

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)

Product name	Merquel® 45	
Product id	2270SM	
Revision date	31/08/2015	Revision: 3
Supersedes	07/03/2012	

1. Identification of the substance & the company

Chemical name	Sodium bromide water solution
Trade name	Merquel® 45
Chemical formula	NaBr
Chemical family	Inorganic bromide
Type of product and use	Product is used for oxidation of mercury
Supplier	ICL-IP America Inc. 622 Emerson Road - Suite 500 St Louis, Missouri 63141, USA Tel:(314)983-7884 Fax:(314)983-7607 e-mail:msdsinfo@icl-group.com
Emergency Telephone	Chemtrec: (800) 424-9300 Medical: PROSAR 1-888-875-1685 (24HRS)

2. Hazards identification

GHS classification	Not Classified
Labels and other form of warning	Not classified

3. Composition / information on ingredients

Components	CAS No.	Weight %
Sodium Bromide	7647-15-6	45

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4. First-aid measures

Eye contact	Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before reuse. Get medical attention if irritation occurs.
Inhalation	In case of mist inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.
Ingestion	If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately. ----- NOTE: Never give an unconscious person anything to drink -----

Most important symptoms and effects, acute or delayed

None known

Notes to the physician	No specific antidote. Treat symptomatically and supportively.
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5. Fire - fighting measures

Suitable extinguishing media	Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.
Unusual fire and explosion hazards	Will decompose from ca. 800°C releasing poisonous and corrosive fumes of hydrogen bromide and sodium oxide.
Fire fighting procedure	Cool containers with water spray. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode.

6. 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.
Environmental precautions	Prevent entry into sewers and watercourses

7. Handling and storage

SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)

Product name **Merquel® 45**
Product id 2270SM
Revision date 31/08/2015 **Revision: 3**
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Handling Avoid bodily contact. Keep containers tightly closed.
Storage Keep in a well-ventilated place away from incompatible materials (see "materials to avoid").

8. 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** Chemical safety goggles
- **Skin and body protection** Safety shoes

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

9. Physical and chemical properties

Appearance Colourless liquid, odourless
Melting point/range Not available
Flash point None
Evaporation rate (ether=1) As of water
Flammable/Explosion limits Not flammable
Vapor pressure Not available
Vapor density Not available
Density 1.508 g/mL
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
Auto-ignition temperature Not applicable
Explosive properties Not explosive
Oxidising properties Not oxidising

10. Stability and reactivity

Reactivity Reacts with oxidizers, acids and bromine trifluoride .

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Stability	Stable under normal conditions
Possibility of hazardous reactions	Not expected to occur
Conditions to avoid	Heating above decomposition temperature.
Materials to avoid	Acids, heavy metal salts and bromine trifluoride. Oxidising agents.
Hazardous decomposition products	Hydrogen bromide and sodium oxide. Bromine fumes.

11. Toxicological information

Likely Routes of Exposure	Skin Eye contact Inhalation Ingestion
Acute toxicity:	
- Rat oral LD50	>5000 mg/kg (NaBr 46%)
- Rabbit dermal LD50	>2000 mg/kg (NaBr 46%)
- Rat inhalation LC50	Not available
- Dermal irritation (rabbit)	Not irritant (NaBr 46%)
- Eye irritation (rabbit)	Moderate irritant (NaBr 46%)
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 13th 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.

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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.

Aspiration hazard Not expected to occur

12. 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)
>1000 mg/l (juvenile turbot) (NaBr 44%)
- **72 hour - EC50, Marine algae** >1000 mg/l (Skeletonema costatum) (NaBr 44%)
- **48 Hour-EC50, Marine Invertebrate** >2000 mg/l (Acartia tonsa)
- **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)

Persistence and degradability Not relevant for inorganic salts

Bioaccumulative potential Bioaccumulation is not likely to occur since this material is highly soluble in water.

Environmental fate NaBr is an inorganic salt, which fully dissociates in aquatic environment to bromide and sodium ions. It also undergoes degradation in soil to bromide ion (no further degradation or biodegradation will occur).

Mobility in soil Not relevant for inorganic salts

13. Disposal considerations

Waste disposal Observe all federal, state and local environmental regulations when disposing of this material.

Disposal of Packaging Dispose of in a safe manner in accordance with local/national regulations.

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14. Transportation information

DOT	Not regulated
IMDG	Not regulated
ICAO/IATA	Not regulated

15. Regulatory information

USA	Reported in the EPA TSCA Inventory.
- SARA 313	This product does not contain a chemical listed at or above de minimis concentrations
Canada	Listed in DSL
WHMIS hazard class	D2A Very toxic material causing other toxic effects
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 - China inventory	Listed
Korea	Listed in ECL (KE-31368)
Philippines	Listed in PICCS

16. Other information

This data sheet contains changes from the previous version in section(s)
2, 4, 11, 12

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Health, Safety & Environment Policy

We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs. We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources. Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation.

TO MEET THIS COMMITMENT WE WILL: Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe. Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations. Implement documented management systems consistent with and for promotion of the Responsible Care ethics.

Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers. Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles. Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations.

Educate and train employees, contractors and customers to improve their HSE performance. Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner. Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals. Support Product Stewardship programs in cooperation with customers, distributors and transporters.

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End of safety data sheet