



SAFETY DATA SHEET

PETROFLO* 21Y23

1. Product and Company Identification

Material name PETROFLO 21Y23
Version # 2.0
Revision date Sep-19-2014
Supersedes date Sep-07-2011
Chemical description Neutralising amine
CAS # Mixture
Product application Neutralizer

Company/undertaking identification

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
T 215 355 3300, F 215 953 5524

Emergency telephone

(800) 877 1940

2. Hazards Identification

Emergency overview

Severe irritant to the skin. Absorbed by skin. Corrosive to the eyes. Vapors, gases, mists and/or aerosols cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

Potential health effects

Eyes Corrosive to eyes
Skin Primary route of exposure Severe irritant to the skin. Absorbed by skin
Inhalation Primary route of exposure Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.
Ingestion May cause severe gastrointestinal irritation with possible nausea, vomiting, headache, dizziness, unconsciousness and injury to kidneys and liver.

Target organs

Prolonged or repeated exposures may cause toxicity to the liver and kidney.

Signs and symptoms

Inhalation may cause lightheadedness, slurred speech, nausea and vomiting (pulmonary oedema may result).
Skin contact may cause severe irritation or burns.

3. Composition / Information on Ingredients

Components	CAS #	Percent
AMINO ETHER	TSRN 125438 - 5183P	

4. First Aid Measures

First aid procedures

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.
Skin contact Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Immediately contact a physician.

Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Seek medical attention.
Ingestion	Do not feed anything by mouth to an unconscious or convulsive victim. Do NOT induce vomiting! Seek medical attention. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media	Carbon dioxide, dry chemicals, foam, water spray (fog).
Unsuitable extinguishing media	None.

Protection of firefighters

Specific hazards arising from the chemical	Oxides of carbon and nitrogen evolved in fire.
Protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire fighting

equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Non flammable liquid

6. Accidental Release Measures

Personal precautions

Wear appropriate protective equipment and clothing during clean-up. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

Other information

Ventilate area, use specified protective equipment. Contain and absorb on absorbent material (e.g. sand). Place in waste disposal container.

7. Handling and Storage

Handling

Alkaline. corrosive to the eyes Do not mix with acidic material.

Storage

Store containers closed when not in use.
Store in cool, well ventilated area.
Store away from oxidizers.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
AMINO ETHER (CAS TSNR 125438 - 5183P)	TWA	20 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
AMINO ETHER (CAS TSNR 125438 - 5183P)	PEL	70 mg/m ³
		20 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US. ACGIH Threshold Limit Values

AMINO ETHER (CAS TSNR 125438 - 5183P) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

MORPHOLINE; TETRAHYDRO-4H-1, 4-OXAZINE (CAS TSNR 125438 - 5183P) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

AMINO ETHER (CAS TSNR 125438 - 5183P) Skin designation applies.

US. NIOSH: Pocket Guide to Chemical Hazards

AMINO ETHER (CAS TSNR 125438 - 5183P) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

AMINO ETHER (CAS TSNR 125438 - 5183P) Can be absorbed through the skin.

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A

AMINO ETHER (CAS TSNR 125438 - 5183P)

Can be absorbed through the skin.

Engineering controls	Adequate ventilation to maintain air contaminants below exposure limits. Arrange for eye wash possibility.
Personal protective equipment	
Eye / face protection	Splash proof chemical goggles. Face shield.
Skin protection	Chemical resistant apron.
Respiratory protection	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. In case of insufficient ventilation, use a breathing mask with filter type: A2-P2
General hygiene considerations	Wash hands after handling.

9. Physical & Chemical Properties

Appearance

Physical state	Liquid
Color	Colorless to yellow
Odor	Amine
Odor threshold	Not available.
pH (concentrated product)	12.1
Vapor pressure	15 mm Hg
Vapor pressure temp.	70 °F (21 °C)
Vapor density	> 1 (Air = 1)
Boiling point	220 °F (104 °C)
Melting point/Freezing point	-6 °F (-21 °C)
Solubility (water)	100 %
Specific gravity (70°F, 21°C)	1.03
Flash point	> 200 °F (> 93 °C) SETA(CC)
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Auto-ignition temperature	Not available.
Evaporation rate	< 1 (Ether = 1)
Viscosity	4 cps
Viscosity temperature	70 °F (21 °C)
Percent volatile	38 (Estimated)
Pour point	0 °F (-18 °C)

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Contact with water reactive compounds may cause fire or explosion.
Incompatible materials	Avoid contact with strong oxidizers.
Hazardous decomposition products	Elemental oxides

11. Toxicological Information

Toxicological data

Product	Species	Test Results
PETROFLO 21Y23 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	1333 mg/kg, (Calculated according to GHS additivity formula (Category 4))
<i>Inhalation</i>		
LC50	Rat	21.2 mg/l/4h, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	2763 mg/kg, (Calculated according to GHS additivity formula)

Components	Species	Test Results
AMINO ETHER (CAS TSNR 125438 - 5183P)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	504 mg/kg
<i>Inhalation</i>		
LC50	Rat	8 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1680 mg/kg

Acute effects Harmful in contact with skin.

Chronic effects Long term exposure may cause adverse effects to health.

Carcinogenicity

ACGIH Carcinogens

AMINO ETHER (CAS TSNR 125438 - 5183P) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

AMINO ETHER (CAS TSNR 125438 - 5183P) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Skin corrosion/irritation Causes severe skin burns and eye damage.

12. Ecological Information

Ecotoxicity

Product	Species	Test Results	
PETROFLO 21Y23 (CAS Mixture)			
Crustacea	0% Mortality	Daphnia magna	100 mg/L, Static Screen, 48 hour
	100% Mortality	Daphnia magna	500 mg/L, Static Screen, 48 hour
Other	0% Mortality	Rainbow Trout	500 mg/L, Static Screen, 48 hour
	100% Mortality	Rainbow Trout	1000 mg/L, Static Screen, 48 hour

Partition coefficient

AMINO ETHER -0.9

Persistence and degradability

- COD (mgO2/g) 695 (calculated data)
- BOD 5 (mgO2/g) 0 (calculated data)
- BOD 28 (mgO2/g) 345 (calculated data)
- Closed Bottle Test (% Degradation in 28 days) 54 (calculated data)
- Zahn-Wellens Test (% Degradation in 28 days) 90 (calculated data)

- TOC (mg C/g) 198 (calculated data)

13. Disposal Considerations

Waste codes	Industrial Liquid Waste
Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

UN number	UN2735
UN proper shipping name	AMINES LIQUID CORROSIVE, N.O.S. (MORPHOLINE SOLUTION)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Special precautions for user	Not available.
ERG number	153

IATA

UN number	UN2735
UN proper shipping name	AMINES LIQUID, CORROSIVE, N.O.S. (MORPHOLINE SOLUTION)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	153
Special precautions for user	Not available.

IMDG

UN number	UN2735
UN proper shipping name	AMINES LIQUID, CORROSIVE, N.O.S. (MORPHOLINE SOLUTION)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Not available.

TDG

UN number	UN2735
UN proper shipping name	AMINES LIQUID, CORROSIVE, N.O.S. (MORPHOLINE SOLUTION)
Hazard class	8
Packing group	II
ERG code	153

DOT





15. Regulatory Information

US federal regulations

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

None listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity, lbs

AMINO ETHER: 100 lbs

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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1,2-Diaminoethane (Ethylene diamine)	107-15-3	5000	10000 lbs		
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SARA 311/312 Hazardous chemical No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

2-methoxyethanol (CAS 109-86-4) Listed: January 1, 1989 Developmental toxin.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

No ingredient listed.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

2-methoxyethanol (CAS 109-86-4) Listed: January 1, 1989 Male reproductive toxin.

US - Massachusetts RTK - Substance List

AMINO ETHER (CAS TSNR 125438 - 5183P)

US - New Jersey RTK - Substances: Listed substance

AMINO ETHER (CAS TSNR 125438 - 5183P) Listed.

US - Pennsylvania RTK - Hazardous Substances

AMINO ETHER (CAS TSNR 125438 - 5183P) Listed.

US - Rhode Island RTK

Not regulated.

16. Other Information

List of abbreviations	Not available.
HMIS® ratings	Health: 3 Flammability: 1 Physical hazard: 0 Personal protection: D
NFPA ratings	Health: 3 Flammability: 1 Instability: 0 Special hazards: ALK
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
This data sheet contains changes from the previous version in section(s):	Product and Company Identification: Commercial Names Composition / Information on Ingredients: Disclosure Overrides Toxicological Information: Toxicological Data Transport Information: Material Transportation Information GHS: Classification
Prepared by	This MSDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

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