GE
Water & Process Technologies

Material Safety Data Sheet

Issue Date: 20-DEC-2007
Supercedes: 20-DEC-2007

LIQUICLEAN 511

1 Identification

Identification of substance or preparation
LIQUICLEAN 511

Product Application Area
Membrane cleaner

Company/Undertaking Identification
GE Betz, Inc.
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Trevose, PA 19053
T 215 355-3300, F 215 953 5524

Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 20-DEC-2007

2 Hazard(s) identification

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EMERGENCY OVERVIEW

DANGER

Severe irritant to the skin. Severe irritant to the eyes, possibly corrosive. Irritation of the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

DOT hazard: ORS (when container > RQ)
Odor: Slight; Appearance: Colorless To Amber, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus(full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water
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POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:
Primary route of exposure; Severe irritant to the skin.

ACUTE EYE EFFECTS:
Severe irritant to the eyes, possibly corrosive.

ACUTE RESPIRATORY EFFECTS:
Primary route of exposure;Irritation of the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

INGESTION EFFECTS:
May cause gastrointestinal irritation with possible nausea, vomiting, abdominal discomfort and diarrhea.

TARGET ORGANS:
Prolonged or repeated exposure may cuses primary irritant dermatitis and/or toxicity to the liver, kidney, nervous system and blood. May increase the risk of cancer based on limited animal data.

MEDICAL CONDITIONS AGGRAVATED:
Pre-existing skin disorders and chronic respiratory disease.

SYMPTOMS OF EXPOSURE:
Causes irritation of the skin, eyes, and/or respiratory system.

3 Composition / information on ingredients

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

Cas#	Chemical Name	Range(w/w%)
5064-31-3	NITRILOTRIACETIC ACID,TRISODIUM SALT (NTA.3NA) Possible human carcinogen (IARC=2B; NTP=anticipated)	0.1-1.0
139-89-9	N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT Irritant (eyes)	15-40
102-71-6	TRIETHANOLAMINE Irritant (eyes and skin); potential liver and kidney toxin; in vitro mutagen; causes tumors of liver following applications to the skin of experimental animals	15-40
141-43-5	MONOETHANOLAMINE (ETHANOLAMINE) Combustible; corrosive; irritant; CNS depressant; may cause liver and kidney toxicity; in vitro mutagen; fetotoxic and developmental toxin in laboratory animals	10-20
111-42-2	DIETHANOLAMINE (ETHANOL,2,2'-IMINODI-) Irritant (eyes); absorbed by skin; IARC=3 (carcinogen status not classifiable); potential blood, nervous system, liver and kidney toxin	3-7
119345-04-9	BENZENE, 1,1'-OXYBIS-,TETRAPROPYLENE DERIVATIVES, SULFONATED, SODIUM SALTS Severe irritant (eyes)	1-5

4 First-aid measures

SKIN CONTACT:
Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:
URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:
If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:
Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 2-8 fluid ounces (60-240 mL) of milk or water.

NOTES TO PHYSICIANS:
No special instructions

5 Fire-fighting measures

FIRE FIGHTING INSTRUCTIONS:
Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:
dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:
oxides of carbon, nitrogen and sulfur; hydrogen chloride; ammonia and volatile amines

FLASH POINT:
> 200F > 93C P-M(CC)

MISCELLANEOUS:
ORS (when container > RQ)
NA 3082;Emergency Response Guide #171

6 Accidental release measures

PROTECTION AND SPILL CONTAINMENT:
Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:
Water contaminated with this product may be sent to a sanitary sewer treatment facility,in accordance with any local agreement,a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 Handling and storage

HANDLING:
Normal chemical handling.

STORAGE:
Keep containers closed when not in use. Protect from freezing. If frozen, thaw and mix completely prior to use. Shelf life 270 days.

8 Exposure controls / personal protection

EXPOSURE LIMITS

CHEMICAL NAME

NITRILOTRIACETIC ACID,TRISODIUM SALT (NTA.3NA)
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

N-HYDROXYETHYLENEDIAMINE TRIACETIC ACID TRISODIUM SALT
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

TRIETHANOLAMINE
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): 5 MG/M3

MONOETHANOLAMINE (ETHANOLAMINE)
PEL (OSHA): 3 PPM(6PPM-STEL)
TLV (ACGIH): 3PPM-SKIN(6PPM-STEL-SKIN)

DIETHANOLAMINE (ETHANOL,2,2'-IMINODI-)
PEL (OSHA): 3 PPM
TLV (ACGIH): 2 MG/M3-(SKIN)

BENZENE, 1,1'-OXYBIS-,TETRAPROPYLENE DERIVATIVES, SULFONATED, SODIUM SALTS
PEL (OSHA): NOT DETERMINED
TLV (ACGIH): NOT DETERMINED

8) EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

ENGINEERING CONTROLS:
Adequate ventilation to maintain air contaminants below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:
Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.
USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.
If air-purifying respirator use is appropriate, use organic vapor cartridges and any of the following particulate respirators: N95, N99, N100, R95, R99, R100, P95, P99 or P100.

SKIN PROTECTION:
rubber, butyl, viton or neoprene gloves -- Wash off after each use. Replace as necessary.

EYE PROTECTION:
splash proof chemical goggles

9 Physical and chemical properties

Specific Grav.(70F,21C)	1.197	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	23	Vapor Density (air=1)	~ 5.00
Freeze Point (C)	-5		
Viscosity(cps 70F,21C)	99	% Solubility (water)	100.0

Odor Slight

Appearance		Colorless To Amber
Physical State		Liquid
Flash Point	P-M(CC)	> 200F > 93C
pH As Is (approx.)		10.9
Evaporation Rate (Ether=1)		< 1.00
Percent VOC:		36.0

NA = not applicable ND = not determined

10 Stability and reactivity

STABILITY:
Stable under normal storage conditions.
HAZARDOUS POLYMERIZATION:
Will not occur.
INCOMPATIBILITIES:
May react with strong oxidizers.
DECOMPOSITION PRODUCTS:
oxides of carbon, nitrogen and sulfur; hydrogen chloride; ammonia and volatile amines
INTERNAL PUMPOUT/CLEANOUT CATEGORIES:
"B"

11 Toxicological information

Oral LD50 RAT:	>2,000 mg/kg
NOTE - Estimated value	
Dermal LD50 RABBIT:	>2,000 mg/kg
NOTE - Estimated value	

12 Ecological information

AQUATIC TOXICOLOGY
Daphnia magna 48 Hour Static Renewal Bioassay (pH adjusted)
LC50= 342; No Effect Level= 250 mg/L
Fathead Minnow 96 Hour Static Renewal Bioassay (pH adjusted)
LC50= 61.6; No Effect Level= 25 mg/L

BIODEGRADATION
BOD-28 (mg/g): 142
BOD-5 (mg/g): 130
COD (mg/g): 805
TOC (mg/g): 242

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 Transport information

DOT HAZARD: ORS (when container > RQ)
PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(DIETHANOLAMINE SOLUTION)
9, NA 3082, PG III, RQ
DOT EMERGENCY RESPONSE GUIDE #: 171
Note: Some containers may be DOT exempt, please check BOL for exact container classification

15 Regulatory information

TSCA:
All components of this product are included on or are in compliance with the U.S. TSCA regulations.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):
239 gallons due to DIETHANOLAMINE (ETHANOL,2,2'-IMINODI-);

SARA SECTION 312 HAZARD CLASS:
Immediate(acute);Delayed(Chronic)

SARA SECTION 302 CHEMICALS:

CAS#	CHEMICAL NAME
7647-01-0	HYDROCHLORIC ACID

SARA SECTION 313 CHEMICALS:

CAS#	CHEMICAL NAME	RANGE
111-42-2	DIETHANOLAMINE (ETHANOL,2,2'-IMINODI-)	2.0-5.0%
7647-01-0	HYDROCHLORIC ACID	0.1-1.0%

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):
This product contains one or more ingredients known to the state of California to cause cancer.

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

NFPA/HMIS		CODE TRANSLATION
Health	3	Serious Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles,Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES

MSDS status:	10-MAR-2000		** NEW **
	06-JUL-2000	12	10-MAR-2000
	03-JAN-2001	2,3,8,15	06-JUL-2000
	01-APR-2004	15	03-JAN-2001
	21-JUN-2006	3,5,14	01-APR-2004
	20-DEC-2007	4,5,7,8,10	21-JUN-2006