

UNION CARBIDE CORP LINDE DIV -- MONOETHANOLAMINE -- 6810-00-922-0866

===== Product Identification =====

Product ID:MONOETHANOLAMINE

MSDS Date:10/08/1998

FSC:6810

NIIN:00-922-0866

Status Code:A

MSDS Number: CJJGH

=== Responsible Party ===

Company Name:UNION CARBIDE CORP LINDE DIV

Address:39 OLD RIDGEBURY RD

City:DANBURY

State:CT

ZIP:06817-0001

Country:US

Info Phone Num:203-744-3487

Emergency Phone

Num:800-UCC-HELP (304-744-3487)

Resp. Party Other MSDS Num.:000000001592

CAGE:36346

=== Contractor Identification ===

Company Name:EMULTEC INDUSTRIAL PRODUCTS INC

Address:1150 HAYDEN DR SUITE 100

Box:City:CHARROLLTON

State:TX

ZIP:75006

Country:US

Phone:972-417-1288

Contract Num:SP0450-99-M-C213

CAGE:0WA27

Company Name:UNION CARBIDE CORP

Address:39 OLD RIDGEBURY ROAD

Box:City:DANBURY

State:CT

ZIP:06817-0001

Country:US

Phone:800-822-4357/732-563-5522 (MSDS)

CAGE:61637

Company Name:UNION CARBIDE C

ORP LINDE DIV
Address:39 OLD RIDGEBURY RD
Box:City:DANBURY
State:CT
ZIP:06817-0001
Country:US
Phone:800-822-4357; 304-744-3487
CAGE:36346

Company Name:UNION CARBIDE CORP CHEMICALS AND PLASTICS DIV
Address:308 HARPER DR
Box:City:MOORESTOWN
State:NJ
ZIP:08057
Country:US
Phone:201-646-1111
CAGE:7L938

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===== Composition/Information on Ingredients =====

Ingred Name:MONOETHANOLAMINE
CAS:141-43-5
RTECS #:KJ5775000
> Wt:99.
Other REC Limits:NONE RECOMMENDED
OSHA PEL:6 MG/M3;3 PPM

OSHA STEL:15 MG/M3, 6 PPM
ACGIH TLV:7.5 MG/M3;3 PPM
ACGIH STEL:15 MG/M3;6 PPM

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===== Hazards Identification =====

LD50 LC50 Mixture:LD50 (ORAL, RAT, MALE) 1.19 ML/KG
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO
Health Hazards Acute and Chronic:TARGET ORGANS: EYE, SKIN, LUNG, LIVER,
KIDNEY (HMIS). ACUTE - INHALATION: MAY CAUSE IRRITATION OF
RESPIRATORY TRACT, EXPERIENCED AS NASAL DISCOMFOR
T AND DISCHARGE,
COUGHING, CHEST PAIN. PROLONGED OVER EXPOSURE MAY CAUSE INJURY. EYE
CONTACT: LIQUID CAUSES SEVERE IRRITATION, DISCOMFORT OR PAIN,
EXCESS BLINKING AND TEARING, REDNESS AND SWELLING OF CONJUNCTIVA
AND BURNS OF CORNEA. SKIN CONTACT: CAUSES DISCOMFORT OR PAIN,
SEVERE REDNESS AND SWELLING, TISSUE DESTRUCTION. SKIN ABSORPTION:
TOXIC. SWALLOWING: ASPIRATION INTO LUNGS CAUSES LUNG INJURY. CAUSES
BURNS, STOMACH PAIN, DIZZINESS, COMA. CHRONIC - MAY CAUSE LIVE

R

AND KIDNEY DAMAGE.

Explanation of Carcinogenicity:NONE

Effects of Overexposure:NASAL DISCOMFORT AND DISCHARGE, COUGHING, AND POSSIBLY ACCOMPANIED BY CHEST PAIN, LUNG INJURY, SEVERE IRRITATION, PAIN, EXCESS BLINKING AND TEARING, REDNESS AND SWELLING OF CONJUNCTIVA AND CHEMICAL BURNS OF CORNEA, SKIN SEVERE EXCESS REDNESS AND SWELLING, TISSUE DESTRUCTION, FISSURES, ULCERATION AND POSSIBLY BLEEDING INTO INJURED AREA, NAUSEA, VOMITING, DIARRHEA, STOMACH PAIN, DIZZINESS, DROWSINESS, THIRST, FAINTNESS, WEAKNESS, CIRCULATORY COLLAPSE AND COMA

Medical Cond Aggravated by Exposure:SKIN CONTACT MAY AGGRAVATE AN EXISTING DERMATITIS. INHALATION OF MATERIAL MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE.

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===== First Aid Measures =====

First Aid:INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, OXYGEN MAY BE GIVEN BY QUALIFIED PERSONN

EL. OBTAIN MEDICAL ATTENTION. EYE

CONTACT: IMMEDIATELY FLUSH EYES WITH WATER AND CONTINUE WASHING FOR AT LEAST 15 MINUTES. DO NOT REMOVE CONTACT LENSES, IF WORN.

OBTAIN MEDICAL ATTENTION WITHOUT DELAY, PREFERABLY FROM AN OPHTHALMOLOGIST. SKIN: IMMEDIATELY REMOVE CONTAMINATED CLOTHING AND SHOES. WASH SKIN WITH SOAP AND WATER. OBTAIN MEDICAL ATTENTION.

SWALLOWING: IF PATIENT IS FULLY CONSCIOUS, GIVE 2 GLASSES OF MILK OR WATER. DO NOT INDUCE VOMITING. OBTAIN MEDICAL A

TTENTION WITHOUT DELAY.

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===== Fire Fighting Measures =====

Flash Point Method:PMCC

Flash Point:=-96.1C, 205.F

220 OC

Lower Limits:N/D

Upper Limits:N/D

Extinguishing Media:APPLY ALCOHOL-TYPE OR ALL-PURPOSE TYPE FOAM BY MANUFACTURER'S RECOMMENDED TECHIQUES FOR LARGE FIRES. USE CARBON DIOXIDE OR DRY CHEMICAL MEDIA FOR SMALL FIRES.

Fire Fighting Procedures:DO NOT DIRECT A SOLID STREAM OF WATER OR FOAM INTO BURNING MOLTEN MATERIAL; THIS MAY CAUSE SPA

TTERING AND SPREAD

THE FIRE. USE SELF-CONTAINED BREATHING APPARATUS, EYE PROTECTION AND PROTECTIVE CLOTHING.

Unusual Fire/Explosion Hazard:DURING FIRE, OXIDES OF NITROGEN MAY BE EVOLVED.

===== Accidental Release Measures =====

Spill Release Procedures:COLLECT FOR DISPOSAL. WEAR SUITABLE PROTECTIVE EQUIPMENT. AVOID CONTACT WITH EYES AND SKIN. AVOID RUNOFF TO WATERWAYS AND SEWERS. MONOETHANOLAMINE IS TOXIC TO AQUATIC LIFE AT RELATIVELY LOW CONCENTRATIONS IN WATER.

Neutralizing Agent:ACETIC ACID, DILUTE PHOSPHORIC OR SULFURIC ACID

===== Handling and Storage =====

Handling and Storage Precautions:STABILITY - MONOETHANOLAMINE AND IRON FORM A COMPLEX MOLECULE THAT CAN SPONTANEOUSLY DECOMPOSE AT TEMPERATURES BETWEEN 130 AND 160 C, AND HAS BEEN SUSPECTED OF CAUSING A FIRE IN A NEARLY EMPTY STORAGE TANK CONTAINING A "HEEL" OF MEA IN CONTACT WITH CARBON STEEL COILS. WHEN THAWING, HEAT BE LOW 130C.

Other Precautions:DO NOT GET IN EYES, ON SKIN OR ON CLOTHING. DO NOT SWALLOW. AVOID BREATHING VAPORS. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. FOR INDUSTRIAL USE ONLY.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:USE SELF-CONTAINED BREATHING APPARATUS IN HIGH VAPOR CONCENTRATIONS

Ventilation:GENERAL MECHANICAL ROOM VENTILATION IS EXPECTED TO BE SATISFACTORY WHERE THIS PRODUCT IS STORED AND HANDLED IN CLOSED EQUIPMENT.

Protective Gloves:PVC-COATED RUBBER

Eye Protection:MONOGOGGLES

Other Protective Equipment:EYE BATH, SAFETY SHOWER, AND CHEMICAL APRON. SPECIAL LOCAL VENTILATION IS NEEDED AT POINTS WHERE VAPORS CAN BE EXPECTED TO ESCAPE TO THE WORKPLACE AIR.

Work Hygienic Practices:OBSERVE GOOD INDUSTRIAL HYGIENE PRACTICES AND RECOMMENDED PROCEDURES. WASH BEFORE EATING, DRINKING OR SMOKING.

Supplemental Safety and Health
NOTE TO PHYSICIAN: THERE I

S NO SPECIFIC ANTIDOTE. TREATMENT SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND CLINICAL CONDITION OF THE PATIENT. THE HAZARDS OF THIS MATERIAL ARE DUE MAINLY TO ITS SEVERELY IRRITANT PROPERTIES ON SKIN AND MUCOSAL SURFACES. THE STOMACH SHOULD BE EVACUATED CAREFULLY IN CASE OF POISONING.

===== Physical/Chemical Properties =====

HCC:B2

Boiling Pt:=170.3C, 338.7F

Melt/Freeze Pt:=10.6C, 51.F

Vapor Pres:0.2 MMHG

Vapor Density:2.1

Spec Gravity:1.017

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vaporation Rate & Reference:0.02 (BUTYL ACETATE=1)

Solubility in Water:100%

Appearance and Odor:LIQUID, TRANSPARENT COLORLESS, MILD AMMONICAL ODOR.

Percent Volatiles by Volume:100

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

STRONG OXIDIZING AGENTS, STRONG BASES, STRONG ACIDS, ALDEHYDES, KETONES, ACRYLATES, ORGANIC ANHYDRIDES, ORGANIC HALIDES, FORMATES, LACTONES, OXALATES.

Stability Condition to Avoid:TEMPERATURES ABOVE

250 DEGREES C. MAY

UNDERGO SELF-SUSTAINING DECOMPOSITION.

Hazardous Decomposition Products:OXIDES OF CARBON AND NITROGEN

===== Toxicological Information =====

Toxicological Information:PERORAL: RAT LD50 MALE 1.19 (0.79 - 1.80)

ML/KG; PERORAL: RAT LD50 FEMALE 1.07 (0.72 - 1.59) ML/KG;

PERCUTANEOUS: RABBIT LD50 24 HR OCCLUDED FEMALE 2.83 (1.61 - 4.98)

ML/KG; PERCUTANEOUS: RABBIT LD50 24 HR OCCLUDED MALE 2.46 (1.76 - 3.39) ML/KG

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==== Ecological Information =====

Ecological:BOD (% OXYGEN CONSUPTION): DAY 5, 60%; DAY 10, 75%, DAY 20, 100%. ECOTOXICITY: ECOTOXICITY TO MICRO-ORGANISMS: LC50 700 - 2000 MG/L; ECOTOXICITY TO AQUATIC INVERTEBRATES: DAPHNIA LC50 48 H 33 MG/L ; ECOTOXICITY TO AQUATIC INVERTEBRATES: DAPHNIA LC50 48 H 93 MG/L; CONFIDENCE LIMITS: 83 - 103 MG/L; ECOTOXICITY TO FISH: FATHEAD MINNOW LC50 96 H 125 MG/L; ECOTOXICITY TO FISH: FATHEAD MINNOW L C50 96 H 206 MG/L; CONFIDENCE LIMITS: 176 - 240 MG/L

==== Disposal Considerations =====

Waste Disposal Methods:INCINERATE IN A FURNACE WHERE PERMITTED UNDER APPROPRIATE LOCAL, STATE, AND FEDERAL REGULATIONS. DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, PROVINCIAL, AND LOCAL ENVIRONMENTAL REGULATIONS. EMPTY CONTAINERS SHOULD BE RECYCLED OR DISPOSED OF THROUGH AN APPROVED WASTE MANAGEMENT FACILITY.

==== Regulatory Information =====

SARA Title III Information:CERCLA (COMPREHENSIVE ENVIROMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 SECTION 103): DIETHANOLAMINE.SARA TITLE III SECTION 311 AND 312: DELAYED HAZARD: YES, IMMEDIATE HEALTH HAZARD: YES.

Federal Regulatory Information:ALL COMPONENTS OF THIS PRODUCT ARE INCLUDED ON OR EXEMPTED FROM LISTING ON THE TOXIC SUBSTANCE CONTROL ACT (TSCA) INVENTORY OF CHEMICAL SUBSTANCES.

State Regulatory Information:PENNSYLVANIA (WORKER AND COMMUNITY RIGHT TO KNOW ACT): MONOETHANOLAMINE. MASSACHUSETTS (HAZARDOUS SUBSTANCE DISCOLSURE BY EMPLOYERS): MONOETHANOLAMINE. THIS PRODUCT CONTAINS NO LISTED SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM, AT LEVELS WHICH WOULD REQUIRE A WARNING UNDER THE STATUTE. CALIFORNIA SCAQMD (SOUTH COAST AIR QQUALITY MANAG EMENT DISTRICT) RULE 443.1: VOC 1014 G/L.

==== Other Infor

mation =====

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