

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MSDS Name : BROMOACETALDEHYDE DIETHYL ACETAL

Synonyms : 2-Bromo-1,1-diethoxyethane

Company Identification

Alkali Metals Ltd.,

Plot B-5, Block III, Uppal I.D.A,

Hyderabad - 500 039. India

For information call :- +91 40 2756 3002 / 2756 2932 / 2720 1179

Email :- alkalimetals@alkalimetals.com

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

| CAS# | Chemical Name |
|-----------|----------------------------------|
| 2032-35-1 | Bromoacetaldehyde diethyl acetal |

Hazard symbol : T

Risk Phrases : 22 23 36/38

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Harmful if swallowed. Toxic by inhalation. Irritating to eyes and skin. Light sensitive.

POTENTIAL HEALTH EFFECTS

Eye : Causes eye irritation.

Skin : Causes skin irritation. May be harmful if absorbed through the skin.

Ingestion : May cause irritation of the digestive tract. Harmful if swallowed.

Inhalation : May cause respiratory tract irritation. Toxic if inhaled.

Chronic : Not available.

SECTION 4 - FIRST AID MEASURES

Eyes : Flush eyes with plenty of water occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin : Get medical aid. Flush skin with plenty of soap and water while removing contaminated clothing and shoes. Remove contaminated clothing and shoes.

Ingestion : Get medical aid immediately. Wash mouth out with water.

Inhalation : Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

Notes to Physician : Treat symptomatically and supportively.

SECTION 5 – FIRE FIGHTING MEASURES

General Information : As in any fire, wear a self-contained breathing apparatus and full protective gear. Combustible Liquid.

Extinguishing Media : Use water spray, dry chemical, carbon dioxide or chemical foam.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information : Use proper personal protective equipment.

Spills / Leaks : Absorb spill with inert material, (e.g., dry sand or earth), then place into a suitable container.

SECTION 7 - HANDLING AND STORAGE

- Handling : Do not breath dust, vapor, mist, or gas. Avoid contact with skin and eyes.
- Storage : Keep away from sources of ignition . Do not store in direct sunlight.
Store in a tightly closed container.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

- Engineering Controls : Use adequate ventilation to keep airborne concentrations low
- Exposure Limits : Not available

PERSONAL PROTECTIVE EQUIPMENT

- Eyes : Wear chemical goggles, safety glasses without fail during handling.
- Skin : Wear appropriate protective gloves to prevent skin exposure.
- Clothing : Wear appropriate protective clothing to prevent skin exposure.
- Respirators : Use appropriate respirators where necessary.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------|---|
| Physical State | Liquid |
| Appearance | Clear, colourless to light yellow |
| Odor | Penetrating odor |
| pH | Not available |
| Vapor Pressure | Not available |
| Vapor Density | Not available |
| Viscosity | Not available |
| Boiling Point | 66 – 67°C @ 18mm Hg |
| Freezing/Melting Point | Not available. |
| Autoignition Temp. | Not available. |
| Flash Point | 65 °C (149 ° F) |
| Explosion Limits | Lower : Not available, Upper: Not available. |
| Decomposition Temp. | Not available |
| Solubility | Insoluble in water |
| Specific Gr./Density | 1.28 g/cm ³ |
| Molecular Formula | C ₆ H ₁₃ BrO ₂ |
| Molecular Weight | 196.99 |

SECTION 10 - STABILITY AND REACTIVITY

- Chemical stability : Stable under normal temperatures and pressures.
- Conditions to avoid : Incompatible materials, light.
- Incompatibilities with other Materials : Strong oxidizing agents, acids.
- Hazardous Decomposition Products : Carbon monoxide, carbon dioxide, hydrogen bromide.
- Hazardous Polymerization : Not available

SECTION 11 - TOXICOLOGICAL INFORMATION

- RTECS# : CAS# 2032-35-1 None listed
- LD50/LC50 : Not available.
- Carcinogenicity : Bromoacetaldehyde diethyl acetal - Not listed as a carcinogen by ACGIH, IARC, NTP.

SECTION 12 – ECOLOGICAL INFORMATION

Not available

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 – TRANSPORT INFORMATION

| | IATA | IMO | RID / ADR |
|---------------|--------------------------|--------------------------|--------------------------|
| Shipping Name | No information available | No information available | No information available |
| Hazard Class | -- | -- | -- |
| UN No. | -- | -- | -- |
| Packing Group | -- | -- | -- |

SECTION 15 – REGULATORY INFORMATION

European / International Regulations :

European Labeling in Accordance with EC Directives

Hazard Symbols : T

Risk Phrases : R 22 Harmful if swallowed.
R 23 Toxic by inhalation.
R 36 / 38 Irritating to eyes and skin.

Safety Phrases : S 28A After contact with skin, wash immediately with plenty of water.
S 37/39 Wear suitable gloves and eye/face protection.
S 38 In case of insufficient ventilation, wear suitable respiratory equipment.
S 45 In case of accident or if you feel unwell, seek medical advice immediately.

WGK (Water Danger / Protection)

CAS # 2032-35-1 : 2

Canada

CAS# 2032-35-1 is listed on Canada's NDSL list.

US FEDERAL

TSCA

CAS# 2032-35-1 is listed on the TSCA inventory.

Section 16 – Additional Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Alkali Metals Ltd., be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Alkali Metals Ltd., has been advised of the possibility.