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|  <p><b>CHEMLABS</b><br/>Quality Our Forte</p> | <p><b>LEONID CHEMICALS PVT. LTD.,<br/>BANGALORE</b></p> <p>An ISO-9001:2008 Certified Company</p> <p>Quality Assurance Department</p> | <p>(CODE) DOCUMENT : WI<br/>(CODE) SECTION : WI/SM<br/>(DATE) : 01.04.2011</p> |  <p>Issue : 02<br/>Rev.: 00</p> |
| <p>Title: MATERIAL SAFETY DATA SHEET (MSDS): BROMOFORM</p>   |   |  | <p>1   Page of 1</p>  |

## SECTION 1- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name:  
BROMOFORM

Catalog Numbers:  
B069

Synonyms:  
Tribromomethane

### Company Information:

LEONID CHEMICALS Pvt Ltd,  
62/A-2, 1<sup>st</sup> Stage,  
Yeshvanthpur Industrial Suburb,  
Asoka puram School Road,  
Bangalore -22, Karnataka, INDIA  
Ph- +91-80-23378354  
Fax: +918023378354/23377126

## SECTION 2- COMPOSITION, INFORMATION ON INGREDIENTS

CAS # : 75-25-2 Chemical Name : Boric acid (H<sub>3</sub>BO<sub>3</sub>) % : 90 - 100% EINECS# : Unlisted. Hazard Symbols : Unlisted. Risk Phrases : Unlisted.

## SECTION 3- HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES SEVERE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS.

### Potential Health Effects

#### Eye Contact:

Irritant! Vapors are irritating to the eyes, splashes may cause severe eye damage.

#### Inhalation:

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Vapors irritate the respiratory tract, pharynx, and larynx producing lacrimation and salivation. Anesthetic properties have been reported. May be absorbed into the bloodstream with symptoms similar to ingestion.

**Ingestion:**

Poison! Can be absorbed through the linings of the GI tract. Depresses the central nervous system. May cause dizziness, disorientation and slurred speech. Serious cases may produce unconsciousness and death. May cause liver and kidney injury.

**Skin Contact:**

Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin with possible systemic effects.

**Chronic Exposure:**

Repeated or prolonged skin contact may produce dermatitis.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

**SECTION 4 -FIRST AID MEASURES**

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**SECTION 5 -FIRE FIGHTING MEASURES**

**Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

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Use any means suitable for extinguishing surrounding fire.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**SECTION 6 -ACCIDENTAL RELEASE MEASURES**

PROTECT AGAINST ANY CONTACT WITH THE CHEMICAL AND INHALATION OF VAPORS. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 4248802.

**SECTION 7 - HANDLING AND STORAGE**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage, direct sunlight, and freezing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

**SECTION 8 -Exposure Controls, Personal Protection**

**Airborne Exposure Limits:**

- OSHA Permissible Exposure Limit (PEL):  
0.5 ppm (TWA) (skin) -ACGIH Threshold Limit Value (TLV):  
0.5 ppm (TWA) (skin)

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the

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emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**SECTION 9 -PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : Clear, colorless solution.

Odor : Chloroform-like odor.

Solubility : 0.3 gm/100 ml water

Specific Gravity : 2.89 (20/4 °C)

pH : No information available.

% Volatiles by volume @ 21C (70F) : 100

Boiling Point : 149.5°C (302F)

Melting Point : 8.3°C (46F)

Vapor Density (Air=1) : 8.7 V

apor Pressure (mm Hg) : 5 @ 20°C (68F)

Evaporation Rate (BuAc=1) : No information available.

Molecular Weight : 252.73

Chemical Formula : CHBr3

NFPA Ratings : Health: 3 Flammability: 0 Reactivity: 0

**SECTION 10 - STABILITY AND REACTIVITY**

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**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

May form toxic fumes of bromides when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Reacts with chemically active metals such as sodium, potassium, calcium, powdered aluminum, zinc, and magnesium, and strong caustics.

**Conditions to Avoid:**

Light and incompatibles.

**SECTION 11 - TOXICOLOGICAL INFORMATION**

**RTECS#:**

No information available.

**LD50/LC50:**

No information available.

**Carcinogenicity:**

EPA / IRIS classification: Group B2 - Probable human carcinogen, sufficient animal evidence.

**Other:**

No information available.

**SECTION 12 - ECOLOGICAL INFORMATION**

**Environmental Fate:**

When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material is not expected to significantly bioaccumulate. When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is not expected to be degraded by photolysis.

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**Environmental Toxicity:**  
No information available.

### SECTION 13 -DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

### SECTION 14 - TRANSPORT INFORMATION

**Domestic (Land, D.O.T.)**

Proper Shipping Name : BROMOFORM Hazard Class : 6.1 UN/NA : UN2515 Packing Group : III  
Information reported for product/size : 500ML

**International (Water, I.M.O.)**

Proper Shipping Name : BROMOFORM Hazard Class : 6.1 UN/NA : UN2515 Packing Group : III  
Information reported for product/size : 500ML

**International (Air, I.C.A.O.)**

Proper Shipping Name : BROMOFORM Hazard Class : 6.1 UN/NA : UN2515 Packing Group : III  
Information reported for product/size : 500ML

### SECTION 15 -REGULATORY INFORMATION

**European/International Regulations**

No information available.

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**Hazard Symbols:**

No information available.

**Risk Phrases:**

No information available.

**Safety Phrases:**

No information available.

WGK (Water Danger/Protection) No information available.

United Kingdom Occupational Exposure Limits  
No information available.

**Canada**

No information available.

**Exposure Limits**

No information available.

**US FEDERAL TSCA**

No information available.

**SECTION 16 - ADDITIONAL INFORMATION**

**Label Hazard Warning:**

DANGER! MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES SEVERE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM, LIVER AND KIDNEYS.

**Label Precautions:**

Do not breathe vapor or mist. Do not get in eyes, on skin, or on clothing. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

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**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.





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| <p>Title: SPECIFICATION MANUAL - BROMOFORM</p>   |  |   | <p>1   Page of 1</p>   |

### Specification manual - Bromoform

MW: 252.73

**CHBr<sub>3</sub>**  
**CAS No** : 75-25-2  
**Product** : Bromoform LR Grade  
**Description** : Clear liquid  
**Cat No** : B069  
**Prepared Date** : 07.03.2005  
**Approved Date** : 07.03.2005

| REVISION HISTORY    |                       |                |                |
|---------------------|-----------------------|----------------|----------------|
| Issue/Rev           | Description of Change | Author         | Effective Date |
| 01/00               | Initial Release       | S. Paul Joshua | 07.03.2005     |
| 02/00               | Reviewed no changes   | S. Paul Joshua | 01.04.2011     |
| Next Review Due :   | 02.04.2015            |                |                |
| To be reviewed by : | Head-QC/QA            |                |                |

| Sl. No. | Tests      | Specification      |
|---------|------------|--------------------|
|         |            | LR                 |
| 1       | Assay (GC) | Min 98%            |
| 2       | Density    | 2.890 – 2.894 g/ml |

Approved By: S.Paul Joshua, Head Quality Control and Quality Assurance