HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

PHPA PREFLUSH

Revision Date: 29-Nov-2010 Revision Number: 8

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name PHPA PREFLUSH

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Pre-Flush

Uses Advised Against No information available

Details of the supplier of the safety data sheet

Halliburton Energy Services

Halliburton House, Howemoss Place

Kirkhill Industrial Estate

Dyce

Aberdeen, AB21 0GN

United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

Emergency telephone number

+44 1224 795277 or +1 281 575 5000

| Emergency telephone §45 | - (EC)1272/2008 |
|-------------------------|---|
| Europe | 112 |
| 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 |
| Spain | Poison Information Service (ES): +34 91 562 04 20 |
| United Kingdom | NHS Direct (UK): +44 0845 46 47 |

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture REGULATION (EC) No 1272/2008

| Acute Oral Toxicity | Category 4- H302 |
|---|---------------------|
| Acute Inhalation Toxicity - Dusts and Mists | Category 4- H332 |
| Serious Eye Damage / Eye Irritation | Category 1- H318 |
| Reproductive Toxicity | Category 1B- H360Df |

2. HAZARDS IDENTIFICATION

Oxidizing solids. Category 2- H272

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases mentioned in this Section, see Section 16

Classification Xi - Irritant.

Risk Phrases

R36/37/38 Irritating to eyes, respiratory system and skin.

Label Elements

Hazard Pictograms







Signal Word Danger

Hazard Statements

H360Df - May damage the unborn child. Suspected of damaging fertility

H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H335 - May cause respiratory irritation

Contains

SubstancesCAS NumberSodium perborate tetrahydrate10486-00-7

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

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P220 - Keep/Store away from clothing/ combustible materials

P221 - Take any precaution to avoid mixing with combustibles

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

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P308 + P313 - IF exposed or concerned: 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

P310 - Immediately call a POISON CENTER or doctor/physician

P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P330 - Rinse mouth

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P312 - Call a POISON CENTER/doctor/physician if you feel unwell

Other Hazards

None known

| 3. COMPOSITION/INFORMATION ON INGREDIENTS | |
|---|--|

| Substances | EINECS | CAS Number | PERCENT | EEC Classification | EU - CLP Substance Classification | REACH No. |
|----------------------------------|----------------|------------|-----------|-----------------------|--|-------------------|
| Sodium perborate tetrahydrate | Not applicable | 10486-00-7 | 60 - 100% | Xi; R36/37/38 | Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318) Repr. 1B (H360Df) STOT SE 3 (H335) Ox. Sol. 2 (H272) | No data available |

For the full text of the R-phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Description of first aid measures

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably

mouth-to-mouth. If breathing is difficult give oxygen. Get 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. Wash with soap and water. Get medical attention if irritation persists. Remove

contaminated clothing and launder before reuse.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek

medical attention. Never give anything by mouth to an unconscious person.

Most Important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory burns.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIREFIGHTING MEASURES

Extinguishing mediaó

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Skin

Special hazards arising from the substance of mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Releases oxygen at high temperatures.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 12 for additional information

Environmental precautions

Prevent from entering sewers, waterways, or low areas.

Methods and material for containment and cleaning up

Scoop up and remove.

Reference to other sections

See Section 12 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Conditions for safe storage, including any incompatibilities

Store away from combustibles. Store in a cool, dry location.

Specific End Use(s)

Exposure Scenario No information available **Other Guidelines** No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Substances | EU | UK OEL | Netherlands | France OEL | Germany MAK/TRK |
|------------------|----------------|----------------|----------------|----------------|-----------------|
| Sodium perborate | Not applicable |
| tetrahydrate | | | | | |

| Substances | Italy | Poland | Hungary | Czech Republic | Denmark |
|------------------|----------------|----------------|----------------|----------------|----------------|
| Sodium perborate | Not applicable |
| tetrahydrate | | | | | |

Derived No Effect Level (DNEL) Predicted No Effect Concentration No information available. No information available.

(PNEC)

Exposure controls

Use in a well ventilated area. **Engineering Controls**

Personal protective equipment

Respiratory Protection Dust/mist respirator. (N95, P2/P3)

Hand Protection Impervious rubber gloves. **Skin Protection** Rubber apron.

Dust proof goggles. **Eye Protection**

Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State: Powder Color: White

Odor: Odorless Odor Threshold: No information available

Property Values

Remarks/ Method pH: 10.2 (1%)

Melting Point/Range No data available

No data available Freezing Point/Range (C):

Boiling Point/Range 130°C

Flash Point No data available No data available **Evaporation rate Vapor Pressure** No data available No data available **Vapor Density**

Specific Gravity 0.82

Partly soluble **Water Solubility** Solubility in other solvents No data available Partition coefficient: n-octanol/water No data available **Autoignition Temperature** No data available No data available **Decomposition Temperature**

Viscosity No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Explosive Properties No information available Oxidizing Properties No information available

Other information

Molecular Weight 153.86

VOC Content (%)

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable

Chemical Stability

Stable

Possibility of Hazardous Reactions

Will Not Occur

Conditions to Avoid

Avoid contact with organic materials.

Incompatible Materials

Contact with water. Organic matter. All flammables, especially petroleum products, asphalt & other volatile flammables. Metal salts such as aluminum chloride.

Hazardous Decomposition Products

Oxygen.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Inhalation Causes severe respiratory irritation. May be absorbed through inhalation contributing to

symptoms listed under ingestion.

Eye Contact Causes severe eye irritation which may damage tissue. May cause eye burns.

Skin Contact May cause skin irritation.

Ingestion Causes burns of the mouth, throat and stomach. May cause abdominal pain, vomiting,

nausea, and diarrhea.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause gastrointestinal effects and muscular

dysfunction.

| Substances | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------------------|-------------------|-------------------|-------------------|
| Sodium perborate tetrahydrate | No data available | No data available | No data available |

12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity Effects

| Substances | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|------------------|--------------------------|-----------------------|----------------------------|-------------------------------|
| Sodium perborate | No information available | TLM24: 160-320 mg/l | No information available | No information available |
| tetrahydrate | | (Oncorhynchus mykiss) | | |

Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No information available

Mobility in soil

No information available

Results of PBT and vPvB assessment

No information available.

Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Method
Contaminated Packaging

Bury in a licensed landfill according to federal, state, and local regulations.

This bag may contain residue of a hazardous material. Some authorities may regulate such

containers as hazardous waste. Dispose of container according to national or local

regulations.

14. TRANSPORT INFORMATION

IMDG/IMO

UN Number: Not restricted. UN Proper Shipping Name: Not restricted Not restricted Not applicable

RID

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

ADR

UN Number: Not restricted. UN Proper Shipping Name: Not restricted Not restricted Not applicable

IATA/ICAO

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

Special Precautions for User None

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

Not applicable

15. REGULATORY INFORMATION

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

International Inventories

EINECS Inventory This product, and all its components, complies with EINECS

US TSCA Inventory
Canadian DSL Inventory
All components listed on inventory or are exempt.
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/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK)

WGK 1: Low hazard to waters.

Chemical Safety Assessment

No information available

16. OTHER INFORMATION

Full text of R-phrases referred to under Sections 2 and 3

R36/37/38 Irritating to eyes, respiratory system and skin.

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 29-Nov-2010 Revision Note 29-Nov-2010 Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet