

SAFETY DATA SHEET

CL-28M CROSSLINKER

Revision Date: 21-Jan-2016

Revision Number: 21

1. Product and Company Identification

Product Name

Product Trade Name: CL-28M CROSSLINKER

Other Names

Synonyms: None

Product Code: HM000346

Recommended Use

Recommended Use Crosslinker

Uses Advised Against No information available

Company Name, Address and Contact Details

Manufacturer/Supplier Halliburton New Zealand
1 Paraite Rd,
Bell Block, New Plymouth
New Zealand Registration No.: 824207

E-Mail address: fdunexchem@halliburton.com

Emergency Telephone Number +64 800 451719

New Zealand National Poisons Centre 0800 764 766 (24 hours)

2. Hazard(s) Identification

Statement of Hazardous Nature

Classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulation 2001;
Not Classified as dangerous good according to NZS 5433:2012, UN, IMDG or IATA

Classification

6.4A Irritating to the eye

6.8A Known or presumed human reproductive or developmental toxicants

Hazard and Precautionary Statements

Hazard Pictograms



Signal Word

Danger

Hazard Statements

H319 - Causes serious eye irritation

H360 - May damage fertility or the unborn child

Precautionary Statements

Prevention

P103 - Read label before use

P104 - Read Safety Data Sheet before use.

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P280 - Wear eye protection/face protection
 P281 - Use personal protective equipment as required

Response

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

Storage

P405 - Store locked up

Disposal

P501 - Dispose of contents/container to an approved landfill

Contains

Substances	CAS Number	Substance HSNO Classification
Borate Salts	Proprietary	6.1E (Oral) 6.4A 6.8A
Crystalline silica, quartz	14808-60-7	6.7A 6.9A

2.3. Other Hazards

None known

3. Composition and Information on Ingredients

Substances	CAS Number	PERCENT (w/w)
Borate Salts	Proprietary	30 - 60%
Crystalline silica, quartz	14808-60-7	1 - 5%

4. First-Aid Measures

Requirements for First Aid or Medical Care**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

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Workplace Facilities Required

None

Relation to Health Effect**Most Important Symptoms/Effects**

Causes eye irritation Potential reproductive hazard. May cause birth defects. If this product becomes dry, it may produce respirable crystalline silica dust. Carcinogen. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease. Prolonged or repeated exposure may cause damage to organs.

Medical Attention and Special Treatment**Notes to Physician**

Treat symptomatically

5. Fire-fighting measures

Type of Hazard**Flammability Hazard**

Non-flammable

5.1. Extinguishing media**Suitable Extinguishing Media**

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

HAZCHEM Code

Hazchem Code: None Allocated

Special Protective Equipment and Precautions for Fire Fighters**Special Protective Equipment for Fire-Fighters**

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

Special Exposure Hazards

Decomposition in fire may produce harmful gases.

6. Spillage, Accidental Release Measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment.

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.

7. Handling and storage**7.1. Precautions for Safe Handling****Handling Precautions**

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.

Handling Practices**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

Approved Handlers

This product does NOT require an approved handler.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Keep container closed when not in use. Product has a shelf life of 24 months.

Store Site Requirements

No special controls required

Packaging

No special packaging required

8. Exposure Controls and Personal Protection**Workplace Exposure Standards****Exposure Limits**

Substances	CAS Number	New Zealand WES	ACGIH TLV-TWA
Borate Salts	Proprietary	Not applicable	Not applicable
Crystalline silica, quartz	14808-60-7	TWA: 0.2 mg/m ³	TWA: 0.025 mg/m ³

Engineering Controls**Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Personal Protective Equipment (PPE)

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	None known.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	Color:	Gray to tan
Odor:	Odorless	Odor Threshold:	No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
pH:	No data available
Freezing Point/Range	0 °C
Melting Point/Range	No data available
Boiling Point/Range	100 °C / 212 °F
Flash Point	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.27
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
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10. Stability and Reactivity

10.2. Chemical Stability

Stable

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).

Hazardous Reactions

Hazardous Polymerization: Will Not Occur

11. Toxicological Information

Health Effect from Likely Routes of Exposure

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
Skin Contact
Ingestion

May cause respiratory irritation.

Causes eye irritation.

May cause mild skin irritation.

May cause abdominal pain, vomiting, nausea, and diarrhea.

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.

Prolonged or repeated exposure may cause reproductive system damage.

Toxicity Data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Borate Salts	Proprietary	3493-6080 mg/kg (Rat) (similar substance) 3450 mg/kg (Male Rat) (similar substance)	> 2000 mg/kg (Rabbit) (similar substance)	> 2 mg/L (Rat) 4h (similar substance) > 2.12 mg/L (Rat) 4h (similar substance) > 2.04 mg/L (Rat) 4h (similar substance)
Crystalline silica, quartz	14808-60-7	>15,000 mg/kg (Human)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Borate Salts		Non-irritating to the skin (Rabbit) (similar substances)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Borate Salts		Causes moderate eye irritation. (Rabbit) (similar substances)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Borate Salts		Did not cause sensitization on laboratory animals (guinea pig) (similar substances)
Crystalline silica, quartz	14808-60-7	No information available.

Substances	CAS Number	Respiratory Sensitization
Borate Salts		No information available
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	Mutagenic Effects
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Borate Salts		In vitro tests did not show mutagenic effects. (similar substances)
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Borate Salts		Did not show carcinogenic effects in animal experiments (similar substances)
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
Borate Salts		Experiments have shown reproductive toxicity effects on laboratory animals (similar substances)
Crystalline silica, quartz	14808-60-7	No information available

Substances	CAS Number	STOT - single exposure
Borate Salts		None under normal use conditions
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Borate Salts		None under normal use conditions
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Borate Salts		Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable

12. Ecological Information

12.1. Toxicity Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Borate Salts	Proprietary	EC50 (72h) 1398.64 mg/L (Skeletonea costatum)	LC50 (96h) > 320 mg/L (Scophthalmus maximus) LC50 (96h) > 1100 mg/L (Oncorhynchus mykiss) LC50 (96h) > 1021 mg/L (Lepomis macrochirus) LD50 (28d) 65 mg/L (Oncorhynchus mykiss)	No information available	EC50 (48h) 7341.67 mg/L (Acartia tonsa) EC50 (48h) 133 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Borate Salts	Proprietary	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
Borate Salts	Proprietary	0.175
Crystalline silica, quartz	14808-60-7	No data available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Borate Salts	Proprietary	No information available
Crystalline silica, quartz	14808-60-7	No information available

Ecotoxicity Hazard Statements

None known

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

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations**13.1. Waste treatment methods****Disposal Method**

Disposal should be made in accordance with federal, state, and local regulations. Allowable disposal practices include exporting from NZ as a waste hazardous substance or treating the substance by depositing in a landfill or incinerator so it is no longer hazardous.

Contaminated Packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

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

NZ 5433.1999

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

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****New Zealand Inventory of Chemicals**

Product contains one or more components not listed on inventory.

HSNO Approval Number

HSR002503

Group Name

Additives, Process Chemicals and Raw Materials (Subsidiary hazard HSR002503)

HSNO ControlsRefer to the NZ EPA website for more information: <http://www.epa.govt.nz>**Approved Handlers**

Not Applicable

Poisons Schedule: None Allocated

16. Other information

The following sections have been revised since the last issue of this SDS

Section 9. Physical and Chemical Properties

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms

bw – body weight CAS – Chemical Abstracts Service EC50 – Effective Concentration 50% LC50 – Lethal Concentration 50% LD50 – Lethal Dose 50% LL50 – Lethal Loading 50% MARPOL – International Convention for the Prevention of Pollution from Ships mg/kg – milligram/kilogram mg/L – milligram/liter NOEC – No Observed Effect Concentration OEL – Occupational Exposure Limit ppm – parts per million TWA – Time-Weighted Average VOC – Volatile Organic Carbon C – Celsius IATA/ICAO – International Air Transport Association / International Civil Aviation Organization IMDG/IMO – International Maritime Dangerous Goods / International Maritime Organization mg/m³ – milligram/cubic meter mm – millimeter mmHg – millimeter mercury w/w – weight/weight d – day

Key literature references and sources for data

www.ChemADVISOR.com/

NZ CCID

OSHA

ECHA C&L

Revision Date:

21-Jan-2016

Revision Note

SDS sections updated:

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Disclaimer Statement

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End of Safety Data Sheet