Diethanolamine (DEA)

SECTION 1: PRODUCT DESCRIPTION

TRADE NAME	Diethanolamine
SYNONYM	DEOA 98; 2,2-Iminodiethanol; 2,2Iminobisethanol
ARPC Product Code	3303
CHEMICAL NAME	Bis(2-Hydroxyethyl) Amine
FORMULA	$C_4H_{11}NO_2$

SECTION 2: HAZARDS IDENTIFICATION

INHALATION	HIGH VAPOUR CONCENTRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS. CONTAINS MATERIAL THAT COULD CAUSE HEADACHES, NAUSEA, DIZZINESS, AND RESPIRATORY IRRITATION IF INHALED. MAY CAUSE IRRITATION OF THE NOSE AND THROAT WITH HEADACHE, PARTICULARLY FROM MISTS. HIGH VAPOUR CONCENTRATIONS (CAUSED, FOR EXAMPLE BY HEATING THE MATERIAL IN AN ENCLOSED AND POORLY VENTILATED WORKPLACE) MAY PRODUCE NAUSEA, VOMITING, HEADACHE, DIZZINESS, AND IRREGULAR EYE MOVEMENTS.
SKIN CONTACT	BRIEF CONTACT MAY CAUSE MINIMAL IRRITATION, SEEN AS MILD LOCAL REDNESS. REPEATED CONTACT CAN CAUSE SEVERE IRRITATION.
EYE CONTACT	CAUSES IRRITATION. EXPERIENCED AS EXCESS BLINKING AND TEAR PRODUCTION,. EXCESS REDNESS AND SWELLING OF THE CONJUNCTIVA MAY OCCUR. MAY CAUSE CORNEAL INJURY.
INGESTION	MODERATELY TOXIC. MAY CAUSE NAUSEA, VOMITING, STOMACHACHE, AND DIARRHEA.

SECTION 3: FIRST AID MEASURES

INHALATION	REMOVE TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT
SKIN CONTACT	REMOVE ANY CONTAMINATED CLOTHING AND WASH AFFECTED AREA WITH PLENTY OF SOAP AND WATER. IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.
EYE CONTACT	FLUSH EYES WITH LARGE AMOUNTS OF RUNNING WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART TO ENSURE RINSING OF THE ENTIRE SURFACE OF THE EYE AND LIDS WITH WATER.DO NOT ATTEMPT TO NEUTRALIZE WITH CHEMICAL AGENTS. GET IMMEDIATE MEDICAL ATTENTION. IF PHYSICIAN NOT AVAILABLE, FLUSH FOR ADDITIONAL 15 MINUTES AND THEN TRANSPORT TO MEDICAL CARE.
INGESTION	HAVE VICTIM DRINK TWO GLASSES OF WATER.INDUCE VOMITING AS DIRECTED BY MEDICAL PERSONNEL.DO NOT GIVE ANYTHING BY MOUTH TO A CONVULSING OR UNCONSCIOUSPERSON.

SECTION 4: FIRE AND EXPLOSION HAZARDS

FLASHPOINT : 169°C
LOWER FLAMMABLE LIMITS : 1.6%VOL
UPPER FLAMMABLE LIMITS : 10.6 % VOL.
AUTO-IGNITION TEMP : 662°C
EXPLOSION POWER :
EXTINGUISHING MEDIA: CARBON DIOXIDE, DRY CHEMICAL, FOAM. WATER, SPRAY.
FIRE FIGHTING PROCEDURES : WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS. WEAR PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, PANTS, BOOTS, AND GLOVES.).KEEP PERSONNEL REMOVED AND UPWIND OF FIRE. USE WATER-SPRAY TO KEEP CONTAINERS COOL. DO NOT DIRECT A SOLID STREAM OF WATER OR FOAM INTO HOT, BURNING POOLS; THIS MAY CAUSE FROTHING AND INCREASE FIRE INTENSITY.

SECTION 5: TOXICOLOGICAL INFORMATION

CARCINOGENICITY OF MATERIAL: NOT ESTABLISHED. DO NOT USE NITROSATING AGENTS WITH THIS PRODUCT SINCE NITROSAMINES MAY FORM. NITROSAMINES HAVE BEEN SHOWN TO BE CARCINOGENIC IN TESTS WITH LABORATORY ANIMALS.

SECTION 6: PHYSICAL DATA

APPEARANCE AND ODOR : Colorless to yellow liquid with slig odour	VAPOR PRESSURE: (MMHG) <0.01
PH : 11.5	BOILING POINT : 269° C
SOLUB. in WATER (% W/W) : 96 %	MELTING POINT : 28
SULUB in OTHER : Alcohol	MOLECULAR WEIGHT: 105.14
EVAPORATION RATE : NOT ESTABLISHED.	SPEC GRAV : 1.09g/cm3 @ 30 °C
DECOMO. TEMP : –	VAPOR DENSITY (AIR=1) : 3.7

SECTION 7: HAZARDOUS INGREDIENTS

INGREDIENTS	% (W/W)	T.L.V	TOXICOLIGICAL	CAS NO.
Diethanolamine	100	3 PPM/8HR	SEE SECTION 5.	111-42-2

SECTION 8: see section 5&2: –

SECTION 9: PROTECTION INFORMATION

GLOVES/ TYPE : CHEMICAL RESISTANT GLOVES.

RESPIRATORY/TYPE : ATMOSPHERIC LEVELS SHOULD BE MAINTAINED BELOW THE EXPOSURE GUIDELINE. IF EXPOSUREC AN EXCEED PEL/TLV, AN APPROVED AIR-PURIFYING OR SUPPLIED AIR RESPIRATOR OPERATED IN A POSITIVE PRESSURE MODE SHOULD BE USED. FOR EMERGENCY AND OTHER CONDITIONS WHERE THE EXPOSURE GUIDELINE MAY BE GREATLY EXCEEDED, USE AN APPROVED POSITIVE PRESSURE SELF-CONTAINED.

BREATHING APPARATUS :

EYE/TYPE: CHEMICAL SAFETY GOGGLES. FACE SHIELD. DO NOT WEAR CONTACT LENSES.

FOOTWEAR/TYPE : NO SPECIAL REQUIREMENTS.

CLOTHING/TYPE : WEAR IMPERVIOUS PROTECTIVE CLOTHING. WEAR AN APRON AND/OR AN OVERALL.

OTHER/TYPE : EYE BATH AND SAFETY SHOWER.

ENGINEERING CONTROLS: CONTROL AIRBORNE CONCENTRATIONS BELOW THE EXPOSURE GUIDELINE.

SECTION 10: REACTIVITY DATA

STABILITY	Stable
CONDITIONS TO AVOID	WARNING! DO NOT MIX THIS PRODUCT WITH NITRITES OR OTHER NITROSATING AGENTS BECAUSE NITROSAMINES MAY BE FORMED. NITROSAMINES HAVE BEEN SHOWN TO BE CARCINOGENIC IN LABORATORY ANIMALS.
INCOMPATIBILITY	Acids
HAZARDOUS DECOMPOSITION PRODUCTS	Unknown other than CO, CO2 and NOx.
HAZARDOUS POLYMERIZATION	Will not occur.

SECTION 11: SPILL AND DISPOSAL PROCEDURES

LEAK/SPILL: AVOID DIRECT CONTACT WITH MATERIAL. VENTILATE. ELIMINATE ALL SOURCES OF IGNITION. WEAR NIOSH/MSHA APPROVED RESPIRATOR (SELF-CONTAINED BREATHING APPARATUS PREFERRED) AND APPROPRIATE PROTECTIVE EQUIPMENT.CONTAIN THE SPILL. ABSORB WITH INERT MATERIAL. SCRAPE OR SHOVEL INTO CONTAINERS. PREVENT RUNOFF INTO DRAINS, SEWERS, AND OTHER WATERWAYS.

SECTION 12: HANDLING AND STORAGE

DO NOT USE SODIUM NITRITE OR OTHER EQUIPMENT NITROSATING AGENTS IN FORMULATIONS CONTAINING THESE PRODUCT.SUSPECTED CANCER-CAUSING NITROSAMINES COULD BE FORMED. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.AVOID BREATHING VAPOURS.WASH THOROUGHLY AFTER ANDLING.KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME. MINIMUM FEASIBLE HANDLING TEMPERATURES SHOULD BE MAINTAINED. PERIODS OF EXPOSURE TO HIGH TEMPERATURES SHOULD BE MINIMIZED. WATER CONTAMINATION SHOULD BE AVOIDED.

STORAGE NEEDS : DRY INDOOR STORAGE.KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 13: ECOLOGICAL INFORMATION: –

SECTION 14: HAZARDS CLASSIFICATION:

SHIPPING NAME	Environmentally hazardous substance, liquid, n.o.s. (DIETHANOLAMINE)
HAZARD CLASS	9
UN/NA NUMBER	UN 3082
PACKING GROUP	3
SUBSIDIARY HAZARD	

SECTION 15: ACCIDENTAL RELEASE MEASURES:

SECTION 16: OTHER INFORMATION:

Prepared by Marketing and sales service Department