



Material Safety Data Sheet

Issue Date: 01-AUG-2012
Supercedes: 26-JUL-2012

PETROFLO 21Y21

1 Identification

Identification of substance or preparation
PETROFLO 21Y21

Product Application Area
Neutralizing amine.

Company/Undertaking Identification
GE Betz, Inc.
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Emergency Telephone
(800) 877-1940

Prepared by Product Stewardship Group: T 215-355-3300 Prepared on: 01-AUG-2012

2 Hazard(s) identification

EMERGENCY OVERVIEW

DANGER

Corrosive. Absorbed by skin. Corrosive to the eyes. Vapors, gases, mists and/or aerosols cause irritation to the upper respiratory tract.

DOT hazard: Corrosive to skin
Odor: Strong Ammonia; Appearance: Colorless To Light Yellow, Liquid

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

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; Corrosive. Absorbed by skin.

ACUTE EYE EFFECTS:

Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:

Primary route of exposure;Vapors, gases, mists and/or aerosols cause irritation to the upper respiratory tract.

INGESTION EFFECTS:

May cause severe irritation or burning of mouth, throat, and gastrointestinal tract with severe chest and abdominal pain, nausea, vomiting, diarrhea, lethargy and collapse. Possible death when ingested in large doses or aspirated.

TARGET ORGANS:

Prolonged or repeated exposures may cause tissue necrosis and/or toxicity to the liver, kidney, nervous system, and blood system.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

Inhalation may cause irritation of mucous membranes and respiratory tract. Skin contact causes severe irritation or burns.

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. This product is subject to the Pennsylvania and New Jersey Worker and Community Right to Know Law.

HAZARDOUS INGREDIENTS:

| Cas# | Chemical Name | Range (w/w%) |
|----------|--------------------------------------------|--------------|
| 141-43-5 | MONOETHANOLAMINE Combustible; corrosive | 60-100 |

NON-HAZARDOUS INGREDIENTS:

| CAS# | CHEMICAL NAME |
|-----------|---------------|
| 7732-18-5 | WATER |

4 First-aid measures

SKIN CONTACT:

URGENT! Wash thoroughly with soap and water for at least 30 minutes. Remove contaminated clothing. Get immediate medical attention. Thoroughly wash clothing before reuse.

EYE CONTACT:

URGENT! Immediately flush eyes with water for 30 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:

Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Rinse mouth with plenty of water. Dilute contents of stomach using 4-10 fluid ounces (120-300 mL) of milk or water.

NOTES TO PHYSICIANS:

Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Aspiration into the lungs will result in chemical pneumonia and may be fatal.

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 or foam--Avoid water if possible.

HAZARDOUS DECOMPOSITION PRODUCTS:

oxides of carbon and nitrogen

FLASH POINT:

> 200F > 93C P-M(CC)

MISCELLANEOUS:

Corrosive to skin
UN 2491;Emergency Response Guide #153

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. Remove ignition sources. Flush area with water. 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:

Alkaline. Corrosive (Skin/eyes). Do not mix with acidic material.

STORAGE:

Store below 100F (38C). Keep containers closed when not in use. Protect from freezing. If frozen, thaw and mix completely prior to use. Avoid atmospheric exposure.

8 Exposure controls / personal protection

EXPOSURE LIMITS**CHEMICAL NAME**

MONOETHANOLAMINE

PEL (OSHA): 3 PPM (6 MG/M3)

TLV (ACGIH): TWA = 3 PPM; STEL = 6 PPM

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 a respirator with organic vapor cartridges.

SKIN PROTECTION:

gauntlet-type rubber or neoprene gloves, chemical resistant apron -- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles, face shield

9 Physical and chemical properties

| | | | |
|----------------------------|---------------------------|-----------------------|--------|
| Density | 8.6 lbs/gal | Vapor Pressure (mmHG) | < 1.0 |
| Freeze Point (F) | < -30 | Vapor Density (air=1) | > 1.00 |
| Freeze Point (C) | < -34 | | |
| Viscosity(cps 70F,21C) | 25 | % Solubility (water) | 100.0 |
| Odor | Strong Ammonia | | |
| Appearance | Colorless To Light Yellow | | |
| Physical State | Liquid | | |
| Flash Point | P-M(CC) | > 200F | > 93C |
| pH As Is (approx.) | > 13.0 | | |
| Evaporation Rate (Ether=1) | < 1.00 | | |
| Percent VOC: | 80.0 | | |

NA = not applicable ND = not determined

10 Stability and reactivity

CHEMICAL STABILITY:

Stable under normal storage conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

Contact with strong acids may cause a violent reaction releasing heat and ammonia.

INCOMPATIBILITIES:

May react with acids or strong oxidizers.

DECOMPOSITION PRODUCTS:

oxides of carbon and nitrogen

11 Toxicological information

| | |
|-------------------------|------------|
| Oral LD50 RAT: | 1960 mg/kg |
| NOTE - Calculated value | |
| Dermal LD50 RABBIT: | 1560 mg/kg |
| NOTE - Calculated value | |

12 Ecological information

AQUATIC TOXICOLOGY

Bluegill Sunfish 96 Hour Static Acute Bioassay
LC50= 330 mg/L
Daphnia magna 48 Hour Flow-Thru Bioassay
LC50= 135; No Effect Level= 31 mg/L
Fathead Minnow 96 Hour Flow-Thru Bioassay
0% Mortality= 500; 10% Mortality= 1000 mg/L
Rainbow Trout 96 Hour Static Acute Bioassay
LC50= 150 mg/L

BIODEGRADATION

BOD-28 (mg/g): 503
BOD-5 (mg/g): 503
COD (mg/g): 1120
TOC (mg/g): 304

13 Disposal considerations

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH).

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

Transportation Hazard: Corrosive to skin

DOT: ETHANOLAMINE SOLUTION
8, UN2491, PG III

DOT EMERGENCY RESPONSE GUIDE #: 153

Note: Some containers may be DOT exempt, please check BOL for exact container classification

IATA: ETHANOLAMINE SOLUTION
8, UN2491, PG III

IMDG: ETHANOLAMINE SOLUTION
8, UN2491, PG III

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):

No regulated constituent present at OSHA thresholds

NSF Registered and/or meets USDA (according to 1998 Guidelines):

Registration number: Not Registered

SARA SECTION 312 HAZARD CLASS:

Immediate(acute);Delayed(Chronic)

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

No regulated constituents present
MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 Other information

| HMIS vII | | CODE TRANSLATION |
|--------------------------|------|----------------------------------|
| Health | 3 | Serious Hazard |
| Fire | 1 | Slight Hazard |
| Reactivity | 0 | Minimal Hazard |
| Special | CORR | DOT corrosive |
| (1) Protective Equipment | D | Goggles,Face Shield,Gloves,Apron |

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

CHANGE LOG

| | EFFECTIVE DATE | REVISIONS TO SECTION: | SUPERCEDES |
|--------------|-------------------|-----------------------|-------------|
| | ----- | ----- | ----- |
| MSDS status: | 31-DEC-2009 | | ** NEW ** |
| | 13-APR-2010 | 2, 4, 5, 6, 8, 10, 11 | 31-DEC-2009 |
| | 26-JUL-2012 | 2, 4, 5, 6, 8, 10, 11 | 13-APR-2010 |
| | 01-AUG-2012 | 2, 4, 5, 6, 8, 10, 11 | 26-JUL-2012 |