

SOCAR CHEMICAL COMPANY INC

2609 RUTHERFORD RD

GREENVILLE SC 29609

864-244-5068

SAFETY DATA SHEET: **BIO-SAFE 300**

ISSUE DATE: 12-1-15

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: BIO SAFE 300

CHEMICAL FAMILY NAME: DETERGENT ALKALINE NEUTRALIZER

PRODUCT USE: NEUTRALIZER CLEANER

SUPPLIER/MANUFACTURER'S NAME: SOCAR CHEMICAL COMPANY

ADDRESS: 2609 RUTHERFORD RD, GREENVILLE SC 29609

EMERGENCY PHONE: CHEMTREC 1-800-424-9300 CCN695199

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SECTION 2: HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: THIS IS A CLEAR TO AMBER COLOR LIQUID WITH A SLIGHT ODOR.

GHS CLASSIFICATION(S):

| | |
|--|-----------------|
| ACUTE TOXICITY | CATEGORY 4 |
| SKIN CORROSION | CATEGORY 1B |
| SERIOUS EYE DAMAGE | CATEGORY 1 |
| SKIN SENSITIZATION | SUB CATEGORY 1B |
| REPRODUCTIVE TOXICITY | CATEGORY 2 |
| SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY SINGLE EXPOSURE | CATEGORY 3 |
| SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY REPEATED EXPOSURE, INHALATION, LUNGS | CATEGORY 2 |
| ACUTE AQUATIC TOXICITY | CATEGORY 2 |
| CHRONIC AQUATIC TOXICITY | CATEGORY 3 |

GHS CLASSIFICATION SCALE (1=SEVERE; 4=SLIGHT HAZZARD)

SIGNAL WORD: DANGER



HAZARD STATEMENTS:

H227-COMBUSTIBLE LIQUID

H302-HARMFUL IF SWALLOWED

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H314-CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
H317-MAY CAUSE AN ALLERGIC SKIN REACTION
H361F-SUSPECTED OF DAMAGING FERTILITY
H335-MAY CAUSE RESPIRATORY IRRITATION
H373-MAY CAUSE DAMAGE TO ORGANS (LUNGS) THROUGH PROLONGED OR REPEATED EXPOSURE IF INHALED
H401-TOXIC TO AQUATIC LIFE
H412-HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS

PRECAUTIONARY STATEMENTS: PREVENTION

P201-OBTAIN SPECIAL INSTRUCTIONS BEFORE USE
P210-KEEP AWAY FROM HEAT, HOT SURFACES, SPARKS, OPEN FLAMES AND OTHER IGNITION SOURCES. NO SMOKING
P260-DO NOT BREATHE DUST/FUME/GAS/MIST/HOT SURFACES NO SMOKING
P264-WASH HANDS THOROUGHLY AFTER HANDLING
P280-WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION

PRECAUTIONARY STATEMENTS: REPOSE

P370 +P378-IN CASE OF FIRE: USE DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY, OR ALCOHOL-RESISTANT FOAM
P305+P351+P338+P310- IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER OR DOCTOR/PHYSICIAN.
P301+P330+P331- IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE VOMITING.
P304+P340+P311-IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. CALL POISON CENTER OR DOCTOR/PHYSICIAN.
P303+P361+P353-IF ON SKIN (OR HAIR): REMOVE/TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/SHOWER.
P308+P313-IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ATTENTION
P362- TAKE OFF CONTAMINATED CLOTHING AND WASH BEFORE REUSE.

PRECAUTIONARY STATEMENTS: STORAGE

P403+P233 STORE IN WELL-VENTILATED PLACE. KEEP CONTAINER TIGHTLY CLOSED
P235-KEEP COOL

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT | CAS NUMBER | WEIGHT |
|-------------------|-------------------|---------------|
| MONOETHANOLAMINE | 141-43-5 | 83.0-100.0% |
| DIETHANOLAMINE | 111-42-2 | <=0.2% |
| WATER | 7732-18-5 | 13.0-17.0% |

SECTION 4: FIRST AID MEASURES

GENERAL ADVICE: CONSULT A PHYSICIAN/DOCTOR IF NECESSARY. INHALATION OR INGESTIONS MAY CAUSE SYMPTOMS OF CENTRAL NERVOUS DEPRESSION, KIDNEY AND LIVER DAMAGE. TAKE PROPER PRECAUTIONS TO ENSURE OUR OWN HEALTH AND SAFETY BEFORE ATTEMPTING RESCUE AND PROVIDING FIRST AID. FOR SPECIFIC INFORMATION REFER TO THE EMERGENCY OVERVIEW IN SECTION 2 OF THIS SDS. SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.

INHALATION: MOVE THE EXPOSED PERSON TO FRESH AIR AT ONCE. IF BREATHING HAS STOPPED PERFORM ARTIFICIAL RESPIRATION. WHEN BREATHING IS DIFFICULT, PROPERLY TRAINED PERSONNEL MAY ASSIST THE AFFECTED PERSON BY ADMINISTERING OXYGEN.

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KEEP THE AFFECTED PERSON WARM AND AT REST. GET MEDICAL ATTENTION IMMEDIATELY!

SKIN CONTACT: IMMEDIATELY REMOVE EXCESS CHEMICAL AND CONTAMINATED CLOTHING; THOROUGHLY WASH CONTAMINATED SKIN WITH MILD SOAP AND WATER. IF IRRITATION PERSISTS AFTER WASHING, SEEK MEDICAL ATTENTION. THOROUGHLY CLEAN CONTAMINATED CLOTHING BEFORE REUSE; DISCARD CONTAMINATED LEATHER GOODS (GLOVES, SHOES, BELTS, WALLETS, ETC). AFTER CONTACT WITH SKIN WASH IMMEDIATELY WITH PLENTY OF SOAP AND WATER.

EYE CONTACT: IN CASE OF EYE CONTACT, REMOVE CONTACT LENS AND RINSE IMMEDIATELY WITH PLENTY OF WATER, ALSO UNDER THE EYELIDS, FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY IF IRRITATION PERSISTS.

INGESTION: DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. IF SWALLOWED, DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. (IF AVAILABLE, GIVE SEVERAL GLASSES OF MILK) IF VOMITING OCCURS SPONTANEOUSLY, KEEP AIRWAY CLEAR AND GIVE MORE WATER. GET MEDICAL ATTENTION IMMEDIATELY!

NOTES TO PHYSICIAN: SYMPTOMS: MAY CAUSE BURNS OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH. SIGNS AND SYMPTOMS MAY INCLUDE PAIN, NAUSEA, VOMITING, DIARRHEA, DIZZINESS, DROWSINESS, FAINTNESS, WEAKNESS, COLLAPSE AND COMA.

HAZARDS: CORROSIVE CAN CAUSE SEVERE BURNS TO MUCOSAL MEMBRANES, GASTROINTESTINAL MUCOSA, SKIN AND EYES. RISK OF SERIOUS DAMAGE TO THE LUNGS (BY ASPIRATION) MAY BE IRRITATING TO RESPIRATORY SYSTEM. TREAT SYMPTOMATICALLY. TREATMENT OF OVEREXPOSURE SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: 185-199 F (85-93 C) AT 1.013 hPa (760 mm Hg) METHOD (ASTM D93)

AUTOIGNITION TEMPERATURE: 770 F (410 C)

FLAMMABLE LIMITS IN AIR % BY VOLUME: LOWER: 3.0 VOL%
UPPER: 23.5 VOL%

FLAMMABILITY (SOLID GAS): NOT APPLICABLE

EXTINGUISHING MEDIA: SMALL FIRE: USE DRY CHEMICAL, CO₂, WATER SPRAY OR REGULAR FOAM. LARGE FIRE: USE WATER SPRAY, WATER FOG OR REGULAR FOAM. DO NOT USE STRAIGHT STREAMS.

SPECIAL FIRE FIGHTING PROCEDURES: AS THE PRODUCT CONTAINS COMBUSTIBLE ORGANIC INGREDIENTS, FIRE WILL PRODUCE DENSE BLACK SMOKE CONTAINING HAZARDOUS PRODUCTS OF COMBUSTION (SEE SECTION 10). OXIDES OF NITROGEN WILL BE EVOLVED. WATER MAY BE INEFFECTIVE, BUT SHOULD BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL. MOVE CONTAINERS FROM THE FIRE AREA IF IT CAN BE DONE WITHOUT RISK. FOR MASSIVE FIRE, USE UNMANNED HOSE HOLDERS OR MONITOR NOZZLES; IF THIS IS IMPOSSIBLE WITHDRAW FROM AREA AND LET FIRE BURN. ALWAYS STAY AWAY FROM TANKS ENGULFED IN FIRE. COOL CONTAINERS WITH FLOODING QUANTITIES OF WATER UNTIL WELL AFTER FIRE IS OUT. WHEN FIGHTING A FIRE, NOTIFY ENVIRONMENTAL AUTHORITIES IF LIQUID RUNOFF ENTERS SEWERS OR PUBLIC WATERS.

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SPECIAL PROTECTIVE EQUIPMENT: WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (SCBA) STRUCTURAL FIREFIGHTERS PROTECTIVE CLOTHING WITH ONLY PROVIDE LIMITED PROTECTION. FIGHT FIRE FROM A SAFE DISTANCE/PROTECTED LOCATION.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: EVACUATE PERSONNEL TO SAFE AREAS. KEEP PEOPLE AWAY FROM AND UPWIND OF SPILL/LEAK. AVOID DIRECT CONTACT WITH RELEASED MATERIAL. STAY UPWIND. DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL. PREVENT PRODUCT FROM ENTERING DRAINS. PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. USE PERSONAL PROTECTIVE EQUIPMENT. REFER TO PROTECTIVE MEASURES LISTED IN SECTIONS 7 AND 8.

PREVENT ENTRY INTO WATERWAYS, SEWERS, BASEMENTS OR CONFINED AREAS. IF THE PRODUCT CONTAMINATES RIVERS AND LAKES OR DRAINS INFORM RESPECTIVE AUTHORITIES. IF NECESSARY ALL CONTAMINATED WASTE WATER MUST BE TREATED IN A MUNICIPAL OR INDUSTRIAL WASTEWATER TREATMENT PLANT BEFORE RELEASE TO SURFACE WATER. ELIMINATE ALL SOURCES OF IGNITION. ALL EQUIPMENT USED WHEN HANDLING THIS PRODUCT MUST BE GROUNDED. DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. PREVENT ENTRY INTO WATERWAYS, SEWERS, BASEMENTS OR CONFINED AREAS. ABSORB OR COVER WITH DRY EARTH, SAND OR OTHER NON-COMBUSTIBLE MATERIAL AND TRANSFER TO CONTAINERS.

CHEMICAL REMOVAL BY AIR AND WATER POLLUTION CONTROL DEVICES MUST MEET THE MINIMUM EFFICIENCY REQUIREMENTS NEEDED TO REDUCE EXPOSURES TO AN ACCEPTABLE LEVEL. IF NECESSARY ALL CONTAMINATED WASTE WATER MUST BE TREATED IN A MUNICIPAL OR INDUSTRIAL WASTEWATER TREATMENT PLANT BEFORE RELEASE TO SURFACE.

SECTION 7: HANDLING AND STORAGE

HANDLING: USE ONLY IN AREA PROVIDED WITH APPROPRIATE EXHAUST VENTILATION. HANDLE EMPTY CONTAINERS WITH CARE RESIDUE MAY BE COMBUSTIBLE AND BURN IF EXPOSED TO HEAT/SPARKS/OPEN FLAME. IN ADDITION TO THE FIRE/EXPLOSION HAZARD RESIDUAL VAPOR AND LIQUID MAY ALSO BE TOXIC. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. KEEP AWAY FROM HEAT AND SOURCES OR IGNITION. WE RECOMMEND PERSONAL PROTECTIVE EQUIPMENT.

STORAGE: MONOETHANOLAMINE CAN REACT WITH IRON TO FORM AN UNSTABLE MATERIAL THAT CAN DECOMPOSE AT TEMPERATURES ABOVE 130 C IN AIR. USE CAUTION WHEN THAWING DRUMMED MATERIAL. IF STEAM HEATING IS NECESSARY, USE ONLY LOW PRESSURE STEAM AND STAINLESS STEEL COILS. STORE CONTAINERS IN A COOL, DRY, VENTILATED, FIRE RESISTANT AREA AWAY FROM SOURCES OF IGNITION AND INCOMPATIBLE MATERIALS. DO NOT STORE IN ALUMINUM, COPPER, COPPER ALLOYS GALVANIZED CONTAINERS. KEEP CONTAINER TIGHTLY CLOSED AND PROPERLY LABELED.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENTS WITH WORKPLACE CONTROL PARAMETERS:

| INGREDIENTS | CAS # | VALUE | CONTROL PARAMETERS | UPDATE | BASIS |
|-------------------|----------|-------|------------------------------|-----------|------------|
| MONOETHANOLA MINE | 141-43-5 | STEL | 6 ppm | 2012 | US (ACGIH) |
| MONOETHANOLA MINE | 141-43-5 | TWA | 3 ppm | 2012 | US (ACGIH) |
| MONOETHANOLA MINE | 141-43-5 | IDHL | 30 ppm | SEPT 2007 | NIOSH |
| MONOETHANOLA MINE | 141-43-5 | TWA | 3 ppm 6 mg/m ³ | JUNE 2006 | US (OSHA) |
| DIETHANOLAMINE | 111-42-2 | TWA | 1 mg/m ³ | 2012 | US (ACGIH) |

ENGINEERING MEASURES: USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO KEEP AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. EMERGENCY SHOWER AND EYEWASH FACILITY SHOULD BE IN CLOSE PROXIMITY (ANSI Z358.1)

INHALATION: NO OCCUPATIONAL EXPOSURE LIMITS HAVE BEEN DEVELOPED FOR THIS MATERIAL. WHEN WORKERS ARE FACING CONCENTRATIONS ABOVE THE EXPOSURE LIMIT THEY MUST USE APPROPRIATE CERTIFIED RESPIRATORS.

SKIN: WEAR CHEMICAL RESISTANT GLOVES SUCH AS NEOPRENE. WEAR SUITABLE PROTECTIVE CLOTHING. THE EQUIPMENT MUST BE CLEANED THOROUGHLY AFTER EACH USE.

EYES: EYE PROTECTION SUCH AS CHEMICAL SPLASH GOGGLES AND OR FACE SHIELD MUST BE WORN WHEN POSSIBILITY EXISTS FOR EYE CONTACT DUE TO SPLASHING OR SPRAYING LIQUID AIRBORNE PARTICLES OR VAPOR.

VENTILATION: USE ADEQUATE VENTILATION

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: CLEAR TO AMBER LIQUID

ODOR: AMMONIA LIKE

ODOR THRESHOLD (PPM): 2.6 ppm

PH: 12.1 AT 500.00 g/l (AQUEOUS SUSPENSION)

MELTING POINT/FREEZING POINT: <= 50 F (10 C) WATER IS ADDED TO LOW FREEZE GRADES TO DEPRESS FREEZING POINT.

BOILING POINT: 219-340 F (104-171 C) @1013 hPa (760 mm Hg)
11.6 F (-24.2 C) @760 mm Hg

FLASHPOINT: 185-199 F (85-93 C) AT 1,013 hPa (760 mm Hg)

LOWER EXPLOSION LIMIT: 3.0 VOL%

UPPER EXPLOSION LIMIT: 23.5 VOL%

EXPLOSIVE PROPERTIES: NOT EXPLOSIVE

VAPOR PRESSURE: 0.5 hPa (0.4 mm Hg) @ 68 F (20 C)

VAPOR DENSITY (AIR=1): 1.02 g/cm³@ 68 F (20 C) (WATER=1)

RELATIVE DENSITY: 2.1 @ 68 F @ 68 F (20 C) (AIR = 1.0)

SOLUBILITY IN WATER BY WT: 1000 g/l @ 68 F (20 C) (MISCIBLE)

PARTITION COEFFICIENT: N-OCTANOL/WATER: Log Pow: -2 @77 F (25 C)

AUTO-IGNITION TEMPERATURE: 770 F (410 C)

MOLECULAR WEIGHT: 61.08 g/mol

DECOMPOSITION TEMPERATURE: NOT DETERMINED

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VISCOSITY: 23.5 mm²/s @ 68 F (20 C)

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: WILL NOT OCCUR

STABILITY: STABLE UNDER RECOMMENDED STORAGE CONDITIONS

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HIGH TEMPERATURE AND CONTACT WITH MOISTURE

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: STRONG ACIDS, STRONG OXIDIZER. PRODUCT MAY POTENTIALLY REACT WITH VARIOUS HALOGENATED ORGANIC SOLVENTS, RESULTING IN TEMPERATURE AND/OR PRESSURE INCREASES. CORROSIVE WHEN WET. HEATING ABOVE 60 C IN PRESENCE OF ALUMINUM CAN RESULT IN CORROSION AND GENERATION OF FLAMMABLE HYDROGEN GAS, HALOGENATED HYDROCARBONS.

DECOMPOSITION PRODUCTS: CARBON OXIDE (CO, CO₂) AMMONIA AND OXIDES OF NITROGEN.

THERMAL DECOMPOSITON: CARBON OXIDES (CO, CO₂) AMMONIA, OXIDES OF NITROGEN

HAZARDOUS REACTIONS: WILL NOT OCCUR

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

ACUTE ORAL TOXICITY: CLASSIFIED HARMFUL IF SWALLOWED, LD50: 600mg/kg SPECIES: GUINES PIG

ACUTE INHALATION TOXICITY: BASED ON ACUTE TOXICITY VALUES, NOT CLASSIFIED. INHALATION OF VAPORS MAY CAUSE RESPIRATORY DISTRESS AND CNS EFFECTS. LC50: >1.3 mg/l EXPOSURE 6 HOURS, SPECIES: RAT

ACUTE DERMAL TOXICITY: BASED ON ACUTE TOXICITY VALUES, NOT CLASSIFIED DERMAL EXPOSURES MAY RESULT IN CNS DEPRESSION AND DEATH, EFFECTS OF THE RESPIRATORY AND GASTROINTESTINAL TRACTS AND THYMUS, AND SKIN EFFECTS INCLUDING ERYTHEMA, EDEMA, ECCHYMOSES, DESQUAMATION, NECROSIS, ULCERATION, AND SCABBING.

LD50: > 2504 mg/kg SPECIES: RAT

SKIN CORROSION/IRRITATION: CLASSIFIED. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

SERIOUS EYE DAMAGE/EYE IRRITATION: CLASSIFIED. CAUSES SERIOUS EYE IRRITATION

RESPIRATORY OR SKIN SENSITIZATION: RESPIRATORY SENSITIZATION. NOT CLASSIFIED. LIMITED HUMAN DATA SUGGEST THAT THIS SUBSTANCE MAY INDUCE RESPIRATORY REACTIVITY IN A SMALL NUMBER OF INDIVIUALS.

CHRONIC TOXICITY

| COMPONENT NAME | NTP | IARC | OSHA |
|----------------|-----|------|---------|
| DIETHANOLAMINE | | 2B | PRESENT |

CARCINOGENICITY: NOT CLASSIFIED. CONTAINS A SUBSTANCE THAT HAS A POSITIVE CARINOGENICITY STUDY. THE WEIGHT OF EVIDENCE FOR THE CORCINOGENICITY OF THIS SUBSTANCE DOES NOT MEET THE CRIETERIA FOR CLASSIFICATION.

GERM CELL MUTAGENICITY: NOT CLASSIFIED. NO ADVERSE EFFECT OBSERVED

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REPRODUCTIVE TOXICITY INFORMATION: CLASSIFIED. SUSPECTED OF DAMAGING FERTILITY. CONTAINS DIETHANOLAMINE, TOXICITY TO MALE REPRODUCTION MAY OCCUR. TESTICULAR EFFECTS HAVE BEEN FOUND AFTER REPEATED EXPOSURES.

EFFECTS ON DEVELOPMENT: NOT CLASSIFIED. NO ADVERSE EFFECT OBSERVED
TARGET ORGAN SYSTEMIC: ROUTES OF EXPOSURE: INHALATION

TOXICANT SINGLE EXPOSURE: TARGET ORGANS: RESPIRATORY SYSTEM. CLASSIFIED MAY CAUSE RESPIRATORY IRRITATION.
TARGET ORGAN SYSTEMIC: TOXICANT REPEATED EXPOSURE: ROUTES OF EXPOSURE: INHALATION TARGET ORGANS LIVER, KIDNEY.
ASPIRATION: BASED ON PHYSICAO-CHEMICAL VALUES OR LACK OF HUMAN EVIDENCE, NOT CLASSIFIED.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGY ASSESSMENT:

EFFECTS OF CHEMICAL ON AQUATIC LIFE: CLASSIFIED TOXIC TO AQUATIC LIFE.
CHRONIC AQUATIC TOXICITY: CLASSIFIED HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

TOXICITY TO FISH: ACUTE TOXICITY TO FISH IS VERY LOW

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES:

MONOETHANOLAMINE: EC50: 65 mg/l, EXPOSURE TIME: 48 HOURS, SPECIES: DAPHNIA MAGNA, IMMOBILIZATION MODERATELY TOXIC TO AQUATIC INVERTEBRATES

DIETHANOLAMINE: EC50:55 mg/l, EXPOSURE TIME: 48 HOURS SPECIES: DAPHNIA MAGNA. IMMOBILIZATION MODERATELY TOXIC TO AQUATIC INVERTEBRATES.

TOXICITY TO ALGAE:

MONOETHANOLAMINE: EC50: 65 mg/l, EXPSOURE 72 HOURS, SPECIES: PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE), GROWTH INHIBITION, NOEC: 1.0 mg/l, TOXIC TO ALGAE.

DIETHANOLAMINE: EC50: 2.2 mg/l, EXPOSURE TIME 96 HOURS, SPEICES: PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE), GROWTH INHIBITION, TOXIC TO ALGAE.

TOXICITY TO BACTERIA: LOW TOXICITY TO SEWAGE MICROBES

TOXICITY TO FISH (CHRONIC TOXICITY): MONOETHANOLAMINE: NOEC: 1.2 mg/l, EXPOSURE TIME 30 D, SPECIES: ORYZIAS LATIPES

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES (CHRONIC TOXICITY):

MONOETHANOLAMINE: NOEC: 0.85 mg/l, EXPOSURE 21D, SPECIES: DAPHNIA MAGNA, REPRODUCTION TEST: HARMFUL TO AQUATIC INVERTEBRATES (CHRONIC EXPSOURE).

DIETHANOLAMINE: NOEC: 0.78 mg/l, EXPOSURE 21D, SPECIES: DAPHNIA MAGNA, REPRODUCTION TEST: HARMFUL TO AQUATIC INVERTEBRATES (CHRONIC EXPSOURE).

BIODEGRADABILITY: $\geq 70\%$, RAPIDLY DEGRADABLE. (AFTER 28 DAYS IN A READY BIODEGRADABILITY TEST)

BIOACCUMULATION POTENTIAL: NOT EXPECTED TO BIOACCUMULATE IN AQUATIC ORGANISMS.

MOBILITY IN SOIL

DISTRIBUTION AMONG ENVIRONMENTAL COMPARTMENTS: STABILTIY IN SOIL: NO DATA AVAIALBLE. LOW POTENTIAL FOR SOIL ADSORPTION EXPECTED
STABILITY IN WATER: HYDROLYSIS EXPECTED TO BE VERY SLOW. HALF LIFE>1 YEAR (QSAR CALCULATED VALUE)

EFFECT OF MATERIAL ON PLANTS OR ANIMALS: NO ADDITIONAL INFORMATION AVAILABLE.

SECTION 13: DISPOSAL CONSIDERATIONS

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PREPARING WASTES FOR DISPOSALS: DO NOT DISPOSE OF WASTE INTO SEWER. DO NOT CONTAMINATE PONDS WATERWAYS OR DITCHES WITH CHEMICAL OR USED CONTAINER. DISPOSE OF AS HZARDOUS WASTE IN COMPLIANCE WITH LOCAL AND NATIONAL REGULATIONS. THE PRODUCT SHOULD NOT BE ALLOWED TO ENTER DRAINS, WATER COURSES OR THE SOIL. INCINERATE CONCENTRATED LIQUIDS IN COMPLIANCE WITH LOCAL, STATE OR INTERNATIONAL REGULATIONS. CONTAMINATED PRODUCT, SOIL, WATER, CONTAINER RESIDUES AND SPILL CLEANUP MATERIALS MAY BE HAZARDOUS WASTES. COMPLY WITH APPLICABLE LOCAL, STATE OR INTERNATIONAL REGULATIONS CONCERNING SOLID OR HAZARDOUS WASTE DISPOSAL AND OR CONTAINER DISPOSAL. EMPTY REMAINING CONTENTS. DISPOSE OF AS UNUSED PRODUCT. DO NOT REUSE EMPTY CONTAINERS. DO NOT BURN OR USE A CUTTING TORCH ON THE EMPTY DRUM

SECTION 14: TRANSPORT INFORMATION

UN NUMBER: UN2491

PROPER SHIPPING NAME: ETHANOLAMINE

HAZARD CLASS NUMBER AND DESCRIPTION: 8

PACKING GROUP: III

DOT LABELS REQUIRED: 8

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004)

SECTION 15: REGULATORY INFORMATION

NOTIFICATION:

ALL INGREDIENTS ARE ON THE FOLLOWING INVENTORIES OR ARE EXEMPTED FROM LISTING

| COUNTRY | NOTIFICATION | STATUS DESCRIPTION |
|--------------------------|--------------|--------------------|
| AUSTRALIA | AICS | COMPLIANT |
| CANADA | DSL | COMPLIANT |
| CHINA | IECS | COMPLIANT |
| EUROPEAN UNION | EINECS | |
| JAPAN | ENCS/ISHL | COMPLIANT |
| KOREA | ECL | COMPLIANT |
| PHILIPPINES | PICCS | COMPLIANT |
| UNITED STATES OF AMERICA | TSCA | COMPLIANT |
| NEW ZEALAND | NZIOC | COMPLIANT |

IF IDENTIFIED COMPONENTS OF THIS PRODUCT ARE UNDER THE TSCA 12 (B) EXPORT NOTIFICATION RULE, THEY WILL BE LISTED BELOW.

SARA 302/304

DIETHANOLAMINE 100LBS

SARA 311/312

BASED UPON AVAILABLE INFORMATION, THIS MATERIAL IS CLASSIFIED AS THE FOLLOWING HEALTH AND OR PHYSICAL HAZARDS ACCORDING TO SECTION 311&312: FIRE HAZARD: IMMEDIATE (ACUTE) HEALTH HAZARD, DELAYED (CHRONIC) HEALTH HAZARD

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SARA 313

THIS MATERIAL CONTAINS THE FOLLOWING CHEMICAL SUBSTANCE WHICH IS KNOWN CAS NUMBERS THAT EXCEED THE DEMINIMIS REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313 AND 40 CFR 372. COMPONENTS: DIETHANOLAMINE 1.0%

STATE REPORTING

THIS MATERIAL CONTAINS THE FOLLOWING CHEMICAL SUBSTANCE WHICH IS REGULATED UNDER CALIFORNIA PROPOSITION 65. HOWEVER, IT IS THE RESPONSIBILITY OF THE CALIFORNIA BUSINESS OWNER TO DEVELOP HIS OR HER OWN REGULATORY COMPLIANCE PLAN.

| SUBSTANCE | CASRN | TYPE OF TOXICITY | | | |
|----------------|----------|------------------|---------------|------------|--------------|
| | | CARCINOGEN | DEVELOPMENTAL | REPRO-MALE | REPRO-FEMALE |
| DIETHANOLAMINE | 111-42-2 | X | | | |

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL REGULATED BY NEW JERSEY'S WORKER AND COMMUNITY RIGHT TO KNOW ACT:

141-43-5 MONOETHANOLAMINE
111-42-2 DIETHANOLAMINE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS REGULATED BY MASSACHUSETTS RIGHT TO KNOW LAW.

141-43-5 MONOETHANOLAMINE
111-42-2 DIETHANOLAMINE

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICALS REGULATED BY PENNSYLVANIA'S RIGHT TO KNOW ACT.

141-43-5 MONOETHANOLAMINE
111-42-2 DIETHANOLAMINE

OTHER INTERNATIONAL REGULATIONS

GLOBAL INVENTORY STATUS:

THE INGREDIENTS OF THIS PRODUCT ARE COMPLIANT WITH THE FOLLOWING CHEMICAL INVENTORY REQUIREMENTS OR EXEMPTIONS.

*ADDITIONAL EXPLANTORY STAU STATEMENTS FOLLOW THE TABLE AS NECESSARY:

| COUNTRY/REGION | INVENTORY | STATUS DESCRIPTION |
|----------------|-----------|--------------------------------|
| AUSTRALIA | AICS | COMPLIANT |
| CANADA | DSL | COMPLIANT |
| CHINA | IECSC | COMPLIANT |
| EUROPE | REACH | SEE REACH COMPLIANCE STATEMENT |
| JAPAN | ENCS | COMPLIANT |
| KOREA | KECI | COMPLIANT |
| NEW ZEALAND | NZIoC | COMPLIANT |
| PHILIPPINES | PICCS | COMPLIANT |

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SECTION 16: OTHER INFORMATION

HMIS RATING: HEALTH: 3
FLAMMABILITY: 2
REACTIVITY: 0
PERSONAL PROTECTION: 0

PREPARED BY: DAWN STYLES, SOCAR CHEMICAL

DATE OF LAST REVISION: December 2015

DISCLAIMER: TO THE BEST OF SOCAR CHEMICAL'S KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS RELIABLE AND ACCURATE AS OF THIS DATE; HOWEVER, ACCURACY, SUITABILITY OR COMPLETENESS IS NOT GUARANTEED AND NO WARRANTIES OF ANY TYPE EITHER EXPRESS OR IMPLIED ARE PROVIDED. THE INFORMATION CONTAINED HEREIN RELATES ONLY TO THIS SPECIFIC PRODUCT.