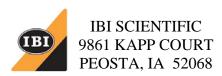
MATERIAL SAFETY DATA SHEET



EMERGENCY TELEPHONE NUMBER:

TELEPHONE NUMBER FOR INFORMATION:

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DATE PREPARED: 12-29-97 DATE REVISED: 1-14-10

SECTION 1. ----- CHEMICAL IDENTIFICATION-----

CATALOG#: IB15760 & IB15762

NAME: GLYCEROL CAS#: 56-81-5

SECTION 2. ----- HAZARDS IDENTIFICATION -----

LABEL PRECAUTIONARY STATEMENTS

IRRITANT

IRRITATING TO EYES AND SKIN.

TARGET ORGAN(S):

KIDNEYS

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF

WATER AND SEEK MEDICAL ADVICE.

WEAR SUITABLE PROTECTIVE CLOTHING.

HMIS: NFPA:
H: 1 H: 1
F: 0 F: 1
R: 1 R: 0
PE: E SH: N/A

SECTION 3. ---- COMPOSITION/INFORMATION ON INGREDIENTS -----

CHEMICAL NAME: CAS#: RTECS #: %:
GLYCEROL 56-81-5 MA8050000 >99.0

FOR MORE INFORMATION SEE COMPLETE RTECS ENTRY.

MF: C₃H₈O₃

EC NO: 200-289-5

SYNONYMS

CITIFLUOR AF 2 * GLYCERIN * GLYCERIN, ANHYDROUS * GLYCERINE *

GLYCERIN MIST (ACGIH,OSHA) * GLYCERIN, SYNTHETIC * GLYCERITOL *

GLYCYL ALCOHOL * CLYZERIN, WASSERFREI (GERMAN) * GROCOLENE * MOON *

OSMOGLYN * 1,2,3-PROPANETRIOL * STAR * SYNTHETIC GLYCERIN * 90

TECHNICAL GLYCERINE * TRIHYDROXYPROPANE * 1,2,3-TRIHYDROXYPROPANE *

SECTION 4. - - - - FIRST-AID MEASURES - - - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MIN. WHILE REMOVING CONTAMINATED CLOTHING & SHOES. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL

RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. ----- FIRE FIGHTING MEASURES -----

EXTINGUISHING MEDIA

WATER SPRAY.

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO

PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----

WEAR RESPIRATOR, CHEMICAL SAFETY GOGGLES, RUBBER BOOTS AND HEAVY RUBBER GLOVES.

ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR DISPOSAL.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

SECTION 7. ----- HANDLING AND STORAGE-----

DO NOT BREATHE VAPOR.

AVOID CONTACT WITH EYES, SKIN AND CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

WASH THOROUGHLY AFTER HANDLING.

KEEP TIGHTLY CLOSED.

STORE IN A COOL DRY PLACE.

HYGROSCOPIC

STORE AT ROOM TEMPERATURE.

ADDITIONAL INFORMATION

VIOLENT OR EXPLOSIVE REACTIONS HAVE OCCURED UPON DIRECT CONTACT OF GLYCEROL WITH: SODIUM HYDRIDE, PHOSPHOROUS TRIOXIDE, PERCHLORIC ACID, CHLORINE, CALCIUM HYPOCHLORITE, NITRIC ACID AND HYDROFLUORIC ACID, NITRIC ACID AND SULFURIC ACID, SODIUM PEROXIDE, HYDROGEN PEROXIDE OR POTASSIUM PERMANGANATE.

SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION - - - -

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

MECHANICAL EXHAUST RECOMMENDED.

SAFETY SHOWER AND EYE BATH.

SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----

APPEARANCE AND ODOR

LIQUID

PHYSICAL PROPERTIES

BOILING POINT: 182°C/20MM.

MELTING POINT: 20°C

FLASHPOINT: 160°C (320°F) EXPLOSION LIMITS IN AIR: LOWER 0.9%

AUTOIGNITION TEMPERATURE: 369°C (698°F)

VAPOR PRESSURE: <1MM @ 20°C

SPECIFIC GRAVITY: 1.261 VAPOR DENSITY: 3.1

SECTION 10. ------STABILITY AND REACTIVITY -----

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

STRONG BASES

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR.

SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

ACUTE EFFECTS

MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.

CAUSES EYE AND SKIN IRRITATION.

MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER

RESPIRATORY TRACT.

PROLONGED EXPOSURE CAN CAUSE:

NAUSEA. HEADACHE AND VOMITING

CHRONIC EFFECTS

TARGET ORGAN(S): KIDNEYS

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND

TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS #: MA8050000

GLYCEROL

IRRITATION DATA

 SKN-RBT 500 MG/24H MLD
 85JCAE -,207,1986

 EYE-RBT 126 MG MLD
 BIOFX* 9-4/1970

 EYE-RBT 500 MG/24H MLD
 85JCAE -,207,1986

TOXICITY DATA

ORL-RAT LD50:12600 MG/KG FEPRA7 4,142,1945 IHL-RAT LC50:>570 MG/M3/1H BIOFX* 9-4/1970 IPR-RAT LD50:4420 MG/KG RCOCB8 56,125,1987 SCU-RAT LD50:100 MG/KG NIIRDN 6,215,1982 IVN-RAT LD50:5566 MG/KG ARZNAD 26,1581,1976 ORL-MUS LD50:4090 MG/KG FRZKAP (6),56,1977 IPR-MUS LD50:8700 MG/KG ARZNAD 28,1579,1978 SCU-MUS LD50:91 MG/KG NIIRDN 6,215,1982 IVN-MUS LD50:4250 MG/KG JAPMA8 39,583,1950 ORL-RBT LD50:27 GM/KG DMDJAP 31,276,1959 SKN-RBT LD50:>10 GM/KG BIOFX* 9-4/1970 IVN-RBT LD50:53 GM/KG NIIRDN 6,215,1982 ORL-GPG LD50:7750 MG/KG JIHTAB 23,259,1941

TARGET ORGAN DATA

BEHAVIORAL (HEADACHE)

GASTROINTESTINAL (NAUSEA OR VOMITING)

PATERNAL EFFECTS (SPERMATOGENESIS)

PATERNAL EFFECTS (TESTES, EPIDIDYMIS, SPERM DUCT)

EFFECTS ON FERTILITY (MALE FERTILITY INDEX)

EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES

(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR

COMPLETE INFORMATION.

SECTION 12. ---- ECOLOGICAL INFORMATION -----

DATA NOT YET AVAILABLE.

SECTION 13. ---- DISPOSAL CONSIDERATIONS -----

OBSERVE ALL FEDERAL. STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. ----- TRANSPORT INFORMATION -----

NOT REGULATED.

SECTION 15. - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

IRRITANT

R: 36/37/38

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.



Irritant (Xi)

S: 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION. REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK

ACGIH TLV-TWA 10 MG/M3, INHALABLE PARTICULATE DTLVS* TLV/BEI,1996 EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION FEREAC 54,7740,1989

MSHA STANDARD: NUISANCE PARTICULATES (MIST)

DTLWS* 3,20,1973

OSHA PEL (GEN INDU):8H TWA 15 MG/M3, TOTAL DUST

CFRGBR 29,1910.1000,1994

OSHA PEL (GEN INDU):8H TWA 5 MG/M3, RESPIRABLE FRACTION

CFRGBR 29,1910.1000,1994

OSHA PEL (CONSTRUC):8H TWA 15 MG/M3, TOTAL DUST

CFRGBR 29,1926.55,1994

OSHA PEL (CONSTRUC):8H TWA 5 MG/M3, RESPIRABLE FRACTION

CFRGBR 29,1926.55,1994

OSHA PEL (SHIPYARD):8H TWA 15 MG/M3, TOTAL DUST

CFRGBR 29.1915.1000.1993

OSHA PEL (SHIPYARD):8H TWA 5 MG/M3, RESPIRABLE FRACTION

CFRGBR 29,1915.1000,1993

OEL-AUSTRALIA:TWA 10 MG/M3 JAN 1993

OEL-BELGIUM:TWA 10 MG/M3 JAN 1993

OEL-FINLAND:TWA 20 MG/M3 JAN 1993

OEL-FRANCE:TWA 10 MG/M3 JAN 1993

OEL-THE NETHERLANDS:TWA 10 MG/M3 JAN 1993

OEL-UNITED KINGDOM:TWA 10 MG/M3 JAN 1993

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NOHS 1974: HZD 35085; NIS 358; TNF 86657; NOS 198; TNE 1085329

NOES 1983: HZD 35085; NIS 310; TNF 67054; NOS 215; TNE 2135546; TFE 1346631

EPA TSCA SECTION 8(B) CHEMICAL INVENTORY EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1997

SECTION 16. ---- OTHER INFORMATION-----

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