



WST, LLC
5520 Parkwood Circle
Bessemer, AL 35022

MATERIAL SAFETY DATA SHEET

I. IDENTIFICATION

Product: **K-BROM 40**
General Description: Biocide
Revision Date: 11/07/2012
24 hour Transportation Emergency: 1-800-255-3924
(ChemTel)

NFPA Rating	
Health	1
Fire	0
Reactivity	0
Personal Protection	D

Rating Scale
4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

II. HAZARD IDENTIFICATION

Emergency overview *Colorless liquid, odorless*
Harmful if swallowed
Harmful if absorbed through the skin

Potential Health Effects:

- **Eye Contact** Mild irritant
- **Skin contact** Not irritant to intact skin. Slightly irritant on prolonged contact to abraded skin.
- **Inhalation** Irritant to upper respiratory tract.
- **Ingestion** Abdominal pain, nausea and vomiting. May cause falling asleep, muscular incoordination and respiratory depression.

Chronic effects/Carcinogenicity Repeated skin contact may cause dermatitis.

NFPA Ratings (Scale 0-4) Health = 1, Fire = 0, Reactivity = 0

III. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS	Weight %
Sodium Bromide	7647-15-6	38 - 42

IV. FIRST-AID MEASURES

- Eye contact:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lens, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Inhalation:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
- Ingestion:** Call poison control center, or doctor immediately for treatment advise. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

Note to physician: No specific antidote. Treat symptomatically and supportively.

V. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.

Fire fighting procedure: Cool containers with water spray. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode

Unusual fire and explosion hazards: Will decompose from ca. 800°C releasing poisonous and corrosive fumes of hydrogen bromide and sodium oxide.

VI. ACCIDENTAL RELEASE MEASURES

Personal precautions: See section "Exposure controls/personal protection"
Methods for cleaning up: Absorb on sand or vermiculite and place in closed container for disposal.

VII. HANDLING AND STORAGE

Handling: Avoid bodily contact. Keep containers tightly closed.
Storage: Keep in a well-ventilated place away from incompatible materials (see "materials to avoid").

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

Components	ACGIH-TLV Data	OSHA (PEL) Data
Sodium Bromide 7647-15-6	Not determined	Not determined

Ventilation requirements Provide adequate ventilation. Use local exhaust as necessary, especially under mist conditions.

Personal protective equipment:
- Respiratory protection Not required; except in case of aerosol formation.
- Hand protection Protective gloves
- Eye protection Safety glasses
- Skin and body protection Safety shoes

Hygiene measures Safety shower and eye bath should be provided. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colorless liquid, odorless
Melting point/range Not available
Flash point None
Flammable/Explosion limits Not flammable
Auto-ignition temperature Not applicable
Vapor pressure Not available
Evaporation rate (ether=1) As of water
Vapor density Not available
Solubility:
- Solubility in water NaBr 100%: 94.6 gr/100ml at 25°C
- Solubility in other solvents ethanol: 95%: 7 g/100g at 25°C methanol: 14.8 g/100g at 25°C
Explosive properties Not explosive
Oxidizing properties Not oxidizing

X. STABILITY AND REACTIVITY

Stability: Stable under normal conditions
Materials to avoid: Acids, heavy metal salts and bromine trifluoride

Conditions to avoid:	Heating above decomposition temperature
Hazardous decomposition products:	Hydrogen bromide and sodium oxide
Hazardous polymerization:	Will not occur

XI. TOXICOLOGICAL INFORMATION

Acute toxicity:	
- Rat oral LD50	>5000 mg/kg
- Rabbit dermal LD50	>2000 mg/kg
Skin corrosion/irritation	Not irritant
Dermal sensitization	Not a sensitizer
Chronic toxicity	Repeated oral intake of bromides (>9 mg/kg body weight/day) may affect the central nervous system. Warning symptoms include mental dullness, slurred speech, weakened memory, apathy, anorexia, constipation, drowsiness and loss of sensitivity to touch and pain.
Mutagenicity	Does not induce DNA repair in cultured human epithelioid cells. Not clastogenic in human lymphocytes metaphase analysis. Not mutagenic by the Ames Test
Carcinogenicity	Not classified by IARC Not included in NTP 12th Report on Carcinogens
Reproductive toxicity	Sodium bromide has been shown to cause embryo-fetal toxicity and malformations in rats at dose levels which also produce maternal toxicity. The No-Observed Effect Level (NOEL) is 100 mg/kg/day, and the Acceptable Daily Intake (ADI) for sodium bromide from food and drinking water in humans is 1 mg/kg/day. Comparable high doses of sodium chloride (table salt) similarly cause malformations, embryo-fetal toxicity, and maternal toxicity in mice.
Teratogenicity	In the oral gavage pre-natal developmental toxicity study in the Rabbit, there were no obvious effects of maternal treatment on the survival, growth or development of the offspring at any of the dosages investigated. The No Observed Effect Level (NOEL) for the developing conceptus was considered to be 250 mg/kg/day.

XII. ECOLOGICAL INFORMATION

Note: *The environmental toxicity data mentioned below are from studies conducted on the active ingredient.*

Aquatic toxicity :	
- 96 Hour-LC50, Fish	>1000 mg/l (rainbow trout) >1000 mg/l (bluegill sunfish)
- 48 Hour-EC50, Daphnia magna	>1000 mg/l
Avian toxicity:	
- Oral LD50, Bobwhite quail	>2250 mg/kg
- Dietary LC50, Mallard duck	>5633 ppm
- Dietary LC50, Bobwhite quail	>5633 ppm
Toxicity to micro-organisms	Activated sewage sludge respiration inhibition test: EC50 > 1000 mg/l (3 hours). NOEC was 1000 mg/l (3 hours)
Bioaccumulative potential	Bioaccumulation is not likely to occur since this material is highly soluble in water.
Germany, water endangering classes (WGK)	1

XIII. DISPOSAL CONSIDERATIONS

Waste disposal: Drain into sewer with ample water. Observe all federal, state and local environmental regulations when disposing of this material

XIV. TRANSPORT INFORMATION

DOT: Not regulated
IMO: Not regulated
ICAO/IATA: Not regulated

XV. REGULATORY INFORMATION

USA	Reported in the EPA TSCA Inventory.
Canada	Listed in DSL
-WHMIS hazard class	D2A very toxic materials
EU	Reported in EINECS
EC No.	231-599-9
Japan	ENCS no. 1-113 ISHL no. 1-113
Australia	Listed in AICS
New Zealand Inventory	Listed in NZIoC
China inventory	Listed in IECSC
Korea	Listed in ECL (KE-31368)
Philippines	Listed in PICCS

XVI. OTHER INFORMATION

The information accumulated herein is believed to be accurate based on the information provided, although no guarantee or warranty, either expressed or implied is made as to the accuracy or completeness of this information, whether originating with this company or not. Recipients are advised to confirm in advance of need that the information is correct, applicable and suitable to their circumstances. The conditions or methods of handling, storage, use and disposal of the product and container are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage or use of this information or product. If the product is used as a component in another product, this information may not be applicable.

Prepared By: J. Pritchett

Reviewed By: J. Sasser