

Safety data sheet number B512

Version 1

Revision date 30/Sep/2015

Supercedes date None



Safety Data Sheet YF100LGD Crosslinker B512

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

1.1 Product identifier

Product name YF100LGD Crosslinker B512
Product code B512

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

Recommended use Crosslinker in oilfield applications

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification

Schlumberger Oilfield UK PLC
Victory House, Churchill Court
Manor Royal, Crawley
West Sussex RH10 9LU
+ 47 51577424
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

Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poison information centre: +47 22 59 13 00

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Skin corrosion/irritation	Category 1 Subcategory 1A
Serious eye damage/eye irritation	Category 1

Environmental hazards Not classified

Physical Hazards

Substances/mixtures corrosive to metal	Category 1
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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)

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower

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

P501 - Dispose of contents/container in accordance with local regulations.

P234 - Keep only in original container

Supplementary precautionary statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 - Wash contaminated clothing before re-use

P390 - Absorb spillage to prevent material damage

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P406 - Store in corrosive resistant polypropylene container with a resistant inliner

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Contains

2,2',2''-nitrilotriethanol

Sodium hydroxide

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

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
2,2',2"-nitritotriethanol	203-049-8	102-71-6	5-10	-	Not classified	01-2119486482-31-x xxx
Sodium hydroxide	215-185-5	1310-73-2	<20	C;R35	Met. Corr. 1 (H290) Skin Corr. 1A (H314) Eye Dam. 1(H318)	01-2119457892-27-x xxx

Comments

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

4. First aid measures

4.1 First Aid

Inhalation	Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.
Ingestion	Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.
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	Remove contact lenses. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

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**

Use extinguishing media appropriate for surrounding material.

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**

None known.

Hazardous combustion products

When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

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.

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. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

Hygiene measures

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

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. Keep away from metals. Strong oxidising agents. Strong acids.

Storage class Corrosive storage.

Packaging material Use specially constructed containers only.

Packaging materials to be avoided Corrosive to Metals.

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits Exposure Limits as listed above are relevant to commission of Grenswaarden which is formerly known as commission MAC-values.

Component	EU OEL - Third List	Austria	Australia	Denmark
2,2',2"-nitritoltriethanol	Not determined	Not determined	5 mg/m ³ TWA	0.5 ppm TWA 3.1 mg/m ³ TWA
Sodium hydroxide	Not determined	4 mg/m ³ STEL inhalable fraction, 8x5 min 2 mg/m ³ TWA inhalable fraction	2 mg/m ³ Peak	2 mg/m ³ Ceiling

Component	Malaysia	France	Germany	Hungary
2,2',2"-nitritoltriethanol	5 mg/m ³ TWA	Not determined	5 mg/m ³ TWA	Not determined

Sodium hydroxide	2 mg/m ³ Ceiling	2 mg/m ³	Not determined	2 mg/m ³ STEL 2 mg/m ³ TWA
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Component	New Zealand	Italy	Netherlands	Norway
2,2',2"-nitrilotriethanol	5 mg/m ³ TWA	Not determined	Not determined	5 mg/m ³ TWA 10 mg/m ³ STEL
Sodium hydroxide	2 mg/m ³ Ceiling	2 mg/m ³ Ceiling	Not determined	2 mg/m ³ Ceiling

Component	Poland	Portugal	Romania	Russia
2,2',2"-nitrilotriethanol	Not determined	5 mg/m ³ TWA	Not determined	Not determined
Sodium hydroxide	1 mg/m ³ STEL NDSh 0.5 mg/m ³ TWA NDS	2 mg/m ³ Ceiling	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
2,2',2"-nitrilotriethanol	5 mg/m ³ TWA VLA-ED	20 mg/m ³ STEL inhalable 5 mg/m ³ TWA MAK	Not determined	Not determined
Sodium hydroxide	2 mg/m ³ STEL	2 mg/m ³ STEL inhalable 2 mg/m ³ TWA MAK	Not determined	2 mg/m ³ STEL

Derived No Effect Level (DNEL)

Long term exposure local effects

2,2',2"-nitrilotriethanol

Inhalation 5 mg/m³

Sodium hydroxide

Inhalation 1 mg/m³

Long term exposure systemic effects

2,2',2"-nitrilotriethanol

Dermal 6.3 mg/kg

Inhalation 5 mg/m³

Predicted No Effect Concentration (PNEC)

2,2',2"-nitrilotriethanol

Fresh Water 0.32 mg/L

Sea Water 0.032 mg/L

Fresh water sediment 1.7 mg/kg

Sea sediment 0.17 mg/kg

Soil 0.151 mg/kg

Impact on Sewage Treatment 10 mg/L

Intermittent release 5.12 mg/L

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

Chemical splash goggles and face shield.

Hand protection

Impervious gloves made of: Neoprene, Rubber gloves, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection

At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used, Use respirator with inorganic vapor/acid gas protection (E, yellow), In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Skin and body protection

Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures

Wash hands before eating, drinking or smoking, 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	Aqueous solution
Odour	No information available
Colour	Clear
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	13	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate		
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	1.2	
Bulk density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

Corrosive. Corrosive to Metals.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidising agents. Strong acids. Metals.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation

Causes burns. Inhaled corrosive substances can lead to a toxic oedema of the lungs. Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing.

Eye contact

Causes serious eye damage.

Skin contact

Causes severe skin burns.

Ingestion

Causes burns.

Unknown acute toxicity

Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2',2"-nitrilotriethanol	= 4190 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	No data available
Sodium hydroxide	No data available	1350 mg/kg (Rabbit)	No data available

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

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Skin contact. Eyes. Inhalation. Ingestion.

Routes of entry Ingestion. Skin contact. Eye contact. Inhalation.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard Not Applicable.

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. Large amounts will affect pH and harm aquatic organisms

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
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2,2',2"-nitrilotriethanol	> 1000 mg/L LC50 Pimephales promelas 96 h 450 - 1000 mg/L LC50 Lepomis macrochirus 96 h 10600 - 13000 mg/L LC50 Pimephales promelas 96 h	= 169 mg/L EC50 Desmodesmus subspicatus 96 h = 216 mg/L EC50 Desmodesmus subspicatus 72 h	= 1386 mg/L EC50 Daphnia magna 24 h
Sodium hydroxide	= 45.4 mg/L LC50 Oncorhynchus mykiss 96 h	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Mobility

Soluble in water.

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 in accordance with local regulations.

Contaminated packaging

Empty containers should be transported/delivered using a registered waste carrier for local recycling 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: Waste Code: 16 03 03 - inorganic wastes containing dangerous substances 7132 Inorganic bases.

14. Transport information

14.1 UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN3266
UN No. (IMDG)	UN3266
UN No. (ICAO)	UN3266

14.2 Proper shipping name

CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.

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	III
IMDG Packing group	III
ICAO Packing group	III

14.5 Environmental hazard

No



14.6 Special precautions

Hazard ID	80
EmS (IMDG)	F-A, S-B
Emergency action code	2X
Tunnel restriction code	(E)

14.7 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

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

2,2',2''-nitrioltriethanol
Schedule 5

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.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Does not Comply
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel
Revision date	30/Sep/2015
Version	1
The following sections have been revised:	New.

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

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.