

## SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

### PENETROL®

Revision Date: 21-Sep-2015

Revision Number: 17

#### SECTION 1: Identification of the substance/mixture and of the company/undertaking

##### 1.1. Product Identifier

Product Name PENETROL®  
Internal ID Code HM003729

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Wetting Agent  
**Sector of use** SU2 - Mining, (including offshore industries)  
**Product category** PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific  
**Process categories** PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

##### 1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.  
Halliburton House, Howemoss Crescent  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

[www.halliburton.com](http://www.halliburton.com)

For further information, please contact

**E-Mail address:** [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)

##### 1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

#### SECTION 2: Hazards Identification

##### 2.1. Classification of the substance or mixture

##### REGULATION (EC) No 1272/2008

Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 2 - H319

**2.2. Label Elements****Hazard Pictograms****Signal Word****Warning****Hazard Statements**

H315 - Causes skin irritation

H319 - Causes serious eye irritation

**Precautionary Statements - EU (§28, 1272/2008)**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/eye protection/face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

**Contains****Substances**

Amides, coco, N,N-bis (hydroxyethyl)

Diethanolamine

**CAS Number**

68603-42-9

111-42-2

**2.3. Other Hazards**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients****3.2. Mixtures**

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Amides, coco, N,N-bis (hydroxyethyl)	271-657-0	68603-42-9	10 - 30%	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Aquatic Chronic 3 (H412)	No data available
Diethanolamine	203-868-0	111-42-2	1 - 5%	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Corr. 1 (H318) STOT RE 2 (H373) Aquatic Chronic 3 (H412)	No data available

**For the full text of the H-phrases mentioned in this Section, see Section 16****SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation**

If inhaled, move victim to fresh air and seek medical attention.

**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**

Wash off immediately with soap and plenty of water for at least 15 minutes

**Ingestion** while removing all contaminated clothing and shoes  
Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

#### **4.2. Most Important symptoms and effects, both acute and delayed**

Causes eye irritation. Causes skin irritation. May cause damage to internal organs.

#### **4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically

## **SECTION 5: Firefighting Measures**

### **5.1. Extinguishing media**

#### **Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

#### **Extinguishing media which must not be used for safety reasons**

None known.

### **5.2. Special hazards arising from the substance or mixture**

#### **Special Exposure Hazards**

Decomposition in fire may produce harmful gases.

### **5.3. Advice for firefighters**

#### **Special Protective Equipment for Fire-Fighters**

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

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

See Section 8 for additional information

### **6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

### **6.3. Methods and material for containment and cleaning up**

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

### **6.4. Reference to other sections**

See Section 8 and 13 for additional information.

## **SECTION 7: Handling and Storage**

### **7.1. Precautions for Safe Handling**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **7.2. Conditions for safe storage, including any incompatibilities**

Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 36 months.

### **7.3. Specific End Use(s)**

**Exposure Scenario** No information available

**Other Guidelines** No information available

## **SECTION 8: Exposure Controls/Personal Protection**

### **8.1. Control parameters**

#### **Exposure Limits**

Substances	CAS Number	EU	UK	Netherlands	France
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable	Not applicable	Not applicable	Not applicable

Diethanolamine	111-42-2	Not applicable	3 ppm	Not applicable	3 ppm
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Substances	CAS Number	Germany	Spain	Portugal	Finland
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Diethanolamine	111-42-2	TWA: 1 mg/m <sup>3</sup>	TWA: 0.46 ppm TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 0.46 ppm TWA: 2 mg/m <sup>3</sup>

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Diethanolamine	111-42-2	TWA: 0.46 ppm TWA: 2 mg/m <sup>3</sup> STEL" 0.92 ppm STEL" 4 mg/m <sup>3</sup>	1 mg/m <sup>3</sup> TWA (inhalable fraction and vapour) 3 mg/m <sup>3</sup> STEL (calculated, inhalable fraction and vapour)	TWA: 1 mg/m <sup>3</sup> STEL: 1 mg/m <sup>3</sup>	TWA: 3 ppm TWA: 15 mg/m <sup>3</sup> STEL: 6 ppm STEL: 22.5 mg/m <sup>3</sup>

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Diethanolamine	111-42-2	Not applicable	TWA: 9 mg/m <sup>3</sup>	Not applicable	TWA: 5 mg/m <sup>3</sup>

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable	Not applicable	Not applicable	Not applicable
Diethanolamine	111-42-2	TWA: 0.46 ppm TWA: 2 mg/m <sup>3</sup>	Not applicable	TWA: 3 ppm TWA: 15 mg/m <sup>3</sup>	Not applicable

**Derived No Effect Level (DNEL)  
Worker**

No information available.

**General Population**

**Predicted No Effect Concentration (PNEC)**

No information available.

**8.2. Exposure controls**

**Engineering Controls**

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

**Personal protective equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection**

Not normally needed. But if significant exposures are possible then the following respirator is recommended:  
Organic vapor respirator.

**Hand Protection**

Polyvinylchloride gloves.

**Skin Protection**

Rubber apron.

**Eye Protection**

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

**Other Precautions**

None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## SECTION 9: Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid  
**Odor:** Coconut

**Color:** Green  
**Odor Threshold:** No information available

Property  
Remarks/ - Method

Values

**pH:**  
**Freezing Point/Range**  
**Melting Point/Range**  
**Boiling Point/Range**

9.3  
No data available  
No data available  
157 °C / 315 °F

<b>Flash Point</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
<b>upper flammability limit</b>	No data available
<b>lower flammability limit</b>	No data available
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	< 1 mmHg
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	1
<b>Water Solubility</b>	Miscible with water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

**9.2. Other information**

**VOC Content (%)** No data available

**SECTION 10: Stability and Reactivity**
**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical Stability**

Stable

**10.3. Possibility of Hazardous Reactions**

Will Not Occur

**10.4. Conditions to Avoid**

Avoid contact with oxidizers.

**10.5. Incompatible Materials**

Strong acids. Zinc. Copper and copper alloys.

**10.6. Hazardous Decomposition Products**

Oxides of nitrogen. Carbon monoxide and carbon dioxide.

**SECTION 11: Toxicological Information**
**11.1. Information on Toxicological Effects****Acute Toxicity****Inhalation**

May cause respiratory irritation. Excessive inhalation causes headache, dizziness, nausea and incoordination.

**Eye Contact**

Causes eye irritation. May cause corneal injury.

**Skin Contact**

Causes skin irritation.

**Ingestion**

Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity**

Repeated overexposure may cause liver and kidney effects.

**Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No data available	No data available	No data available
Diethanolamine	111-42-2	620 µL/kg (Rat) 1600 mg/kg (Rat)	7640 µL/kg (Rabbit) 13,000 mg/kg (Rabbit)	3.35 mg/L (Rat)

Substances	CAS Number	Skin corrosion/irritation
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Irritating to skin. (Rabbit)
Diethanolamine	111-42-2	Causes moderate skin irritation. (Rabbit)

Substances	CAS Number	Eye damage/irritation
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Irritating to eyes. (Rabbit)
Diethanolamine	111-42-2	Causes severe eye irritation. (Rabbit)

Substances	CAS Number	Skin Sensitization
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Did not cause sensitization on laboratory animals (guinea pig)
Diethanolamine	111-42-2	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No information available
Diethanolamine	111-42-2	No information available

Substances	CAS Number	Mutagenic Effects
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	In vitro tests did not show mutagenic effects Some in vivo tests have shown mutagenic effects.
Diethanolamine	111-42-2	In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No data of sufficient quality are available.
Diethanolamine	111-42-2	No data of sufficient quality are available.

Substances	CAS Number	Reproductive toxicity
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Did not show teratogenic effects in animal experiments.
Diethanolamine	111-42-2	Animal testing did not show any effects on fertility. (similar substances) Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No significant toxicity observed in animal studies at concentration requiring classification.
Diethanolamine	111-42-2	No information available

Substances	CAS Number	STOT - repeated exposure
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No data of sufficient quality are available.
Diethanolamine	111-42-2	Causes damage to organs through prolonged or repeated exposure if swallowed: (Liver) (Blood) (Kidney)

Substances	CAS Number	Aspiration hazard
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Not applicable
Diethanolamine	111-42-2	Not applicable

## SECTION 12: Ecological Information

### 12.1. Toxicity Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	LC50 (96h) 3.6 mg/L (Brachydanio rerio)	EC50 (72h) 2.2 mg/L (Scenedesmus subspicatus)	No information available	EC50 (48h) 2.25 mg/L (Ceriodaphnia dubia) NOEC (21d) 1.0 mg/L (Daphnia magna)
Diethanolamine	111-42-2	EC50 7.8 mg/L (Desmodesmus subspicatus) EC50 (96h) 2.2 mg/L (growth rate) (Selenastrum capricornutum)	LC50 4460-4980 mg/L (Pimephales promelas) LC50 (96h) 1460 mg/L (Pimephales promelas)	EC20 >1000 mg/L (respiration rate) (activated sludge) EC90 (30min) > 1000 mg/L (Activated sludge)	EC50 (48h) 30.1 mg/L (Ceriodaphnia dubia) EC50 (48h) 55 mg/L (Daphnia magna) NOEC (21d) 0.78 mg/L (Daphnia magna) (Reproduction)

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	Readily biodegradable (84% @ 28d)
Diethanolamine	111-42-2	Readily biodegradable (88 - 97% @ 28d)

**12.3. Bioaccumulative potential**

Substances	CAS Number	Log Pow
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No information available
Diethanolamine	111-42-2	-1.71

**12.4. Mobility in soil**

Substances	CAS Number	Mobility
Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	No information available
Diethanolamine	111-42-2	No information available

**12.5. Results of PBT and vPvB assessment**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Amides, coco, N,N-bis (hydroxyethyl)	Not PBT/vPvB
Diethanolamine	Not PBT/vPvB

**12.6. Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**SECTION 13: Disposal Considerations****13.1. Waste treatment methods****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****IMDG/IMO**

<b>UN Number:</b>	Not restricted
<b>UN Proper Shipping Name:</b>	Not restricted
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable
<b>Environmental Hazards:</b>	Not applicable

**RID**

<b>UN Number:</b>	Not restricted
<b>UN Proper Shipping Name:</b>	Not restricted
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable
<b>Environmental Hazards:</b>	Not applicable

**ADR**

<b>UN Number:</b>	Not restricted
<b>UN Proper Shipping Name:</b>	Not restricted
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable
<b>Environmental Hazards:</b>	Not applicable

**IATA/ICAO**

<b>UN Number:</b>	Not restricted
<b>UN Proper Shipping Name:</b>	Not restricted
<b>Transport Hazard Class(es):</b>	Not applicable
<b>Packing Group:</b>	Not applicable

**Environmental Hazards:** Not applicable

**14.1. UN Number:** Not restricted

**14.2. UN Proper Shipping Name:** Not restricted

**14.3. Transport Hazard Class(es):** Not applicable

**14.4. Packing Group:** Not applicable

**14.5. Environmental Hazards:** Not applicable

**14.6. Special Precautions for User:** None

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

## SECTION 15: Regulatory Information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Inventories

<b>EINECS Inventory</b>	This product, and all its components, complies with EINECS
<b>US TSCA Inventory</b>	All components listed on inventory or are exempt.
<b>Canadian DSL Inventory</b>	All components listed on inventory or are exempt.

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**Germany, Water Endangering Classes (WGK)** Not determined.

### 15.2. Chemical Safety Assessment

No information available

## SECTION 16: Other Information

### **Full text of H-Statements referred to under sections 2 and 3**

H302 - Harmful if swallowed

H315 - Causes skin irritation

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

H412 - Harmful to aquatic life with long lasting effects

### **Key or legend to abbreviations and acronyms**

bw – body weight

CAS – Chemical Abstracts Service

CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EC – European Commission

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL0 – Lethal Loading 0%

LL50 – Lethal Loading 50%

MARPOL – International Convention for the Prevention of Pollution from Ships

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program



OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Revision Date:** 21-Sep-2015

**Revision Note**

SDS sections updated: 1

**This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010**

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**End of Safety Data Sheet**