

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

TUNED LIGHT HCE CEMENT

Revision Date: 21-Jan-2015

Revision Number: 4

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

1.1. Product Identifier

Product Name TUNED LIGHT HCE CEMENT

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

Recommended Use	Cement
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 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

1.4. Emergency telephone number

+44 1224 795277 or +1 281 575 5000

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 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318
Skin Sensitization	Category 1 - H317
Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Specific Target Organ Toxicity - (Repeated Exposure)	Category 2 - H373

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

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

Classification

T - Toxic C - Corrosive

Risk Phrases

R34 Causes burns.

R37 Irritating to respiratory system.

R43 May cause sensitization by skin contact.

R49 May cause cancer by inhalation.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

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

Danger

Hazard Statements

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

H350i - May cause cancer by inhalation

H335 - May cause respiratory irritation

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

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

P201 - Obtain special instructions before use

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

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

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

P310 - Immediately call a POISON CENTER or doctor/physician

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

Contains**Substances**

Portland cement

Crystalline silica, quartz

CAS Number

65997-15-1

14808-60-7

2.3. Other Hazards

None known

SECTION 3: Composition/information on Ingredients

3.2. Mixtures

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Portland cement	266-043-4	65997-15-1	30 - 60%	C; R34 Xi; R37 R43	Eye Dam. 1 (H318) Skin Dam. 1C (H314) Skin Sens. 1 (H317) STOT SE 3 (H335)	No data available
Crystalline silica, quartz	238-878-4	14808-60-7	1 - 5%	T; R49 R48/23	Carc. 1 (H350) STOT RE 1 (H372)	No data available

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

SECTION 4: First aid measures

4.1. 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, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.

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

May cause severe eye irritation. May cause severe skin irritation. May cause respiratory irritation May cause allergic skin reaction. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

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

None - does not burn.

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

Not applicable.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

Not applicable.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.
See Section 8 for additional information

6.2. Environmental precautions

None known.

6.3. 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.

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. 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.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 24 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
Portland cement	65997-15-1	Not applicable	TWA: 10 mg/m ³ TWA: 4 mg/m ³ STEL: 30 mg/m ³ STEL: 12 mg/m ³	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m ³	TWA: 0.075 mg/m ³	TWA: 0.1 mg/m ³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Portland cement	65997-15-1	TWA:	TWA: 4 mg/m ³	TWA: 10 mg/m ³	TWA: 5 mg/m ³ TWA: 1 mg/m ³
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m ³	TWA: 0.025 mg/m ³	TWA: 0.05 mg/m ³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Portland cement	65997-15-1	TWA: 5 mg/m ³	1 mg/m ³ TWA (respirable dust) 3 mg/m ³ STEL (calculated, respirable dust)	TWA: 5 mg/m ³	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.15 mg/m ³	0.1 mg/m ³ TWA (respirable dust) 0.3 mg/m ³ STEL (calculated, respirable dust)	TWA: 0.15 mg/m ³	TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³ STEL: 0.9 mg/m ³ STEL: 0.3 mg/m ³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Portland cement	65997-15-1	Not applicable	TWA: 6.0 mg/m ³ TWA: 2.0 mg/m ³	TWA: 10 mg/m ³	10.0 mg/m ³
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 2 mg/m ³ TWA: 0.3 mg/m ³ TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³	TWA: 0.15 mg/m ³	TWA: 0.1 mg/m ³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Portland cement	65997-15-1	Not applicable	TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 4 mg/m ³	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	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 approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

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

Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

Hand Protection

Normal work gloves.

Skin Protection

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

Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls No information available

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid

Color: Gray

Odor: Odorless

Odor Threshold: No information available

PropertyValues

Remarks/ - Method

pH:

12.4

Freezing Point/Range

No data available

Melting Point/Range

No data available

Boiling Point/Range

No data available

Flash Point

No data available

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

No data available

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

Viscosity

No data available

Explosive Properties

No information available

Oxidizing Properties

No information available

9.2. Other information

VOC Content (%)

No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity

Not applicable

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

None anticipated

10.5. Incompatible Materials

Hydrofluoric acid.

10.6. Hazardous Decomposition Products

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

SECTION 11: Toxicological Information

11.1. 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 severe eye irritation.

Skin Contact

Can dry skin. May cause an allergic skin reaction. May cause alkali burns with confined contact.

Ingestion

None known

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.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Portland cement	65997-15-1	> 2000 mg/kg (Rat)	> 2000 mg/kg	> 1 mg/L (Rat) 4h
Crystalline silica, quartz	14808-60-7	> 5000 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Portland cement	65997-15-1	Corrosive to skin (rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Portland cement	65997-15-1	Corrosive to eyes
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Portland cement	65997-15-1	May cause sensitization by skin contact
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	Mutagenic Effects
Portland cement	65997-15-1	Not regarded as mutagenic.
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Portland cement	65997-15-1	No information available.
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Portland cement	65997-15-1	May cause respiratory irritation.
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled Lungs

Substances	CAS Number	Aspiration hazard
Portland cement	65997-15-1	Not applicable
Crystalline silica, quartz	14808-60-7	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
Portland cement	65997-15-1	No information available	No information available	No information available	No information available
Crystalline silica, quartz	14808-60-7	No information available	LL0(96h): 10000 mg/L (Danio rerio) (similar substance)	No information available	LL50(24h): > 10000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

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

Substances	CAS Number	Persistence and Degradability
Portland cement	65997-15-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Portland cement	65997-15-1	No information available
Crystalline silica, quartz	14808-60-7	No information available

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

Substances	PBT and vPvB assessment
Portland cement	No data available
Crystalline silica, quartz	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**

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

Contaminated Packaging

Follow all applicable national or local regulations.

SECTION 14: Transport Information**IMDG/IMO**

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

RID

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

ADR

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

IATA/ICAO

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental hazard:	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****EINECS Inventory**

This product, and all its components, complies with EINECS

US TSCA Inventory

Product contains one or more components not listed on the inventory.

Canadian DSL Inventory

Product contains one or more components not listed on the inventory.

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.

15.2. Chemical Safety Assessment

No information available

SECTION 16: Other Information**Full text of R-phrases referred to under Sections 2 and 3**

R34 Causes burns.

R37 Irritating to respiratory system.

R43 May cause sensitization by skin contact.

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R49 May cause cancer by inhalation.

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

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

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/

Revision Date: 21-Jan-2015

Revision Note

Change to physical properties SECTION: 8

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

Disclaimer Statement

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End of Safety Data Sheet