

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TE-300

MANUFACTURER: *de neef* Construction Chemicals Inc.
ADDRESS: 5610 Brystone Drive
Houston, TX 77095
PHONE: (800) 732-0166 (7am-5pm CST Weekdays)
FAX: (713) 849-3340
WEBSITE: www.deneef.com

EMERGENCY PHONE: CHEMTREC (800) 424-9300 (Anytime)
Outside US: 1-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Color: Colorless to yellow

Physical State: Liquid

Odor: Ammoniacal

Hazards of product:

CAUTION! Causes eye irritation. May cause skin irritation.

POTENTIAL HEALTH EFFECTS

Eye Contact: May cause moderate eye irritation. May cause moderate corneal injury.

Skin Contact: Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Effects of Repeated Exposure: In animals, effects have been reported on the following organs:

Kidney. Liver. Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high

5610 Brystone Dr. Houston, Texas 77041

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SECTION 2: HAZARDS IDENTIFICATION (continued)

doses of diethanolamine given. Cancer Information: Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. Birth Defects/Developmental Effects: Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother.

SECTION 3: HAZARDOUS INGREDIENTS

<u>Name</u>	<u>CAS NO.</u>	<u>% wt/wt</u>
Triethanolamine	102-71-6	≤ 74.0 %
Water	7732-18-5	≤ 15.0 %
N,N-Diethanolamine	111-42-2	≤ 11.0 %

SECTION 4: FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

SECTION 5: FIRE-FIGHTING MEASURES (continued)

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Non-combustible material. Sand. Clay. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

SECTION 7: HANDLING AND STORAGE

Handling

General Handling: Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store in the following material(s): Stainless steel. Do not store in: Galvanized steel. Copper. Copper alloys. Zinc.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Component	List	Type	Value
Triethanolamine	ACGIH	TWA	5 mg/m ³
N,N-Diethanolamine	ACGIH	TWA	2 mg/m ³ SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless to yellow liquid	pH: Not Known
ODOR: Ammoniacal	FREEZING PT: -42 C
ODOR THRESHOLD: Not known	FLASH POINT: Not available
PHYSICAL STATE: Liquid	LOWER FLAMMABILITY LIMITS: Not available
EVAPORATION RATE: 0.7 (BUTYL ACETATE=1)	VAPOR PRESSURE: 0.96 kPa @20 C
FLAMMABILITY: Not available	VAPOR DENSITY: 2.4
UPPER FLAMMABILITY LIMITS: Not available	BOILING POINT: 118 C

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES(continued)

SPECIFIC GRAVITY: 1.119

AUTO-IGNITION TEMPERATURE: >450°C

SOLUBILITY (H₂O): 100% @ 20c

VISCOSITY: 150 mPas @ 25 C

PARTITION COEFFICIENT: Not available

DECOMPOSITION TEMPERATURE: Not available

SECTION 10: STABILITY AND REACTIVITY

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Avoid contact with metals such as: Aluminum. Copper. Copper alloys. Galvanized metals. Zinc. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

Hazardous Polymerization Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Ingestion

LD50, Rat > 4,000 mg/kg

Skin Absorption

LD50, Rabbit > 2,000 mg/kg

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Kidney. Liver. Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.

SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Chronic Toxicity and Carcinogenicity

Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. A number of factors may have influenced the results and are being considered in their interpretation. The data presented are for the following material: Triethanolamine. Did not cause cancer in laboratory animals.

Developmental Toxicity

Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother. For the major component(s): Triethanolamine. Screening studies in animals suggest that this material does not affect fetal development.

Reproductive Toxicity

No relevant information found.

Genetic Toxicology

In vitro genetic toxicity studies were negative. For the component(s) tested: Animal genetic toxicity studies were negative.

SECTION 12: ECOLOGICAL INFORMATION

Data for Component: Triethanolamine

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Henry's Law Constant (H): 1.91E-4 atm*m3/mole Measured Partition coefficient, n-octanol/water (log Pow): -1.00 Measured Partition coefficient, soil organic carbon/water (Koc): 3 Estimated Bioconcentration Factor (BCF): < 3.9; common carp (Cyprinus carpio); Measured Distribution in Environment: Mackay Level 1 Fugacity Model:

Persistence and Degradability

Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). Material is not readily biodegradable according to OECD/EC guidelines.

Data for Component: **N,N-Diethanolamine**

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

SECTION 12: ECOLOGICAL INFORMATION (continued)

ECOTOXICITY

Data for Component: **Triethanolamine**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*), 96 h: 1,800 - 11,800 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 24 h: 739 - 2,038 mg/l

Aquatic Plant Toxicity

EC50, alga *Scenedesmus* sp., biomass growth inhibition: 470 - 750 mg/l

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition: > 1,000 mg/l
 EC50; bacteria, Growth inhibition (cell density reduction), 16 h: > 5,000 mg/l

Aquatic Invertebrates Chronic Toxicity Value:

ChV Value mg/l	Species	Test Type	Endpoint	Exposure Time
22 mg/l	water flea <i>Daphnia magna</i>	static renewal	number of offspring	21 d

Data for Component: **N,N-Diethanolamine**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Fish Acute & Prolonged Toxicity

LC50, bluegill (*Lepomis macrochirus*), static: 1,850 - 2,100 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 48 h: 122 mg/l

Aquatic Plant Toxicity

EC50, green alga *Selenastrum capricornutum*, biomass growth inhibition, 96 h: 3.3 - 3.6 mg/l

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: > 1,000 mg/l

SECTION 13: DISPOSAL CONSIDERATIONS

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics.

SECTION 14: TRANSPORT INFORMATION

DOT Non-Bulk
NOT REGULATED

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	<= 11.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Triethanolamine	102-71-6	<= 74.0 %
N,N-Diethanolamine	111-42-2	<= 11.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	<= 11.0 %
Ethylene glycol	107-21-1	<= 0.1 %
Chromium	7440-47-3	<= 0.36 PPM
Nickel	7440-02-0	<= 0.21 PPM
Cadmium	7440-43-9	<= 0.014 PPM

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MATERIAL SAFETY DATA SHEET

TE-300

Rev. 04/08

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Component	CAS #	Amount
Nickel	7440-02-0	<= 0.206 PPM
Cobalt	7440-48-4	<= 0.016 PPM

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

Component	CAS #	Amount
Cadmium	7440-43-9	<= 0.014 PPM
Cadmium	7440-43-9	<= 0.014 PPM

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	1	1

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION:

April, 2008

This MSDS is on a three year review cycle. If the date on this sheet is older than three years please contact *de neef* Construction Chemicals Inc. for an updated MSDS.

DISCLAIMER:

All information appearing herein is based on manufacturer and/ or recognized technical sources. While the information is believed accurate *de neef* Construction Chemicals Inc. makes no representations as to the accuracy or sufficiency of the information.