MATERIAL SAFETY DATA SHEET

Oakwood Products, Inc
1741 Old Dunbar Road
West Columbia, SC 29172
www.oakwoodchemical.com

Phone Numbers:
Product Information                      803-739-8800
Transportation Emergency           800-451-8346
Outside the USA                           760-602-8700

MATERIAL IDENTIFICATION

NAME: Bis(2-chloroethyl)ether
CAS#: [111-44-4]
CAT#: 2891
For R&D use only.

HEALTH HAZARD INFORMATION

TOXIC
FLAMMABLE
Harmful to skin, eyes, and respiratory system.
May be toxic if inhaled or swallowed.
Avoid prolonged exposure.
Do not breathe vapor.
Use caution when handling.
Exposure to any chemical should limited.
To the best of our knowledge, the health hazards of this material have not been fully investigated.
Material is for research and development purposes only

EXPOSURE CONTROLS/PERSONAL PROTECTION

Avoid all direct contact with product.
Wear protective safety goggles.
Wear chemical-resistant gloves.
Wear protective clothing and boots.
Ensure ventilation during use.
After contact with skin, wash immediately.

FIRST AID

EYE CONTACT: Check for and remove any contact lenses. IMMEDIATELY flush
Eyes with running water for at least 15 minutes while keeping eyes open. COLD water
may be used. Seek medical attention.
SKIN CONTACT: After contact with skin, wash with plenty of water. Gently and thoroughly wash
the contaminated skin with running water and non-abrasive soap. COLD water may be used.
Cover the irritated skin with an emollient. Seek medical attention. Wash any contaminated
clothing before reusing.
INHALATION: Remove victim from source of exposure to fresh air. If breathing is difficult
administer oxygen. Seek medical attention.
INGESTION: Do not induce vomiting. Give water to victim to drink. Seek medical attention.
FIRE MEASURES

Extinguishing media: carbon dioxide, dry chemical powder, alcohol or polymer foam.
Special fire-fighting procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Unusual fire and explosion hazards/decomposition of product: emits toxic fumes under fire conditions.

HANDLING AND STORAGE INFORMATION

TOXIC
FLAMMABLE
AVOID PROLONGED USE
AVOID ALL DIRECT CONTACT WITH MATERIAL
Wash thoroughly after handling.
Do not breathe dust or vapor.
Have safety shower and eye wash available.
Do not get in eyes, on skin, on clothing.
Keep container tightly closed.
Store in a cool, dry, well-ventilated area.
Ensure adequate ventilation during use.
Use only in a chemical fume hood.
Avoid sources of ignition.

ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Wear appropriate respirator, rubber boots and heavy rubber gloves. Scoop up and place in an appropriate container. Ventilate area and wash spill site after pickup is complete. Wash skin immediately with plenty of water. Absorb on sand or vermiculite and place in closed containers for disposal.

DISPOSAL INFORMATION

Dissolve in or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Federal, State and local laws.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: liquid
MF: C4H8Cl2O
MW: 143.01
BP: 66-67°C/15mm Hg
MP: no data
DEN: 1.220
N\textsubscript{D20}: 1.4570
FP: 55°C
REACTIVITY DATA

INCOMPATIBILITIES: strong oxidizing agents, strong acids and bases.
HAZARDOUS DECOMPOSITION PRODUCTS: may evolve carbon monoxide, carbon dioxide, and hydrogen chloride.

TOXICITY INFORMATION

ACUTE EFFECTS:
Toxic
Irritant
May be harmful by ingestion and inhalation.
Material is irritating to mucous membranes and upper respiratory tract.
RTECS: KN0876000

IRRITATION DATA
SKN-RBT 10 MG/24H OPEN  JIHTAB 30,63,1948
SKN-RBT 500 MG OPEN MLD  UCDS** 12/29/1971
EYE-RBT 100 MG SEV  AJOPAA 29,1363,1946

TOXICITY DATA
ORL-RAT LD50: 75 MG/KG  JIHTAB 30,63,1948
IHL-RAT LC50: 330 MG/M3/4H  85GMAT -.45,1982
ORL-MUS LD50: 209 MG/KG  ATDAEI 1,163,1992
IHL-MUS LC50: 650 MG/M3/2H  85GMAT -.45,1982
ORL-RBT LD50: 126 MG/KG  38MKAJ 2A,2518,1981
SKN-RBT LD50: 90 MG/KG  38MKAJ 2A,2518,1981
IHL-GPG LC50: 500 PPM/1H  85JCAE -.541,1986
SKN-GPG LD50: 300 MG/KG  JIHTAB 30,63,1948
ORL-MAM LD50: 112 MG/KG  GISAAA 39(4),86,1974

TARGET ORGAN DATA
SENSE ORGANS AND SPECIAL SENSES (PTOSIS)
GASTROINTESTINAL (CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS)
GASTROINTESTINAL (HYPERMOTILITY, DIARRHEA)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN  DTLVS* TLV/BEI,1997
ACGIH TLV-STEL 58 MG/M3 (10 PPM) (SKIN)  DTLVS* TLV/BEI,1997
ACGIH TLV-TWA 29 MG/M3 (5 PPM)  DTLVS* TLV/BEI,1997
IARC CANCER REVIEW:ANIMAL LIMITED EVIDENCE  IMEMDT 9,117,1975
IARC CANCER REVIEW:ANIMAL LIMITED EVIDENCE  IMEMDT 71,1265,1999
IARC CANCER REVIEW:HUMAN NO ADEQUATE DATA  IMEMDT 9,117,1975
IARC CANCER REVIEW:HUMAN INADEQUATE EVIDENCE  IMEMDT 71,1265,1999
IARC CANCER REVIEW:GROUP 3  IMEMDT 71,1265,1999

MSHA STANDARD-AIR:TWA 5 PPM (30 MG/M3) (SKIN)
DTLWS* 3,16,1973
OSHA PEL (GEN INDU): CL 15 PPM (90 MG/M3) (SKIN)
CFR 29.1910.1000, 1994
OSHA PEL (CONSTRUC): CL 15 PPM (90 MG/M3) (SKIN)
CFR 29.1926.55, 1994
OSHA PEL (SHIPIYARD): CL 15 PPM (90 MG/M3) (SKIN)
CFR 29.1915.1000, 1993
OSHA PEL (FED CONT): CL 15 PPM (90 MG/M3) (SKIN)
CFR 41.50-204.50, 1994
OEL- AUSTRALIA: TWA 5 PPM (30 MG/M3); STEL 10 PPM (60 MG/M3); SKIN JAN 1993
OEL- AUSTRIA: MAK 5 PPM (30 MG/M3), SKIN, JAN 1999
OEL- AUSTRIA: TWA 10 PPM (60 MG/M3); SKIN JAN 1993
OEL- BELGIUM: TWA 5 PPM (29 MG/M3); STEL 10 PPM (58 MG/M3); SKIN JAN 1993
OEL- FINLAND: TWA 5 PPM (30 MG/M3); STEL 10 PPM (60 MG/M3); SKIN JAN 1993
OEL- JAPAN: OEL 15 PPM (88 MG/M3), SKIN, JAN 1993
OEL- GERMANY: TWA 10 PPM (60 MG/M3); SKIN JAN 1993
OEL- JAPAN: TWA 15 PPM (88 MG/M3); SKIN JAN 1993
OEL- THE NETHERLANDS: TWA 5 PPM (30 MG/M3); SKIN JAN 1993
OEL- POLAND: MAC (TWA) 10 MG/M3, MAC (STEL) 60 MG/M3, JAN 1999
OEL- THE PHILIPPINES: TWA 15 PPM (90 MG/M3); SKIN JAN 1993
OEL- RUSSIA: STEL 0.6 MG/M3; SKIN JAN 1993
OEL- RUSSIA: TWA 15 PPM; STEL 2 MG/M3; SKIN JAN 1993
OEL- SWEDEN; CARCINOGEN JAN 1993
OEL- SWITZERLAND: TWA 5 PPM (30 MG/M3); STEL 25 PPM (50 MG/M3); SKIN JAN 1993
OEL- THAILAND: TWA 15 PPM (90 MG/M3) JAN 1993
OEL- TURKEY: TWA 15 PPM (90 MG/M3); SKIN JAN 1993
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO DICHLOROETHYLEther-AIR: CA TWA 5 PPM (SK); STEL 10 PPM
NIOSH* DHHS #92-100, 1992
NOHS 1974: HZD 84164; NIS 1; TFN 21; NOS 2; TNE 41
ATSDR TOXICOLOGY PROFILE (NTIS** PB/90/168683/AS)
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, SEPTEMBER 1999
NIOSH ANALYTICAL METHOD, 1994: DICHLOROETHYL ETHER, 1004
U.S. INFORMATION
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.
THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF
CALIFORNIA TO CAUSE CANCER.

To the best of our knowledge, the toxicological properties of this product have not been fully
determined.

TRANSPORT INFORMATION

Toxic liquids, flammable, organic, n.o.s.
6.1, 3
UN2929  II
The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. Oakwood shall not be held liable for any damage resulting from handling or from contact with the above product.