1. Product Identification

Synonyms: Diisopropylether; Diisopropyl Oxide; 2-Isopropoxypropane; 2-2'-oxybispropane
CAS No.: 108-20-3
Molecular Weight: 102.18
Chemical Formula: (CH\textsubscript{3})\textsubscript{2}CHOCH(CH\textsubscript{3})\textsubscript{2}
Product Codes:
J.T. Baker: 9243
Mallinckrodt: 0800

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl Ether</td>
<td>108-20-3</td>
<td>99 – 100%</td>
<td>Yes</td>
</tr>
<tr>
<td>Stabilized with approx. 0.01% BHT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

SAF-T-DATA\textsuperscript{(tm)} Ratings (Provided here for your convenience)

- Health Rating: 2 - Moderate
- Flammability Rating: 3 - Severe (Flammable)
- Reactivity Rating: 2 - Moderate
- Contact Rating: 2 - Moderate (Life)
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
Causes irritation of the respiratory tract and mucous membranes. Higher concentrations may produce an narcotic effect.

Ingestion:
Large oral doses may cause an anesthetic effect and central nervous system depression.

Skin Contact:
Causes irritation. Symptoms include redness, itching, and pain. May be absorbed through the skin to produce symptoms paralleling ingestion.

Eye Contact:
Vapors and liquid cause irritation, redness, and pain.

Chronic Exposure:
Prolonged or repeated skin exposure may cause dermatitis and drying of skin.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or impaired pulmonary function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. 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. Remove contaminated clothing and shoes. Get medical attention. 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.

5. Fire Fighting Measures

Fire:
Flash point: -27.8C (-18F) CC
Autoignition temperature: 443C (829F)
Flammable limits in air % by volume:
lel: 1.4; uel: 7.9
Extremely Flammable.

Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. May form unstable peroxides which may explode spontaneously or when heated. Sealed containers may rupture when heated. Sensitive to static discharge.

Fire Extinguishing Media:
Dry chemical, foam or carbon dioxide. Do not use a solid stream of water, since the stream will scatter and spread the fire. Water spray may be used to keep fire exposed containers cool.

Special Information:
6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. 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. Use non-sparking tools and equipment. 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! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Avoid sunlight. Storage in small metal containers is preferred. Containers should be tightly sealed. Bond and ground containers and equipment when transferring liquid to avoid static sparks. Isopropyl Ether can readily oxidize in air to form unstable peroxides which are easily detonated. Material should be checked for peroxide content at least every three months after opening. The container should be regraded if Isopropyl Ether is safe or else discarded in a safe manner. Before distilling or evaporating, test for peroxides. DO NOT distill to dryness!! Leave at least 10% bottoms. 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.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-OSHA Permissible Exposure Limit (PEL):
  500 ppm (TWA)

-ACGIH Threshold Limit Value (TLV):
  250 ppm (TWA), 310 ppm (STEL)

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 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, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
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.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.

Odor:
Ether odor.

Solubility:
0.2g/100g water @ 20C (68F).

Specific Gravity:
0.78

pH:
No information found.

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

Boiling Point:
69C (156F)

Melting Point:
-85C (-121F)

Vapor Density (Air=1):
3.5

Vapor Pressure (mm Hg):
119 @ 20C (68F)

Evaporation Rate (BuAc=1):
8

10. Stability and Reactivity

Stability:
Stabilized with approx. 0.01% BHT
Unstabilized material: contact with air may form explosive peroxides that may detonate when heated or shocked.

Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:
Will not occur.

Incompatibilities:
Air, oxygen, chlorosulfonic acid, nitric acid. Contact with oxidizers may cause explosions or fire.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 5880 mg/kg. Skin rabbit LD50: 20ml/kg. Inhalation rat LD50: 162 gm/m3. Irritation data: skin rabbit 363 mg open - mild.

-----\Cancer Lists\-----------------------------------------------
---NTP Carcinogen---
12. Ecological Information

Environmental Fate:
When released into the soil, this material may leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is not expected to biodegrade. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. This material has an experimentally-determined bioconcentration factor (BCF) of less than 100. This material has a log octanol-water partition coefficient of less than 3.0. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is not expected to be degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:
The LC50/96-hour values for fish are between 10 and 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in 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.

14. Transport Information

Domestic (Land, D.O.T.)

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Proper Shipping Name: DIISOPROPYL ETHER
Hazard Class: 3
UN/NA: UN1159
Packing Group: II
Information reported for product/size: 327LB

International (Water, I.M.O.)

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Proper Shipping Name: DIISOPROPYL ETHER
Hazard Class: 3
UN/NA: UN1159
Packing Group: II
Information reported for product/size: 327LB

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\--------
Ingredient Isopropyl Ether (108-20-3) TSCA EC Japan Australia
---------
Ingredient Isopropyl Ether (108-20-3) Yes Yes Yes Yes

--------\Chemical Inventory Status - Part 2\--------
Ingredient Isopropyl Ether (108-20-3) --Canada--
---------
Ingredient Isopropyl Ether (108-20-3) Korea DSL NDSL Phil.
Isopropyl Ether (108-20-3)  Yes  Yes  No  Yes

\textbf{Federal, State \& International Regulations - Part 1:}
\begin{itemize}
  \item \textbf{SARA 302:} List Chemical Ctg.
  \item \textbf{SARA 313:} List Chemical Ctg.
\end{itemize}

\textbf{Ingredient:} RQ  TPQ  List Chemical Ctg.

Isopropyl Ether (108-20-3)  No  No  No  No

\textbf{Federal, State \& International Regulations - Part 2:}
\begin{itemize}
  \item \textbf{BCRA:} No
  \item \textbf{TSCA:} No
\end{itemize}

\textbf{Ingredient:} CERCLA 261.33 8(d)

Australian Hazchem Code: 3[Y]E
Poison Schedule: None allocated.
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

\section*{16. Other Information}

\textbf{NFPA Ratings:} Health: 1 Flammability: 3 Reactivity: 1

\textbf{Label Hazard Warning:}
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

\textbf{Label Precautions:}
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

\textbf{Label First Aid:}
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. 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. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

\textbf{Product Use:}
Laboratory Reagent.

\textbf{Revision Information:}
MSDS Section(s) changed since last revision of document include: 3, 11.

\textbf{Disclaimer:}
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