HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

SHEPPEY LONDON CLAY

Revision Date: 23-Nov-2010 Revision Number: 3

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

Product Identifier

Product Name SHEPPEY LONDON CLAY

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

Recommended Use Weight Additive
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

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Emergency telephone number

+44 1224 795277 or +1 281 575 5000

| +44 1224 795277 0F+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

| Carcinogenicity | Category 1A - (H350) |
|--|----------------------|
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 1 - (H372) |

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

2. HAZARDS IDENTIFICATION

Classification Crystalline silica is not classified as a carcinogen in EU Council Directives

67/548/EEC and 88/379/EEC.

Risk Phrases None

Label Elements

Hazard Pictograms



Signal Word Danger

Hazard Statements

H350i - May cause cancer by inhalation

H372 - Causes damage to organs through prolonged or repeated exposure

Contains

| Substances | CAS Number |
|----------------------------------|------------|
| Smectite clay | 12199-37-0 |
| Illite | 12173-60-3 |
| Kaolinite | 1318-74-7 |
| Chlorite | 1318-59-8 |
| Crystalline silica, cristobalite | 14464-46-1 |
| Crystalline silica, tridymite | 15468-32-3 |
| Crystalline silica, quartz | 14808-60-7 |
| | |

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

P201 - Obtain special instructions before use

P308 + P313 - IF exposed or concerned: Get medical advice/attention

Other Hazards

None known

| 3 | COMPOSIT | | | INGREDIENTS |
|-----|----------|--------------|-----------------|-------------|
| .7. | CUMPUSH | ICHN/HNECHEN | VIA IILJIN LJIN | INGREDIENIS |

| Substances | EINECS | CAS Number | PERCENT | EEC Classification | EU - CLP Substance Classification | REACH No. |
|-------------------------------------|----------------|------------|-----------|-----------------------|--------------------------------------|-------------------|
| Smectite clay | Not applicable | 12199-37-0 | 60 - 100% | Not applicable | Not applicable | No data available |
| Illite | Not applicable | 12173-60-3 | 5 - 10% | Not applicable | Not applicable | No data available |
| Kaolinite | 215-286-4 | 1318-74-7 | 5 - 10% | Not applicable | Not applicable | No data available |
| Chlorite | 215-285-9 | 1318-59-8 | 1 - 5% | Not applicable | Not applicable | No data available |
| Crystalline silica, cristobalite | 238-455-4 | 14464-46-1 | 0 - 1% | Not applicable | Carc. 1A (H350i) STOT RE 1 (H372) | No data available |
| Crystalline silica, tridymite | 239-487-1 | 15468-32-3 | 0 - 1% | Not applicable | Carc. 1A (H350i) STOT RE 1 (H372) | No data available |
| Crystalline silica, quartz | 238-878-4 | 14808-60-7 | < 3 | Not applicable | Carc. 1A (H350i) STOT RE 1 (H372) | 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 from area to fresh air. Get medical attention if respiratory

irritation develops or if breathing becomes difficult.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15

minutes and get medical attention if irritation persists.

Skin Wash with soap and water. Get medical attention if irritation persists. **Ingestion** Under normal conditions, first aid procedures are not required.

Most Important symptoms and effects, both acute and delayed

May cause eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIREFIGHTING MEASURES

Extinguishing mediaó
Suitable Extinguishing Media
All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance of mixture

Special Exposure Hazards

Not applicable.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Not applicable.

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

None known.

Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

Reference to other sections

See Section 12 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Conditions for safe storage, including any incompatibilities

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

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 |
|-------------------------------------|----------------|-----------------------|-------------------------|------------------------|------------------------|
| Smectite clay | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Illite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Kaolinite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Chlorite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Crystalline silica, cristobalite | Not applicable | 0.1 mg/m ³ | 0,075 mg/m ³ | 0.05 mg/m ³ | 0,15 mg/m ³ |
| Crystalline silica, tridymite | Not applicable | 0.1 mg/m ³ | 0,075 mg/m ³ | 0.05 mg/m ³ | Not applicable |
| Crystalline silica, quartz | Not applicable | 0.1 mg/m ³ | 0,075 mg/m ³ | 0.1 mg/m ³ | 0,15 mg/m ³ |

| Substances | Italy | Poland | Hungary | Czech Republic | Denmark |
|-------------------------------|----------------|---------------------|------------------------|-----------------------|----------------|
| Smectite clay | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Illite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Kaolinite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Chlorite | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable |
| Crystalline silica, | Not applicable | 2 mg/m ³ | 0.15 mg/m ³ | 0.1 mg/m ³ | Not applicable |
| cristobalite | | | | | |
| Crystalline silica, tridymite | Not applicable | 2 mg/m ³ | 0.15 mg/m ³ | 0.1 mg/m ³ | Not applicable |
| Crystalline silica, quartz | Not applicable | 2 mg/m ³ | 0.15 mg/m ³ | Not applicable | Not applicable |

Derived No Effect Level (DNEL)
Predicted No Effect Concentration

No information available. No information available.

(PNEC)

Exposure controls
Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures

below applicable exposure limits listed in Section 2.

Personal protective equipment

Respiratory Protection Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), or equivalent respirator

when using this product.

Hand Protection Skin Protection

Normal work gloves.

Wear clothing appropriate for the work environment. Dusty clothing should be laundered

before reuse. Use precautionary measures to avoid creating dust when removing or

laundering clothing.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

Environmental Exposure Controls No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State: Solid Color: Brown to Gray

Odor: Odorless Odor Threshold: No information available

Property Values

Remarks/ Method

pH: No data available No data available Melting Point/Range Freezing Point/Range (C): No data available **Boiling Point/Range** No data available No data available **Flash Point Evaporation rate** No data available **Vapor Pressure** No data available **Vapor Density** No data available No data available **Specific Gravity** Water Solubility Insoluble in water Solubility in other solvents No data available Partition coefficient: n-octanol/water No data available **Autoignition Temperature** No data available **Decomposition Temperature** No data available No data available Viscosity **Explosive Properties** No information available

Explosive PropertiesNo information availableOxidizing PropertiesNo information available

Other information

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

None anticipated

Incompatible Materials

Hydrofluoric acid.

Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Inhalation Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is

carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental

animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects

(See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact May cause eye irritation.

Skin Contact May cause mechanical skin irritation.

Ingestion None known

11. TOXICOLOGICAL INFORMATION

Chronic Effects/Carcinogenicity Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

> Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

> There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

| Substances | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------------------------|-------------------|-------------------|-------------------|
| Smectite clay | No data available | No data available | No data available |
| Illite | No data available | No data available | No data available |
| Kaolinite | No data available | No data available | No data available |
| Chlorite | No data available | No data available | No data available |
| Crystalline silica, cristobalite | No data available | No data available | No data available |
| Crystalline silica, tridymite | No data available | No data available | No data available |
| Crystalline silica, quartz | 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) |
|-------------------------------|--------------------------|--------------------------|----------------------------|-------------------------------|
| Smectite clay | No information available | No information available | No information available | No information available |
| Illite | No information available | No information available | No information available | No information available |
| Kaolinite | No information available | No information available | No information available | No information available |
| Chlorite | No information available | No information available | No information available | No information available |
| Crystalline silica, | No information available | No information available | No information available | No information available |
| cristobalite | | | | |
| Crystalline silica, tridymite | No information available | No information available | No information available | No information available |
| Crystalline silica, quartz | No information available | No information available | No information available | No information available |

Persistence and degradability

No information available

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

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

IMDG/IMO

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

RID

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

ADR

UN Number: Not restricted. UN Proper Shipping Name: Not restricted Transport Hazard Class(es): 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 All components listed on inventory or are exempt. Canadian DSL Inventory 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 0: Generally not water endangering.

Chemical Safety Assessment

No information available

16. OTHER INFORMATION

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

None

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 23-Nov-2010
Revision Note Not applicable

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

Disclaimer Statement

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End of Safety Data Sheet