1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: **SLV-80**

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

Product application: Well Stimulation in Oilfield.

1.3. Details of the supplier of the safety data sheet

Address/Phone No.: Elkem Oilfield Chemicals FZCO
Bldg 16, Office 405, Jebel Ali Free Zone
PO Box 262213, Dubai, U.A.E
Telephone: +971 4 887 6069
Telefax: +971 4 887 2155
Abdel Belmahi, e-mail: sds.esm@elkem.no

1.4. Emergency Phone No.: +1-800-424-9300

2. Hazards identification

2.1. Classification of the substance or mixture

Product classification according to Regulation (EC) No 1272/2008 (CLP) and the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 9th revision.	
Hazard class and category:	Acute Tox., Oral 4 Acute Tox., Dermal 4

2.2. Label elements

Hazard pictograms:

Signal word:
WARNING

Hazard statements:
H302 + H312 + H332 – Harmful if swallowed, in contact with skin.

Precautionary statements:
P264 – Wash exposed parts thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.
P280 – Wear protective goves.
P301 + P312 – IF SWALLOWED: Call doctor if you feel unwell.
P302 + P352 – IF ON SKIN: Wash with plenty water.
P321 – Specific treatment *(reference to supplemental first aid instruction).*
P330 – Rinse mouth.
P312 – Call a POISON CENTER or doctor if you feel unwell.
P332 + P313 – If skin irrtation occurs: Get medical advice.
P362 + P364 – Take off contaminated clothing and wash it before reuse.
P501 – Dispose of contents/container *(in accordanc with loca/regional regulations).*

3. Composition/information on ingredients

3.2. Mixture

COMPONENT	AMOUNT	CLASSIFICATION	CAS #	EC #
2-Butoxyethanol; ethylene glycol monobutyl ether; butyl glycol	>99.0%	Acute Tox. 4 Skin irrit. 2 Eye Irrit. 2	111–76–2	203–905-0

4. First aid measures

4.1. Description of first aid measures

4.1.1. General information: See 4.1.2 - 4.1.6.

4.1.2. Inhalation:

Move person to fresh air. If not breathing, give artificial respiration; if by mouth-to-mouth use rescuer protection (pocket mask, etc.). If breathing is difficult, qualified personnel should administer oxygen. Call a physician or transport to a medical facility.

4.1.3. Skin contact:

Wash skin with plenty of water.

4.1.4. Eye contact:

Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention immediately, preferably from an ophthalmologist.

4.1.5. Ingestion:

Do not induce vomiting. Seek medical attention immediately. If person is fully conscious, give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40-pound child or 36 ml for an 18 kg child]..

Notes to physician

Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl Pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue Fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. Maintain adequate ventilation and oxygenation of the patient. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient

5. Firefighting measures

Extinguishing Media:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General-purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
Special Protective Equipment for Firefighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Unusual Fire and Explosion Hazards:	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous Combustion Products:	During a fire, smoke may contain the original material in addition to combustion products of varying composition, which may be toxic and/or irritating. Combustion products may include and are not limited to Carbon monoxide, and Carbon dioxide.

6. Accidental release measures

Steps to be Taken if Material is Released or Spilled:	Contain spilled material if possible. **Small spills:** Absorb with materials such as non-combustible material. Clay. Zorb-all®. **Large spills:** Dike area to contain spill. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.
Personal Precautions:	Isolate area. Keep unnecessary and unprotected personnel from entering the area. Ventilate area of leak or spill. No smoking in area. Keep upwind of spill. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental Precautions:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and storage

7.1. Precautions for safe handling

General Handling: Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Do not swallow. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. Keep away from heat, sparks and flame. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the auto ignition temperatures possibly resulting in spontaneous combustion.

7.2. Conditions for safe storage, including any incompatibilities

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more Specific Information.

8. Exposure controls/personal protection

8.1. Control parameters

Component	List	Type	Value
2-Butoxyethanol; ethylene glycol monobutyl ether; butyl glycol	ACGIH	TWA	20 ppm
	EU IOELV	TWA	98 mg/m^3 20 ppm SKIN
	EU IOELV	STEL	246 mg/m^3 50 ppm SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

8.2.2. Individual protection measures, such as personal protective equipment

Eye/Face Protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 ºC)

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Hand protection:	Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and microorganisms. Examples of preferred glove barrier materials include Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile "or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid
Color:	Colorless
Odor:	Mild
Flash Point – Closed Cup:	65ºC *Literature*
Flammable Limits in Air:	**Lower:** 1.3% (V) *Literature* **Upper:** 10.6% (V) *Literature*
Auto ignition Temperature:	224ºC *Literature*
Vapor Pressure:	0.053 kPa @ 20ºC ASTM E1719
Boiling Point (760 mmHg):	171ºC *Literature*
Vapor Density (air = 1):	No test data available
Specific Gravity (H_2O = 1):	0.9005 – 0.9040 20ºC/20ºC *Hydrometer*
Liquid Density:	0.902 g/ml @ 20ºC *Literature*
Freezing Point:	-77ºC *Literature*
Melting Point:	Not applicable to liquids
Solubility in Water (by weight):	100% @ 25ºC *Literature*
pH:	No test data available
Molecular Weight:	118.2 g/mol
Octanol/Water Partition Coefficient:	0.83 *Measured*
Evaporation Rate (Butyl Acetate = 1):	0.06
Kinematic Viscosity:	No test data available

10. Stability and reactivity

Stability/Instability:	Thermally stable at typical use temperatures.
Conditions to Avoid:	Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.
Incompatible Materials:	Avoid contact with strong acids. Strong oxidizers.
Hazardous Polymerization:	Will not occur.
Thermal Decomposition:	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to Aldehydes, Ketones, and Organic acids.

11. Toxicological information

11.1. Information on toxicological effects

Acute Toxicity

Ingestion: Moderate toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits. Massive ingestion of ethylene glycol monobutyl ether (attempted suicides) may produce metabolic acidosis and subsequent secondary effects such as hemolysis, central nervous system and kidney effects. Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

LD50, Guinea pig 1,400 mg/kg
LD50, Rat, male 1,746 mg/kg

Eye Contact: May cause severe eye irritation. May cause moderate corneal injury. Effects may include discomfort or pain, and redness. Effects may be slow to heal. Vapor may cause eye irritation experienced as mild discomfort and redness.

Skin Contact: Brief contact may cause slight skin irritation with local redness. Repeated exposure may cause irritation, even a burn. May cause more severe response on covered skin (under clothing, gloves).

Skin Absorption: Prolonged skin contact to animals which are less sensitive to hemolysis, as are humans, did not result in the absorption of harmful amounts.

LD50, Rat 2,270 mg/kg
LD50, Rabbit 99 - 610 mg/kg
LD50, Guinea pig > 2,000 mg/kg

Sensitization Skin: Did not cause allergic skin reactions when tested in humans. Did not cause allergic skin reactions when tested in guinea pigs.

Inhalation: Excessive exposure may cause irritation to upper respiratory tract (nose and throat). In humans, symptoms may include Headache. In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

LC50, 7 h, Vapor, Rat 700 ppm

Repeated Dose Toxicity: In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Chronic Toxicity and Carcinogenicity: In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans.
If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.

Developmental Toxicity: Has been toxic to the fetus in lab animals at doses toxic to the mother.

	Did not cause birth defects in laboratory animals.
Reproductive Toxicity:	In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Genetic Toxicology:	In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Endocrine disrupting properties: The product is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU)2017/2100 or Commission Regulation (EU)2018/605.

12. Ecological information

CHEMICAL FATE
Movement & Partitioning
Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is high (Koc between 50 and 150).
Henry's Law Constant (H): 1.60E-6 atm*m3/mole Measured
Partition coefficient, n-octanol/water (log Pow): 0.83 Measured
Partition coefficient, soil organic carbon/water (Koc): 67 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable
(Reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Biodegradation	Exposure Time	Method
95 %	28 d	OECD 301E Test
100 %	28 d	OECD 302B Test

Theoretical Oxygen Demand: 2.30 mg/mg

ECOTOXICITY

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity:	LC50, bluegill (Lepomis macrochirus), 96 h: 820 - 1,490 mg/l LC50, rainbow trout (Oncorhynchus mykiss), 96 h: 1,700 mg/l
Aquatic Invertebrate Acute Toxicity:	LC50, water flea Daphnia magna: 835 mg/l EC50, water flea Daphnia magna, immobilization: 1,600 - 2,500 mg/l LC50, grass shrimp (Palaemonetes pugio), static, 96 h: 5.4 mg/l LC50, common shrimp Crangon crangon, static, 96 h: 550 - 950 mg/l
Aquatic Plant Toxicity:	EC50, green alga Selenastrum capricornutum, biomass growth inhibition, 72 h: 911 mg/l
Toxicity to Micro-organisms:	IC50; bacteria: > 1,000 mg/l
Repeated Dose Toxicity:	In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Chronic Toxicity and Carcinogenicity:	In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.
Developmental Toxicity:	Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
Reproductive Toxicity:	In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Genetic Toxicology:	In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Endocrine disrupting properties: The product is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU)2017/2100 or Commission Regulation (EU)2018/605.

13. Disposal considerations

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials, additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL:	NOT REGULATED
OCEAN:	NOT REGULATED
AIR:	NOT REGULATED

INLAND WATERWAYS

Proper Shipping Name:	SUBSTANCES WITH FP >61<=100 DEGR. C.
Technical Name:	CONTAINS ETHYLENE GLYCOL MONOBUTYL ETHER
ID Number:	ID9003

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National and international legislation/requirements:
This Safety Data Sheet is prepared in compliance with Regulation (EC) 1907/2006 (REACH), Regulation (EC) 1272/2008 (CLP) and Regulation (EU) 2020/878 (Safety Data Sheet Regulation) which are aligned with the UN Globally Harmonized System of Classification and Labelling of Chemicals (9th rev.), GHS.

16. Other Information

Product Literature
Additional information on this product may be obtained by calling us.
Revision

Identification Number: 829 / 0000 / Issue Date 02/22/2008

Revision 03: new logo, font, added assessment EDC properties, reference EU 2020/878, Reference GHS 9th edition

Legend:

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation

Each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer /user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer /user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.