SDS no. U028
Version 4
Revision date 03-Jun-2014
Supersedes date 11-Jun-2010

Safety Data Sheet
Gelling Agent U28 - 30% Active

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name Gelling Agent U28 - 30% Active
Product code U028
Norway Pr. no. 51582

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

Recommended Use Used as a gelling agent in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards

Skin corrosion/irritation	Category 1 Subcategory 1A

Environmental hazards Not classified

Physical Hazards

Substances/mixtures corrosive to metal	Category 1

2.2 Label elements

Signal word
DANGER

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

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ 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
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Supplementary precautionary statements
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P363 - Wash contaminated clothing before reuse
P310 - Immediately call a POISON CENTER or doctor/physician
P390 - Absorb spillage to prevent material damage
P501 - Dispose of contents/container in accordance with local regulations.

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

Indication of danger
C - Corrosive

R-code(s)
R35

Contains
Sodium hydroxide

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

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Sodium hydroxide	215-185-5	1310-73-2	30	C;R35	Met. Corr. 1 (H290) Skin Corr. 1A (H314) Eye Dam. 1(H318)	01-2119457892-27-xxxx

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First-Aid Measures

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

Ingestion Do NOT induce vomiting. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Skin contact Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

Eye contact Get immediate medical attention. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye.

4.2 Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Contact with metals may evolve flammable hydrogen gas.

Hazardous combustion products
Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG
2R

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Store between 15-25 deg. C (59-77 deg. F) Avoid extreme temperatures. Store away from incompatibles, Strong acids. Halogenated compounds Metals

Storage class Corrosive storage.

Packaging material High density polyethylene (HDPE) drum or can

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL	Austria	Australia	Denmark
Sodium hydroxide	Not determined	4 mg/m³ STEL inhalable fraction, 8x5 min 2 mg/m³ TWA inhalable fraction	2 mg/m³ Peak	2 mg/m³ Ceiling

Component	Malaysia	France	Germany	Hungary
Sodium hydroxide	2 mg/m³ Ceiling	2 mg/m³TWA	Not determined	2 mg/m³ STEL 2 mg/m³ TWA

Component	New Zealand	Italy	Netherlands	Norway
Sodium hydroxide	2 mg/m³ Ceiling	2 mg/m³ Ceiling	Not determined	2 mg/m³ Ceiling

Component	Poland	Portugal	Romania	Russia
Sodium hydroxide	1 mg/m³ STEL NDSCh 0.5 mg/m³ TWA NDS	2 mg/m³ Ceiling	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
Sodium hydroxide	2 mg/m³ STEL	2 mg/m³ STEL inhalable dust 2 mg/m³ TWA MAK	Not determined	2 mg/m³ STEL

Notes
No biological limit allocated

Derived No Effect Level (DNEL)

Long term exposure local effects
Sodium hydroxide
Inhalation 1 mg/m³

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles. Face-shield.
Hand protection	Wear chemical resistant gloves such as nitrile or neoprene, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn, Respirator with combination filter for vapour/particulate (EN 141), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear appropriate personal protective clothing to prevent skin contact, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before breaks and immediately after handling the product, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Odor	Odorless
Color	Colorless
Odor threshold	Not applicable

Property	**Values**	**Remarks**
pH	13.5	
pH @ dilution		
Melting/freezing point	8 °C / 46 °F	

Boiling point/range	115 °C / 239 °F	
Flash point	No information available	
Evaporation rate (BuAc =1)		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.3	@20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	Not Applicable	
Decomposition temperature	No information available	
Kinematic viscosity		
Dynamic viscosity	13 mPa s	@ 20 °C
Log Pow	No information available	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

Gives off hydrogen by reaction with metals.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Avoid extreme temperatures. Store at ambient conditions.

10.5 Incompatible materials

Strong acids. Halogenated compounds. Metals.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information Causes severe skin burns and eye damage.

Inhalation Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

Eye contact Causes burns. Causes serious eye damage.

Skin contact Corrosive. Causes burns.

Ingestion Can burn mouth, throat, and stomach.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	No data available	1350 mg/kg (Rabbit)	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects No evidence of mutagenic properties.

Carcinogenicity No evidence of carcinogenic properties.

Reproductive toxicity None known.

Routes of exposure Skin contact. Eye contact.

Routes of entry No route of entry noted.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium hydroxide	= 45.4 mg/L LC50 Oncorhynchus mykiss 96 h	No information available	No information available

12.2 Persistence and degradability

This product is expected to be readily biodegradable.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Mobility
The product is water soluble, and may spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of as special waste in compliance with local and national regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 02 04

14. Transport information

14.1 UN Number

UN/ID No. (ADR/RID/ADN/ADG)	UN1824
UN No. (IMDG)	UN1824
UN No. (ICAO)	UN1824

14.2 Proper shipping name
SODIUM HYDROXIDE SOLUTION,

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	8
IMDG Hazard class	8
ICAO Hazard class/division	8

14.4 Packing group

ADR/RID/ADN/ADG Packing group	PG II
IMDG Packing group	PG II
ICAO Packing group	PG II

14.5 Environmental hazard
No

14.6 Special precautions

Hazard identification no (ADR)	80
EmS (IMDG)	F-A, S-B
Emergency action code	2R
Tunnel restriction code	(E)
Hazchem code ADG	2R

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

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

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Sodium hydroxide
Schedule 6
Schedule 5

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals

Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals)
Supersedes date	11-Jun-2010
Revision date	03-Jun-2014
Version	4
The following sections have been revised:	SDS fully updated in the new database.

Text of R phrases mentioned in Section 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
H290 - May be corrosive to metals

N/A - Not Applicable, N/D - Not Determined.

Disclaimer

The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.