HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

LIME

Revision Date: 21-Apr-2015 **Revision Number:** 40

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

1.1. Product Identifier

Product Name LIME
Internal ID Code HM003683

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

Recommended Use pH Control
Sector of use Refer to the Annex for a listing of uses.
Product category Not applicable
Process categories PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
PROC 8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC15 - Use as a laboratory reagent
Article categories Not applicable
Environmental release category ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles ERC7 - Industrial use of substances in closed systems
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

For further information, please contact
E-Mail address: 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 1 - (H318)

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H315 - Causes skin irritation
H318 - Causes serious eye damage

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
P310 - Immediately call a POISON CENTER or doctor/physician

Contains

Substances	**CAS Number**
Calcium hydroxide	1305-62-0

2.3. Other Hazards

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.1. Substances

Substance

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Calcium hydroxide	215-137-3	1305-62-0	60 - 100%	Skin Irrit. 2 (H315) Eye Corr. 1 (H318)	01-2119475151-45

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, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

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

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

Causes serious eye damage. Causes skin irritation.

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

All standard fire fighting media

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

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. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. 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

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 creating or inhaling dust. 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 acids. Store in a cool, dry location. Store locked up.

7.3. Specific End Use(s)

Exposure Scenario Please refer to the attached Annex for a listing of exposure scenarios.

Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Calcium hydroxide	1305-62-0	Not applicable	TWA: 5 mg/m³ STEL: 15 mg/m³	Not applicable	5 mg/m³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Calcium hydroxide	1305-62-0	5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Calcium hydroxide	1305-62-0	TWA: 2 mg/m³ STEL" 4 mg/m³	5 mg/m³ TWA 15 mg/m³ STEL (calculated)	TWA: 5 mg/m³	TWA: 5 mg/m³ STEL: 10 mg/m³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Calcium hydroxide	1305-62-0	Not applicable	TWA: 2 mg/m³	TWA: 5 mg/m³	TWA: 2 mg/m³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Calcium hydroxide	1305-62-0	TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³

Derived No Effect Level (DNEL)

Worker

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Hazards for the eyes - local effects
Calcium hydroxide	Not available	Not available	1 mg/m³	4 mg/m³	Not available	Not available	Not available	Not available	Not available

General Population

Substances	Long-term exposure - systemic effects, Inhalation	Acute / short term exposure - systemic effects, Inhalation	Long-term exposure - local effects, Inhalation	Acute / short term exposure - local effects, Inhalation	Long-term exposure - systemic effects, Dermal	Acute / short term exposure - systemic effects, Dermal	Long-term exposure - local effects, Dermal	Acute / short term exposure - local effects, Dermal	Long-term exposure - systemic effects, Oral	Acute / short term exposure - local effects, Oral	Hazards for the eyes - local effects
Calcium hydroxide	Not available	Not available	1 mg/m³	4 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC)

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Calcium hydroxide	0.49 mg/L	0.32 mg/L	0.49 mg/L	3 mg/L	Not available	Not available	Not available	1080 mg/kg soil dw	Not available

8.2. Exposure controls

Engineering Controls Use in a well ventilated area.

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 If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Dust/mist respirator. (N95, P2/P3)

Hand Protection Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection Rubber apron.

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

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

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: Solid
Color: White
Odor: Odorless
Odor Threshold: No information available

Property Remarks/ - Method	Values
pH:	12.2
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.24
Water Solubility	Partly soluble
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

Molecular Weight	74.1
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
None anticipated
10.5. Incompatible Materials
Strong acids.
10.6. Hazardous Decomposition Products
None known.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation	May cause respiratory irritation.
Eye Contact	Causes serious eye damage.
Skin Contact	Causes skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation

Calcium hydroxide	1305-62-0	7340 mg/kg (Rat) > 2000 mg/kg (Rat)	> 2500 mg/kg (Rabbit)	No data available

Substances	**CAS Number**	**Skin corrosion/irritation**
Calcium hydroxide	1305-62-0	Skin, rabbit: May cause moderate skin irritation.

Substances	**CAS Number**	**Eye damage/irritation**
Calcium hydroxide	1305-62-0	Eye, rabbit: Causes severe eye irritation.

Substances	**CAS Number**	**Skin Sensitization**
Calcium hydroxide	1305-62-0	Did not cause sensitization on laboratory animals (guinea pig)

Substances	**CAS Number**	**Respiratory Sensitization**
Calcium hydroxide	1305-62-0	No data of sufficient quality are available.

Substances	**CAS Number**	**Mutagenic Effects**
Calcium hydroxide	1305-62-0	In vitro tests did not show mutagenic effects

Substances	**CAS Number**	**Carcinogenic Effects**
Calcium hydroxide	1305-62-0	Did not show carcinogenic effects in animal experiments (similar substances)

Substances	**CAS Number**	**Reproductive toxicity**
Calcium hydroxide	1305-62-0	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)

Substances	**CAS Number**	**STOT - single exposure**
Calcium hydroxide	1305-62-0	May cause mild respiratory irritation.

Substances	**CAS Number**	**STOT - repeated exposure**
Calcium hydroxide	1305-62-0	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	**CAS Number**	**Aspiration hazard**
Calcium hydroxide	1305-62-0	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**
Calcium hydroxide	1305-62-0	EC50 (72h) 184.57 mg/L (Pseudokirchnerella subcapitata)	TLM96 100-500 ppm (Oncorhynchus mykiss) 33.884 mg/L (Clarias gariepinus) LC50 (96h) 50.6 mg/L (Oncorhynchus mykiss) LC50 (96h) 457 mg/L (Gasterosteus aculeatus)	EC50 (3h) 300.4 mg/L (respiration rate) (activated sludge of a predominantly domestic sewage)	TLM96 478,520 ppm (Mysidopsis bahia) EC50 (48h) 49.1 mg/L (Daphnia magna) LC50 (96h) 158 mg/L (Crangon septemspinosa) NOEC (14d) 32 mg/L (Crangon septemspinosa)

12.2. Persistence and degradability

Substances	**CAS Number**	**Persistence and Degradability**
Calcium hydroxide	1305-62-0	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Calcium hydroxide	1305-62-0	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Calcium hydroxide	1305-62-0	No information available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Calcium hydroxide	Not applicable

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 Empty container completely. Transport with all closures in place. Return for reuse or dispose in a sanitary landfill according to 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.

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 Hazards: Not applicable

ADR

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

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 1: Low hazard to waters.

15.2. Chemical Safety Assessment
Yes

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H315 - Causes skin irritation
H318 - Causes serious eye damage

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/
NZ CCID

Revision Date: 21-Apr-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