ATTN: SAFETY DIRECTOR
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DATE 01/11/99
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MATERIAL SAFETY DATA SHEET PAGE 1

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

CATALOG #: T5945-5
NAME: TRI(ETHYLENE GLYCOL), 99%

SECTION 2. - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - -

CAS #: 112-27-6
MF: C6H14O4
EC NO: 203-953-2

SYNONYMS
1,2-BIS(2-HYDROXYETHOXY)ETHANE * DI-BETA-HYDROXYETHOXYETHANE * 3,6-DIOXAOCTANE-1,8-DIOL * 2,2'- (1,2-ETHANEDIYLBIS(OXY))BISETHANOL * ETHANOL, 2,2'-(ETHYLENEDI-OXY)DI-* 2,2'-ETHYLENEDI-OXYBIS(ETHANOL) * 2, 2'-ETHYLENEDI-OXYDIETHANOL * 2,2'-ETHYLENEDI-OXYETHANOL * ETHYLENE GLYCOL-BIS-(2-HYDROXYETHYL ETHER) * ETHYLENE GLYCOL DIHYDROXYDIETHYL ETHER * GLYCOL BIS(HYDROXYETHYL) ETHER * TEG * TRIETHYLENGLYKOL (CZECH) * TRIGEN * TRIGLYCOL *

SECTION 3. - - - - HAZARDS IDENTIFICATION - - - -

LABEL PRECAUTIONARY STATEMENTS
IRRITANT
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE GLOVES AND EYE/FACE PROTECTION.
HYGROSCOPIC
KEEP TIGHTLY CLOSED.

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

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND 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 CONTINUE ON NEXT PAGE

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We are Committed to the Success of our Customers through Science, Technology and Service.
CATALOG #: T5945-5
NAME: TRI(ETHYLENE GLYCOL), 99%

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- - - - - - - -
REFER TO SECTION 8.

SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - -
WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
MECHANICAL EXHAUST REQUIRED.
DO NOT BREATHE VAPOR.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
IRRITANT.
KEEP TIGHTLY CLOSED.
HYGROSCOPIC
STORE IN A COOL DRY PLACE.

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

APPEARANCE AND ODOR
VISCOUS COLORLESS LIQUID

PHYSICAL PROPERTIES
BOILING POINT: 285 C
MELTING POINT: -7 C
FLASHPOINT 330F 165.55C
EXPLOSION LIMITS IN AIR:
UPPER 9.2%
LOWER 0.9%
AUTOIGNITION TEMPERATURE: 699 F 370C
VAPOR PRESSURE: <0.01MM 20 C 1MM 114 C
SPECIFIC GRAVITY: 1.125
VAPOR DENSITY: 5.2

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

INCOMPATIBILITIES

CONTINUED ON NEXT PAGE
Catalog #: T5945-5
Name: Tri(Ethylene Glycol), 99%

Strong Oxidizing Agents
Strong Acids

Hazardous Combustion or Decomposition Products
Carbon Monoxide, Carbon Dioxide

Section 11. - - - - - - - - Toxicological Information - - - - - - -

Acute Effects
May be harmful by inhalation, ingestion, or skin absorption.
Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract.
Causes skin irritation.
Prolonged exposure can cause:
Nausea, headache and vomiting.
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS #: YE4550000
Triethylene Glycol

Irritation Data
Skin-Rat 500 mg/24h MLD
Eye-Rat 500 mg MLD

Toxicity Data
OrR-Hmn LD50: 5 gm/kg
OrR-Rat LD50: 17 gm/kg
IVN-Rat LD50: 1.1700 mg/kg
IPR-Mus LD50: 0.18141 mg/kg
SCU-Mus LD50: 0.8750 mg/kg
IVN-Mus LD50: 0.6500 mg/kg
IVN-DOG LD50: >4500 mg/kg
OrR-Rat LD50: 8400 mg/kg
SKN-Rat LD50: >20 ML/kg
IVN-Rat LD50: 1.1900 mg/kg
OrR-GPG LD50: 7900 mg/kg
IVN-GPG LD50: 0.1600 mg/kg
OrR-MAM LD50: 8150 mg/kg

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 - - - - - - - -

Dissolve 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 environmental regulations.

Continued on next page

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CALCULUS #: T5945-5
NAME: TRI(ETHYLENE GLYCOL), 99%

SECTION 14. - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -
CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - - - - REGULATORY INFORMATION - - - - - - - - -
EUROPEAN INFORMATION
IRRITANT
R 36/37/38
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.
§ 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
§ 37/39
WEAR SUITABLE GLOVES AND EYE/FACE PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS
OEL=MAK
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,1989
NOHS 1974: H2D 80354; NIS 120; TNF 18128; NOS 97; TNE 146703
NOES 1983: H2D 80354; NIS 119; TNF 23174; NOS 100; TNE 233613; TFE
53367
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998
NIOSH ANALYTICAL METHOD, 1996: GLYCOLS, 5523

U.S. INFORMATION
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

SECTION 16. - - - - - - - - OTHER INFORMATION- - - - - - - - - - - - -
THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ALDRICH SHALL NOT BE
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