system of local and/or general exhaust is recommended to keep employee exposures below irritating levels or airborne exposure limits, whichever is lower. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the latest edition of the ACGIH document *Industrial Ventilation, A Manual of Recommended Practices* for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 5.0-6.0

SPECIFIC GRAVITY: 1.15 to 1.24 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: >212 °F (>100 °C)

FREEZING POINT: ~16 °F (~ -8.9 °C)

VAPOR PRESSURE: Not available

VAPOR DENSITY: (air=1): Not available

APPEARANCE AND ODOR: Clear, pale yellow to pale pink liquid with an odor of sulfur dioxide.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Avoid overheating. Temperature at or near 102 °C (216 °F) causes the evolution of toxic and irritating sulfur dioxide gas.

INCOMPATIBILITY: Oxidizers, acids, steel, aluminum. Oxidizers may react with sodium bisulfite in strongly exothermic manner. Acids react with sodium bisulfite to produce toxic and irritating sulfur dioxide gas.

DECOMPOSITION PRODUCTS: Sulfur dioxide, disodium oxide, dipotassium oxide, sodium potassium oxide, sodium sulfide, potassium sulfide, and potassium sodium sulfide.

SECTION 11: TOXICOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Sodium bisulfite	2,000 mg/Kg	Not available	Not available
Potassium hydroxide	273 mg/Kg	1,260 mg/Kg	Not available

SECTION 12: ECOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Aquatic Toxicity Data
Sodium bisulfite	48 hr LC50 (Daphnia magna): 116 mg/L 96 hr LC50 (Mosquito fish): 240 mg/L
Potassium hydroxide	48 hr EC50 (Water flea): 60 mg/L (45.25% solution) 96 hr LC50 (Fathead minnow): 179 mg/L (45.25% solution) 96 hr LC50 (Mosquito fish): 39-56 mg/L 96 hr LC50 (Green algae): 61 mg/L (45.25% solution)

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product as sold would be considered a RCRA Hazardous Waste based on the characteristic of corrosivity because the product corrodes steel at a rate >0.250 inch/year at 130 °F. The EPA Hazardous Waste Number is D002.

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

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION:

UN Number: UN 2693

Proper Shipping Name: Bisulfites, aqueous solutions, n.o.s. (contains sodium bisulfite)

Primary Hazard Class/Division: 8

Packing Group: III

Label: Corrosive

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

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	CERCLA Reportable Quantity (RQ)
Sodium bisulfite	5,000 lb
Potassium hydroxide	1,000 lb
Product	40,568 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):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
yes	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 2 Flammability = 0 Reactivity = 1

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

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