

MATERIAL SAFETY DATA SHEET**Product Trade Name:** PEN-88M**Revision Date:** 28-Aug-2014**Revision Number:** 16**SECTION 1. Product and Company Identification****Product Identifier**

Product Trade Name: PEN-88M
Synonyms: None
Chemical Family: Blend
Internal ID Code: HM001179

Product Use

Application: Cleaner

Manufacturer's Name and Contact Details

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Prepared By

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SECTION 2. Hazard(s) Identification**WHMIS Classification**

WHMIS Hazard Class B3 Combustible Liquids
D1A Very Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

WHMIS Symbol(s)**Summary of hazards of the product****Hazard Overview**

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.
Combustible

SECTION 3: Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	HMIRA Registry Number	Decision Granted Date
Ethoxylated alcohol	Proprietary	30 - 60%	8951	August 20, 2014

Ethylene glycol monobutyl ether	111-76-2	30 - 60%	Not applicable	Not applicable
Alcohol	Proprietary	10 - 30%	8951	August 20, 2014
Ethoxylated nonylphenol	Proprietary	5 - 10%	8951	August 20, 2014
Ethylene glycol	107-21-1	1 - 5%	Not applicable	Not applicable
Methanol	67-56-1	0.1 - 1%	Not applicable	Not applicable

SECTION 4. First aid measures

Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration (AR), preferably mouth-to-mouth. If breathing is difficult, oxygen should be given by trained personnel. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If breathing has stopped, trained personnel should begin rescue breathing / artificial respiration (AR) immediately. If the heart has stopped, trained personnel should begin CPR immediately. Obtain medical attention immediately.

Most important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

SECTION 5. Fire Fighting Measures

Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance or mixture

Special Exposure Hazards

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Hazardous combustion products

Carbon monoxide and carbon dioxide.

SECTION 6. Accidental release measures

Personal precautions and emergency procedures

Protective Equipment

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

Environmental Precautionary Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

SECTION 7. Handling and Storage

Precautions for safe handling

Avoid contact with eyes, skin, or clothing. Wash hands after use. Avoid breathing vapors. Do NOT consume food, drink, or tobacco in contaminated areas.

Conditions for safe storage and Incompatible materials for storage

Store away from oxidizers. Store in a dry location. Store in a cool well ventilated area. Keep from heat, sparks, and open flames. Keep container closed when not in use. Store at temperatures between 50 and 100 F (10 and 37.8 C). Do not freeze. Product has a shelf life of 24 months.

SECTION 8: Exposure Controls/Personal Protection

Occupational Exposure Limits**Exposure Limits**

Substances	CAS Number	ACGIH TLV-TWA	OSHA PEL-TWA
Ethoxylated alcohol	Proprietary	Not available	Not available
Ethylene glycol monobutyl ether	111-76-2	TWA: 20 ppm Skin	TWA: 50 ppm Skin
Alcohol	Proprietary	TWA: 50 ppm	Not available
Ethoxylated nonylphenol	Proprietary	Not available	Not available
Ethylene glycol	107-21-1	Ceiling: 100 mg/m ³	Ceiling: 50 ppm
Methanol	67-56-1	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm

Appropriate engineering controls**Engineering Controls**

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal Protective Equipment (PPE)**Respiratory Protection**

Organic vapor respirator.

Hand Protection

Impervious rubber gloves.

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

SECTION 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical State: Liquid
Odor: Mild ether

Color: White, opaque
Odor Threshold: No information available

Property
Remarks/ - Method

Values

pH:

5-7

pH Concentration of Solution:

No information available.

Freezing Point/Range

No information available.

Melting Point/Range

No information available

Boiling Point/Range (C):

171 °C

Flash Point/Range (C):

68 °C

Flash Point Method:

SETA

Autoignition Temperature (C):	No information available.
Flammability Limits in Air - Lower (%):	No information available.
Flammability Limits in Air - Upper (%):	No information available.
Evaporation Rate (Butyl Acetate=1):	No information available.
Vapor Pressure @ 20 C (mmHg):	> 0.76
Vapor Density (Air=1):	No information available.
Specific Gravity @ 20 C (Water=1):	0.94
Solubility in Water (g/100ml):	Disperses
Solubility in other solvents	No information available.
Partition Coefficient/n-Octanol/Water:	No information available.
Decomposition Temperature (C):	No information available.
Viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other Information

Molecular Weight (g/mole):	No information available.
VOC Content (%)	No information available

SECTION 10. Stability and Reactivity

Conditions of Reactivity**Conditions to Avoid**

Keep away from heat, sparks and flame.

Hazardous Polymerization:

Will Not Occur

Chemical Stability

Stable

Sensitivity to Static Discharge

Not available

Sensitivity to Mechanical Impact

Not available

Incompatible materials

Strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

SECTION 11. Toxicological Information

Routes of entry

Eye or skin contact, inhalation. Ingestion.

Information on Toxicological Effects**Acute effects from exposure****Inhalation**

May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact

May cause eye irritation

Skin Contact

May be absorbed through the skin and contribute to the symptoms listed under ingestion. May cause skin defatting with prolonged exposure. Can dry skin.

Ingestion

May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression. May cause liver and kidney damage. Ethylene glycol monobutyl ether has caused red blood cell hemolysis in animals.

Chronic effects from exposure

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause eye, blood, lung, liver, kidney, heart, central nervous system and spleen damage. May contain ethylene oxide in the headspace of the drum. Ethylene oxide is a cancer and reproductive hazard. Prolonged or repeated exposure may cause embryo and fetus toxicity.

Irritancy of product
Irritation

Irritating to eyes and skin

Sensitization of product
Sensitization

Not confirmed to cause skin or respiratory sensitization.

Mutagenicity
Mutagenic Effects

Not regarded as mutagenic.

Carcinogenicity
Carcinogenic Effects

Ethylene glycol monobutyl ether has been classified by ACGIH as A3: a confirmed animal carcinogen.

Reproductive toxicity
Reproductive Toxicity

This product does not contain any known or suspected reproductive hazards

Teratogenicity/embryotoxicity
Teratogenic

Ethylene glycol has been shown to cause teratogenic effects in animals in the absence of maternal toxicity. Methanol has been shown to cause teratogenic effects in animals in the absence of maternal toxicity.

Toxicologically synergistic material Not available

Acute Toxicity

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethoxylated alcohol	Proprietary	No data available	No data available	No data available
Ethylene glycol monobutyl ether	111-76-2	470 mg/kg (Rat) 1414 mg/kg (Guinea pig) 1746 mg/kg (Rat) 320 mg/kg (Rabbit) 530 mg/kg (Rat) 560 mg/kg (Rat) 3000 mg/kg (Rat) 2400 mg/kg (Rat)	220 mg/kg (Rabbit) 2270 mg/kg (Rat) 200 mg/kg (Guinea pig) >2000 mg/kg (Rabbit) 841 mg/kg (Rabbit) 435 mg/kg (Rabbit) >2000 mg/kg (Guinea pig) >2000 mg/kg (Rat) 100 mg/kg (Rabbit) 207 mg/kg (Guinea pig) 400-500 mg/kg (Rabbit)	450 ppm (Rat) 4h 2.174 mg/L (Rat) 4h 2.21 mg/L (Rat) 4h 450-486 ppm (Rat) 4h 925 ppm (Rat) 4h >633 ppm (Guinea pig) 1h
Alcohol	Proprietary	5190 µL/kg (Rat) 1516-2774 mg/kg (Rat) 1480 mg/kg (Rat) 600 mg/kg (Guinea pig) 2.46 ml/kg (2040 mg/kg) (Rat)	5660 µL/kg (Rabbit) 2520 mg/kg (Rabbit) 1980 mg/kg (Rabbit) 2.38 ml/kg (1970 mg/kg) (Rabbit)	227 ppm (Rat) 6h
Ethoxylated nonylphenol	Proprietary	1310 mg/kg (Rat) 4290-5000 mg/kg (Rat) 4290 mg/kg (Mouse) (similar substance)	2 mL/kg (Rabbit) 2500 mg/kg (Rabbit)	> 0.0213 mL/L (Rat)
Ethylene glycol	107-21-1	4000 mg/kg (Rat) 7712 mg/kg (Rat) > 10000 mg/kg (Rat) 1670 mg/kg (Cat) 1400 – 1600 mg/kg (Human)	9530 µL/kg (Rabbit) > 3500 mg/kg (Mouse)	> 2.5 mg/L (Rat, 6h) (saturated concentration)
Methanol	67-56-1	> 1187 - 2769 mg/kg (Rat) 3000 mg/kg (Monkey) 300 mg/kg (Human)	15800 mg/kg (Rabbit) 393 mg/kg (Primate)	87.5 mg/L (Rat) 6h vapour 128.2 mg/L (Rat) 4h vapour 83.2 mg/L (Rat) 4 h 64000 ppm (Rat) 4 h 10 mg/L (Human)

SECTION 12. Ecological Information

Toxicity Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Ethoxylated alcohol	Proprietary	No information available	No information available	No information available	No information available
Ethylene glycol monobutyl ether	111-76-2	EC50: 839.56 mg/l (Skeletoneema costatum) EC50(72h): 911 mg/L (biomass) EC50: > 500 mg/l (Scenedesmus subspicatus) NOEC(72h): 88 mg/L (biomass)(Pseudokirchnerella subcapitata)	LC50: > 1000 mg/l (Scophthalmus maximus juvenile) LC50(96h): 1474 mg/L (Oncorhynchus mykiss) NOEC(21d): > 100mg/L (Danio rerio)	TT/EC3(48h): 463 mg/L (Uronema parduzci) TT/EC3(72h): 73 mg/L (Entosiphon sulcatum) TT/EC3(16h): 700 mg/L (Pseudomonas putida)	EC50: >1000 mg/L (Daphnia magna) EC50 (48h): 1800 mg/L (Daphnia magna) EC50: 1875 mg/l (Daphnia magna) NOEC(21d)(reproduction): 100 mg/L (Daphnia magna)
Alcohol	Proprietary	EC50: 11.5 mg/L (Desmodesmus subspicatus)	LC50: 32-37 mg/L (Oncorhynchus mykiss) LC50: 10 - 33 mg/L (Lepomis macrochirus)	No information available	TLM96: > 10000 mg/l (Crangon crangon) EC50 39 mg/L (Daphnia magna)
Ethoxylated nonylphenol	Proprietary	EC50(48h) 20 mg/L (growth inhibition) (Pseudokirchnerella subcapitata) EC50(48h) 50 mg/L (growth rate) (Pseudokirchnerella subcapitata)	LC50(96h): 5.6 mg/L (Brachydanio rerio) LC50(96h): 1.3 mg/L (Lepomis macrochirus) LC50(96h): 5 mg/L (Danio rerio)	No information available	EC50(48h): 1.821 mg/L (Daphnia sp.) (QSAR)
Ethylene glycol	107-21-1	EC50: 6500 - 13000 mg/L (Pseudokirchnerella subcapitata) TGK(8d): > 10000 mg/L (Scenedesmus quadricauda)	LC50: 41000 mg/L (Oncorhynchus mykiss) LC50(96h): 72860 mg/L (Pimephales promelas) NOEC(7d): 32000 mg/L (mortality) (Pimephales promelas)	TTC(16h): > 10000 mg/L (Pseudomonas putida) EC20(30 m): > 1995 mg/L (activated sludge, domestic) (similar substance – diethylene glycol)	EC50: 46300 mg/L (Daphnia magna) EC50(48h): >100 mg/L (Daphnia magna) NOEC(7d): 8590 mg/L (reproduction) (Ceriodaphnia dubia)
Methanol	67-56-1	EC50(96h): ca. 22000 mg/L (Pseudokirchnerella subcapitata, Growth rate)	LC50: 28200 mg/l (Pimephales promelas) LC50(96h): 12700 – 15400 mg/L (Lepomis macrochirus) 200 hr NOEC for % Embryo-cardiovascular for stage 2 = 15800 mg/L	IC50(3h): > 1000 mg/L (activated sludge)	EC50(96h): 18260 mg/L (Daphnia magna) NOEC(21d): 122 mg/L (Daphnia magna, Reproduction)

Persistence and Degradability

No information available

Bioaccumulation potential

No information available

Substances	Log Pow
Ethylene glycol monobutyl ether	0.81
Alcohol	BCF: 115 L/kg (Cladophora glomerata)
Ethoxylated nonylphenol	3.7 @ 25°C
Ethylene glycol	-1.36

Methanol	-0.77 BCF 1.0 – 4.5 (Cyprinus carpio) BCF < 10 (Leuciscus idus melanotus)
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Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Substances	PBT and vPvB assessment
Ethoxylated nonylphenol	PBT & vPvB
Ethylene glycol	Not PBT/vPvB
Methanol	Not PBT/vPvB

Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

Substances	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Ethoxylated nonylphenol	Group III	Cat. 1	

SECTION 13. Disposal Considerations
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Disposal Method

Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

SECTION 14. Transport Information
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Canadian TDG ul0

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable
 Packing Group: Not applicable

IATA/ICAO

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable
 Packing Group: Not applicable

IMDG/IMO

UN Number: Not restricted.
 UN Proper Shipping Name: Not restricted
 Transport Hazard Class(es): Not applicable
 Packing Group: Not applicable

Special Precautions for User:

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

SECTION 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Regulations**Canadian DSL Inventory**

All components listed on inventory or are exempt.

WHMIS Hazard Class

B3 Combustible Liquids
D1A Very Toxic Materials
D2A Very Toxic Materials
D2B Toxic Materials

WHMIS Symbol(s)**US Regulations****US TSCA Inventory**

All components listed on inventory or are exempt.

SECTION 16. Other Information**Preparation Information****Prepared By**

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Revision Date:

28-Aug-2014

Not applicable

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Key or legend to abbreviations and acronyms

WHMIS: Workplace Hazardous Materials Information System

Key literature references and sources for data

www.ChemADVISOR.com/

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*****END OF MSDS*****