



MATERIAL SAFETY DATA SHEET

Product name **Merquel® 48**
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

1. Identification of the substance & the company

Chemical name Hydrobromic acid
Trade name Merquel® 48
Synonym(s) Hydrogen Bromide Solution, HBr
Chemical formula HBr
Chemical family Inorganic bromide
Molecular weight 80.9
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
Emergency Telephone Chemtrec (800)424-9300

2. Hazards identification

Emergency overview *Colourless to yellow liquid, turns dark on exposure to air and light.
Corrosive to eyes, skin and mucous membranes.*

Potential Health Effects:

- Eye Contact** Corrosive
Symptoms include redness, pain and blurred vision.
Direct contact may result in serious corneal burns.
May cause temporary or permanent eye damage.
- Skin contact** Corrosive
Direct contact may result in serious skin burns.
May be absorbed through the skin in sufficient amount to cause systemic toxicity.
Symptoms include redness, pain and edema.
- Inhalation** Symptoms include sore throat, coughing, shortness of breath and nasal irritation.
May cause delayed pulmonary edema.
Corrosive to mucous membranes and upper respiratory tract.



MATERIAL SAFETY DATA SHEET

Product name **Merquel® 48**
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

- Ingestion May cause severe burns to the mucous membranes of the mouth, esophagus and stomach. Sore throat, abdominal pain and diarrhea.

Chronic effects/Carcinogenicity Prolonged exposure may cause dermatitis, dental erosion and bronchial irritation resulting in bronchial coughing and pneumonitis.

NFPA Ratings (Scale 0-4) Health = 3, Fire = 0, Reactivity = 0

Immediately Dangerous to Life or Health (IDLH) 30 ppm

3. Composition / information on ingredients

Components	CAS No.	Weight %
HYDROGEN BROMIDE	10035-10-6	48

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 Flood skin with water directing a stream of water under the clothing while it is being removed. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Treat contaminated clothing with 10% sodium bicarbonate and wash them before reuse. Get medical attention immediately.

Inhalation Harmful: danger of serious damage to health by prolonged exposure if swallowed. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.



MATERIAL SAFETY DATA SHEET

Product name **Merquel® 48**
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

Ingestion If swallowed, wash mouth thoroughly with plenty of water and give water to drink. Get medical attention immediately.

NOTE: Never give an unconscious person anything to drink.

Notes to the physician Corrosive. No specific antidote. Treat symptomatically and supportively. In case of ingestion DO NOT induce vomiting.

5. 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. Contain runoff to prevent entry into water or drainage systems. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode

Unusual fire and explosion hazards Attacks many metals with liberation of hydrogen, which is flammable and forms explosive mixture with air.

When heated to decomposition, may release poisonous and corrosive fumes of HBr and Br₂.

6. Accidental release measures

Personal precautions Wear respirator, chemical safety goggles, rubber gloves and boots
Evacuate area and keep personnel upwind.

Methods for cleaning up Cover with dry lime or soda ash, pick up, keep in closed container and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Environmental precautions Prevent product from entering drains.

7. Handling and storage

Handling Keep containers tightly closed and protected from physical damage.
Use fluorinated vinyl chloride resins or polyethylene glass-coated equipment.
Avoid breathing vapours and any other bodily contact.

Storage Store in a dry, cool, well-ventilated area away from incompatible materials (see "materials to avoid").

MATERIAL SAFETY DATA SHEET

Product name	Merquel® 48	
Product id	8407-48M	
Revision date	31/08/2011	Revision: 1

8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
HYDROGEN BROMIDE 10035-10-6	2 ppm Ceiling	3 ppm (10 mg/m ³)

Ventilation requirements Ventilation must be sufficient to maintain atmospheric concentration below recommended exposure limit.

Personal protective equipment:

- | | |
|---|--|
| <ul style="list-style-type: none"> - Respiratory protection - Hand protection - Eye protection - Skin and body protection | <ul style="list-style-type: none"> Full face mask with acid gas canister Rubber gloves Chemical safety goggles Body covering clothes and boots |
|---|--|

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

9. Physical and chemical properties

Appearance	Colourless to yellow liquid, turns dark on exposure to air and light.
Boiling point/range	126 °C (47.63%)
Melting point/range	ca. -63°C
Flash point	None
Auto-ignition temperature	Not applicable
Vapour pressure	8 mmHg (25°C)
Evaporation rate (ether=1)	Not available
Vapor density	2.8 (HBr 100%)
Viscosity	Not available
Solubility:	
- Solubility in water	For HBr 100%: 194 g/100ml at 20°C 221 gr/100ml at 0°C 130 gr/100ml at 100°C
- Solubility in other solvents	Soluble in organic solvents and acetic acid
Density	1.48 g/mL (20°C)



MATERIAL SAFETY DATA SHEET

Product name **Merquel® 48**
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

9. Physical and chemical properties

Decomposition temperature Not available
Partition coefficient Log Kow - 0.63-1.03 (25°C) (HBr 100%)
(n-octanol/water)
Explosive properties Not explosive
Oxidising properties Not oxidising

10. Stability and reactivity

Stability Stable at normal conditions
Sensitive to air and light.

Materials to avoid Strong oxidizers and strong bases
Ammonia, ozone and fluorine.

Conditions to avoid Avoid contact with metals.
Hazardous decomposition products Hydrogen bromide and bromine
Hazardous polymerization Will not occur

11. Toxicological information

Toxicity The following data refer to HBr.
Acute toxicity:
- Rat oral LD50 238 mg/kg (100% HBr)
- Rat inhalation LC50 9464.55 mg/m³ (100% HBr)
Skin corrosion/irritation Corrosive

Chronic toxicity Prolonged exposure may cause dermatitis, dental erosion and bronchial irritation resulting in bronchial coughing and pneumonitis.

Mutagenicity Not available
Carcinogenicity Not included in NTP 12th Report on Carcinogens
Not classified by IARC

Reproductive toxicity No information available



MATERIAL SAFETY DATA SHEET

Product name **Merquel® 48**
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

12. Ecological information

Note: *The following data refer to HBr*
Information on ecological effects
HBr is a strong acid which fully dissociates in water to ions (H+Br-). The toxic effect is from the acidity of the resulting solution which is a function of the HBr concentration.

Aquatic toxicity :
- 96 Hour-LC50, Fish 65.04 mg/L
- 48 Hour-EC50, Daphnia magna 19 mg/L
- 72 Hour-EC50, Freshwater algae 130 mg/L

13. Disposal considerations

Waste disposal Add slowly to a large amount of soda ash and slaked lime solution while stirring and cooling. Remove to approved incinerator or landfill. Observe all federal, state and local environmental regulations when disposing of this material.

Disposal of Packaging Before disposing of empty drums, wash them with 10% sodium bicarbonate solution.

14. Transportation information

UN No. 1788
DOT Proper shipping name: Hydrobromic acid
Class: 8 - Corrosives
Label: CORROSIVE (8)
Emergency Guide No.154
Packing Group: II
IMO Label: CORROSIVE (8)
Packing Group: II
Class: 8 - Corrosives
Proper shipping name: Hydrobromic acid



MATERIAL SAFETY DATA SHEET

Product name	Merquel® 48	
Product id	8407-48M	
Revision date	31/08/2011	Revision: 1

ICAO/IATA	Hazard Label (s): Corrosive Class: 8 Proper shipping name: Hydrobromic acid Packing group: II
------------------	--

15. Regulatory information

USA	Reported in the EPA TSCA Inventory.
- Massachusetts Right-to-Know Hazardous Substances list	Listed
- New Jersey Right-to-Know Hazardous Substances list	Listed
- Pennsylvania Right-to-Know Hazardous Substances list	Listed
- Illinois toxic substances list	Listed
- Workplace Classification	This product is considered highly hazardous (HHC) under the OSHA Hazard Communication Standard (29CFR 1910.1200). The Threshold Quantity (TQ) for this substance is 5000 lbs.
Canada	Listed in DSL
-WHMIS hazard class	A compressed gas D1A very toxic materials E corrosive material
EU	Reported in EINECS
Japan	ENCS no. 1-105 ISHL no. 1-105
Australia	Listed in AICS
New Zealand Inventory	Listed in NZIoC
Korea	Listed in the Korea Existing Chemicals Inventory (KECI), number KE-20187 Toxic chemical No.97-1-114, 1% or more in mixtures
Philippines	Listed in PICCS



MATERIAL SAFETY DATA SHEET

Product name Merquel® 48
Product id 8407-48M
Revision date 31/08/2011 **Revision: 1**

16. Other information

Health, Safety & Environment Policy

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

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

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

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ICL-IP America Inc. makes no representations as to the completeness or accuracy thereof.

Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use.

In no event will ICL-IP America Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.



MATERIAL SAFETY DATA SHEET

Product name	Merquel® 48	
Product id	8407-48M	
Revision date	31/08/2011	Revision: 1

In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.

Prepared by HERA Division in ISRAEL
telephone: +/972-8-6297835
telefax: +/972-8-6297832
www.icl-ip.com
e-mail:msdsinfo@icl-ip.com

End of safety data sheet