

# SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

## BARASIL®-S

Revision Date: 23-Sep-2015

Revision Number: 11

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

#### 1.1. Product Identifier

Product Name BARASIL®-S  
Internal ID Code HM003530

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

Recommended Use Shale Inhibitor

#### 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**

Sodium silicate

**CAS Number**

1344-09-8

**2.3. Other Hazards**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

**SECTION 3: Composition/information on Ingredients****3.2. Mixtures**

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Sodium silicate	215-687-4	1344-09-8	30 - 60%	Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	01-2119448725-31

**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**

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.

**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 severe eye irritation which may damage tissue. 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

Water fog, carbon dioxide, foam, dry chemical.

#### 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

Decomposition in fire may produce harmful gases.

### 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 contact with skin, eyes and clothing. Avoid breathing vapors. 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

Isolate spill and stop leak where safe. Neutralize to pH of 6-8. Scoop up and remove. Do NOT spread spilled product with water.

### 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

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Material is slippery underfoot.

#### 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 well ventilated area. Keep container closed when not in use. Product has a shelf life of 36 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
Sodium silicate	1344-09-8	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Sodium silicate	1344-09-8	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Sodium silicate	1344-09-8	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Sodium silicate	1344-09-8	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Sodium silicate	1344-09-8	Not applicable	Not applicable	Not applicable	Not applicable

**Derived No Effect Level (DNEL)**

No information available.

**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 silicate	5.61 mg/m <sup>3</sup>	Not available	Not available	Not available	1.59 mg/kg bw/day	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 silicate	1.38 mg/m <sup>3</sup>	Not available	Not available	Not available	0.80 mg/kg bw/day	Not available	Not available	Not available	0.80 mg/kg	Not available	Not available

**Predicted No Effect Concentration (PNEC)**

No information available.

Substances	Freshwater	Marine water	Intermittent release	Sewage treatment plant	Sediment (freshwater)	Sediment (marine water)	Air	Soil	Secondary poisoning
Sodium silicate	7.5 mg/L	1 mg/L	7.5 mg/L	348 mg/L	Not available	Not available	Not available	Not available	Not available

**8.2. Exposure controls****Engineering Controls**

Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**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**

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

**Hand Protection**

Butyl rubber gloves. Impervious rubber gloves. Neoprene gloves. Nitrile 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** 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:** Liquid**Color:** Clear to hazy**Odor:** Slightly soapy**Odor Threshold:** No information availablePropertyValuesRemarks/ - Method**pH:**

11 - 13

**Freezing Point/Range**

-2 °C

**Melting Point/Range**

No data available

**Boiling Point/Range**

100 °C / 213 °F

**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

<b>Specific Gravity</b>	1.5
<b>Water Solubility</b>	Miscible with water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

**9.2. Other information**

<b>VOC Content (%)</b>	No data available
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<b>SECTION 10: Stability and Reactivity</b>
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**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. Amphoteric metals such as aluminum, magnesium, lead, tin, or zinc.

**10.6. Hazardous Decomposition Products**

Toxic fumes.

<b>SECTION 11: Toxicological Information</b>
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**11.1. Information on Toxicological Effects****Acute Toxicity****Inhalation**

May cause respiratory irritation.

**Eye Contact**

Causes severe eye irritation which may damage tissue. May cause eye burns.

**Skin Contact**

Causes moderate 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
Sodium silicate	1344-09-8	3400 mg/kg (Rat)	> 5000 mg/kg (Rat) (similar substance)	> 2.06 mg/L (Rat) 4h (similar substance – Potassium silicate)

Substances	CAS Number	Skin corrosion/irritation
Sodium silicate	1344-09-8	Causes moderate skin irritation. (Rabbit)

Substances	CAS Number	Eye damage/irritation
Sodium silicate	1344-09-8	Causes severe eye irritation which may damage tissue. (Rabbit)

Substances	CAS Number	Skin Sensitization
Sodium silicate	1344-09-8	Did not cause sensitization on laboratory animals (mouse) (similar substances)

Substances	CAS Number	Respiratory Sensitization
Sodium silicate	1344-09-8	No information available

Substances	CAS Number	Mutagenic Effects
Sodium silicate	1344-09-8	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.

Substances	CAS	Carcinogenic Effects
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	<b>Number</b>	
Sodium silicate	1344-09-8	No information available.
<b>Substances</b>	<b>CAS Number</b>	<b>Reproductive toxicity</b>
Sodium silicate	1344-09-8	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances)
<b>Substances</b>	<b>CAS Number</b>	<b>STOT - single exposure</b>
Sodium silicate	1344-09-8	No information available.
<b>Substances</b>	<b>CAS Number</b>	<b>STOT - repeated exposure</b>
Sodium silicate	1344-09-8	No significant toxicity observed in animal studies at concentration requiring classification.
<b>Substances</b>	<b>CAS Number</b>	<b>Aspiration hazard</b>
Sodium silicate	1344-09-8	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
Sodium silicate	1344-09-8	EC50 (72h) > 345 mg/L (growth rate) (Scenedesmus subspicatus) EC0 (72h) 35 mg/L (growth rate) (Scenedesmus subspicatus)	LC50 (96h) 1108 mg/L (Danio rerio) LC50 (96h) 260 – 310 mg/L (Oncorhynchus mykiss)	EC0 (0.5h) 3454 mg/L (Pseudomonas putida)	EC50 (48h) 1700 mg/L (Daphnia magna)

### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Sodium silicate	1344-09-8	The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sodium silicate	1344-09-8	No information available

### 12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium silicate	1344-09-8	No information available

### 12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Sodium silicate	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****Contaminated Packaging**

Disposal should be made in accordance with federal, state, and local regulations.  
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 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/NDL** - 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

## 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/](http://www.ChemADVISOR.com/)

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### 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**