HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

CAUSTIC FLAKE

Revision Date: 03-Feb-2014 **Revision Number:** 13

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

1.1 Product Identifier

Product Name CAUSTIC FLAKE

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.

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**
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

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)
Substances/mixtures corrosive to metal.	Category 1 - (H290)

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 C - Corrosive.

Risk Phrases R35 Causes severe burns.

2.2 Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H290 - May be corrosive to metals

Precautionary Statements - EU (§28, 1272/2008)
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	**CAS Number**
Sodium hydroxide	1310-73-2

2.3 Other Hazards
None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT (w/w)	EEC Classification	EU - CLP Substance Classification	REACH No.
Sodium hydroxide	215-185-5	1310-73-2	60 - 100%	C; R35	Skin Corr. 1A (H314)	01-2119457892-27

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

4. FIRST AID MEASURES

4.1 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.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Destroy or properly dispose of contaminated shoes.

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.

4.2 Most Important symptoms and effects, both acute and delayed

May cause eye, skin, and respiratory burns.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

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

May form explosive mixtures with strong acids. Reaction with steel and certain other metals generates flammable hydrogen gas.

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.

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

Prevent from entering sewers, waterways, or low areas.

6.3 Methods and material for containment and cleaning up

Neutralize to pH of 6-8. 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

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use. Launder contaminated clothing before reuse.

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.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Limits

Substances	CAS Number	EU	UK OEL	Netherlands	France OEL
Sodium hydroxide	1310-73-2	Not applicable	STEL: 2 mg/m³	Not applicable	2 mg/m³

Substances	CAS Number	Germany MAK/TRK	Spain	Portugal	Finland
Sodium hydroxide	1310-73-2	2 mg/m³	2 mg/m³ VLA-EC	Not applicable	STEL: 2 mg/m³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Sodium hydroxide	1310-73-2	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Sodium hydroxide	1310-73-2	Not applicable	NDSCh: 1 mg/m³ NDS: 0.5 mg/m³	TWA: 2 mg/m³ STEL: 2 mg/m³	TWA: 1 mg/m³

Substances	CAS Number	Denmark
Sodium hydroxide	1310-73-2	Not applicable

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
Sodium hydroxide	Not available	Not available	1 mg/m³	Not available	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
Sodium hydroxide	Not available	Not available	1 mg/m³	Not available	Not available	Not available	Not available	Not available	Not available	Not available	Not available

Predicted No Effect Concentration (PNEC)

8.2 Exposure controls

Engineering Controls Use in a well ventilated area. Localized ventilation should be used to control dust levels.

Personal protective equipment

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

Hand Protection Impervious rubber gloves.

Skin Protection Full protective chemical resistant clothing.

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 No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State: Solid **Color:** White to off white

Odor: Odorless **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	14	
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	2.13	
Water Solubility	Soluble 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

Molecular Weight	40
VOC Content (%)	No data available

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
Strong acids. Peroxides. Halogenated compounds. Prolonged contact with aluminum, lead, or zinc may liberate flammable hydrogen.
10.6 Hazardous Decomposition Products
None known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects

Acute Toxicity

Inhalation	Causes severe respiratory burns. May cause chemical pneumonia.
Eye Contact	Causes severe eye burns.
Skin Contact	Causes severe burns.
Ingestion	Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity Prolonged, excessive exposure may cause erosion of the teeth.

LD50 Oral:	140 - 340 mg/kg (rat)
LD50 Dermal:	1350 mg/kg (rabbit)

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	1310-73-2	No data available	1350 mg/kg (Rabbit)	No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium hydroxide	1310-73-2	Corrosive to skin (rabbit)

Substances	CAS Number	Eye damage/irritation
Sodium hydroxide	1310-73-2	Corrosive to eyes (rabbit)

Substances	CAS Number	Skin Sensitization
Sodium hydroxide	1310-73-2	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Sodium hydroxide	1310-73-2	No information available

Substances	CAS Number	Mutagenic Effects
Sodium hydroxide	1310-73-2	Not regarded as mutagenic

Substances	CAS Number	Carcinogenic Effects

Sodium hydroxide	1310-73-2	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive Toxicity
Sodium hydroxide	1310-73-2	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - single exposure
Sodium hydroxide	1310-73-2	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
Sodium hydroxide	1310-73-2	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Sodium hydroxide	1310-73-2	Not applicable

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Sodium hydroxide	1310-73-2	No information available	LC50: 45.4 mg/l (Oncorhynchus mykiss)	No information available	EC50(48 h): 40.4 mg/L (Ceriodaphnia sp.)

12.2 Persistence and degradability
The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
Does not bioaccumulate

12.4 Mobility in soil
No information available

12.5 Results of PBT and vPvB assessment
No information available.

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.
Contaminated Packaging 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: UN1823,
UN Proper Shipping Name: Sodium Hydroxide, Solid
Transport Hazard Class(es): , 8
Packing Group: , II
Environmental Hazards: Not applicable
EMS: EmS F-A, S-B

RID

UN Number:	UN1823,
UN Proper Shipping Name:	Sodium Hydroxide, Solid
Transport Hazard Class(es):	, 8
Packing Group:	, II
Environmental hazard:	Not applicable

ADR

UN Number:	UN1823,
UN Proper Shipping Name:	Sodium Hydroxide, Solid
Transport Hazard Class(es):	, 8
Packing Group:	, II
Environmental hazard:	Not applicable

IATA/ICAO

UN Number:	UN1823,
UN Proper Shipping Name:	Sodium Hydroxide, Solid
Transport Hazard Class(es):	, 8
Packing Group:	, II
Environmental hazard:	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

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

International Inventories

All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:.

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

No information available

16. OTHER INFORMATION

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

R35 Causes severe burns.

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

H314 - Causes severe skin burns and eye damage

Key literature references and sources for data

www.ChemADVISOR.com/

Revision Date: 03-Feb-2014

Revision Note

Not applicable

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