



Safety Data Sheet Liquid Breaker Aid J318

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

1.1 Product identifier

Product name Liquid Breaker Aid J318
Product code J318

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

Recommended Use Used as a fracturing additive 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 Not classified
Environmental hazards Not classified
Physical Hazards Not classified

2.2 Label elements

Signal word

None

Hazard statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

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Indication of danger

Not classified

Contains

2,2',2"-nitrioltriethanol

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-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 |
|---------------------------|-----------|----------|------------------|-------------------------|---------------------------------|---------------------------|
| 2,2',2"-nitrioltriethanol | 203-049-8 | 102-71-6 | 60-100 | - | Not classified | 01-2119486482-31-x xxx |

Ingredient notes

Trade Control Substance EU - Control of Exports of Dual Use Items (1334/2000)

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

Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice 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

Dry chemical, CO₂, alcohol-resistant foam or water spray.

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

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.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

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 breathing vapors or mists. Avoid contact with skin and eyes. 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. Keep away from direct sunlight. Store between 20 - 40°C. Store away from heat and sources of ignition. Store away from incompatibles, Acids Oxidizing agents.

Storage class Chemical storage.

Packaging material Use specially constructed containers only.

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

| Component | EU OEL | Austria | Australia | Denmark |
|---------------------------|----------------|--------------|------------------------|-------------|
| 2,2',2"-nitrioltriethanol | Not determined | 1.6 ppm STEL | 5mg/m ³ TWA | 0.5 ppm TWA |

| | | | | |
|--|--|---|--|---------------------------|
| | | 10 mg/m ³ STEL inhalable fraction 0.8 ppm TWA 5 mg/m ³ TWA inhalable fraction Sensitizer | | 3.1 mg/m ³ TWA |
|--|--|---|--|---------------------------|

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

| Component | New Zealand | Italy | Netherlands | Norway |
|---------------------------|-------------------------|----------------|----------------|--|
| 2,2',2"-nitrioltriethanol | 5 mg/m ³ TWA | Not determined | Not determined | 5 mg/m ³ TWA 10 mg/m ³ STEL |

| Component | Poland | Portugal | Romania | Russia |
|---------------------------|----------------|-------------------------|----------------|----------------|
| 2,2',2"-nitrioltriethanol | Not determined | 5 mg/m ³ TWA | Not determined | Not determined |

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

EU - Control of Exports of Dual Use Items (1334/2000)

Notes

No biological limit allocated

Derived No Effect Level (DNEL)

Long term exposure local effects

2,2',2"-nitrioltriethanol

Inhalation - Gas 5 mg/m³

Long term exposure systemic effects

2,2',2"-nitrioltriethanol

Dermal 6.3 mg/kg

Inhalation - Gas 5 mg/m³

Predicted No Effect Concentration (PNEC)

2,2',2"-nitrioltriethanol

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 | It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles. |
| 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 | No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown). |
| 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 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 |
| Odor | Ammoniacal |
| Color | Colorless |
| Odor threshold | Not applicable |

| <u>Property</u> | <u>Values</u> | <u>Remarks</u> |
|------------------------------|--------------------------|--------------------------|
| pH | ~ 10.5 | |
| pH @ dilution | | |
| Melting/freezing point | <-5 °C / 23 °F | |
| Boiling point/range | 121.2 °C / 250.2 °F | |
| Flash point | 204 °C / 399 °F | Cleveland Open Cup (COC) |
| 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 | 1.1 | @ 25 °C |
| Bulk density | No information available | |
| Relative density | 1.12 | @ 20°C. |
| Water solubility | Soluble in water | |
| Solubility in other solvents | No information available | |
| Autoignition temperature | No information available | |
| Decomposition temperature | No information available | |
| Kinematic viscosity | | |
| Dynamic viscosity | > 10 mPa s | @ 25 °C |
| Log Pow | -2.3 | |
| 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

No specific reactivity hazards associated with this product.

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

Keep away from sources of ignition - No smoking. Heat. Keep away from direct sunlight. Store between 20 - 40°C.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| | |
|-------------------------------|--|
| Inhalation | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| Eye contact | May cause slight irritation. |
| Skin contact | Prolonged contact may cause redness and irritation. |
| Ingestion | Ingestion may cause stomach discomfort. |
| Unknown acute toxicity | Not Applicable. |

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

| | |
|--------------------------|---|
| Sensitization | 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 | None known. |
| Routes of exposure | None known. |
| 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 |
|---------------------------|--|--|---|
| 2,2',2"-nitrioltriethanol | > 1000 mg/L LC50 Pimephales promelas 96 h 10600 - 13000 mg/L LC50 Pimephales promelas 96 h 450 - 1000 mg/L LC50 Lepomis macrochirus 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 |

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

Log Pow

-2.3

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 | Dispose of contents/container to an approved waste disposal plant. Do not puncture or incinerate cans. |
| 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: 07 07 99 |

14. Transport information**14.1 UN Number**

Not regulated

14.2 Proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

| | |
|-------------------------------------|---------------|
| ADR/RID/ADN/ADG Hazard class | Not regulated |
| IMDG Hazard class | Not regulated |
| ICAO Hazard class/division | Not regulated |

14.4 Packing group

| | |
|--------------------------------------|---------------|
| ADR/RID/ADN/ADG Packing group | Not regulated |
| IMDG Packing group | Not regulated |
| ICAO Packing group | Not regulated |

14.5 Environmental hazard

No

14.6 Special precautions

Not Applicable

14.7 Transport in bulk according to Annex I/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

2,2',2"-nitrioltriethanol
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).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

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 | 12-Apr-2011 |
| Revision date | 15-May-2014 |
| Version | 3 |
| The following sections have been revised: | SDS fully updated in the new database. |

Text of R phrases mentioned in Section 3
Not classified

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

This product is not classified as hazardous therefore no (H) hazard statements assigned.
Not classified

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.