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

1.1. Product identifier

Product name: **VES-1000**

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

Product application: Product for 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

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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:	Skin Irrit. 2 Eye Dam. 1 Aquatic Acute

2.2. Label elements

Hazard pictograms:

Signal word:

DANGER

Hazard statements:

H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H400 – Very toxic to aquatic life.

Precautionary statements:

P264 – Wash exposed parts thoroughly after handling
P280 – Wear protective gloves/ eye protection/face protection
P273 – Avoid release to the environment
P302 + P352 – IF ON SKIN: Wash with plenty water
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 doctor *(to specify the appropriate source of emergency medical advices.*
P321 – Specific treatment (see *the competent authority may specify a cleansing agent)*
P332 + P313 – If skin irritation occurs: Get medical advice
P362 + P364 – Take off contaminated clothing and wash it before reuse.
P391 – Collect spillage
P501 – Dispose of contents/container (*in accordance with local/regional regulations)*

3. Composition/information on ingredients

3.2. Mixture

Hazardous Substance:

Chemical Name	PBT vPvB OEL	CAS-No.	EC-No. / REACH	Classification	Concentration [%]
Amides, tallow, N - (3- (dimethyl amino)propyl), N-		68647-77-8	271-972-3	Skin Irrit. 2, Eye Dam. 1, Aquatic Acute	40 - 45

Non - Hazardous Substance

Chemical Name	CAS-No.	EC-No. / REACH Reg.-No.	Concentration [%]
Propylene glycol	57-55-6	200-338-0	40 - 50

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:

If breathed in, move person into fresh air.
Consult a physician after significant exposure.

4.1.3. Skin contact:

Take off contaminated clothing and shoes immediately
Rinse immediately with plenty of water**.**
If skin irritation persists, call a physician.

4.1.4. Eye contact:

Rinse with plenty of water.
Get medical attention immediately. Continue to rinse during transport.
Remove contact lenses.
Protect unharmed eye.

4.1.5. Ingestion:

Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

5. Firefighting measures

5.1. Extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

5.2. Special hazards arising from the substance or mixture:

Do not allow run-off from firefighting to enter drains or watercourses

5.3. Advice for firefighters:

In the event of fire, wear self-contained breathing apparatus.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations**.**

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For personal protection, see section 8.
Use personal protective equipment. Ensure adequate ventilation**.**

6.1.2. For emergency responders

Use personal protective equipment as described in section 8.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

Other information: -

6.4. Reference to other sections

For disposal considerations, see section 13.

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling: For personal protection see section 8. Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire explosion: Normal measures for preventive fire protection.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place.
Other data: No decomposition if stored and applied as directed.

8. Exposure controls/personal protection

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Propylene glycol	57-55-6	TWA	150 ppm 474 mg/m3	2005-04-06	GB EH40	
	Further information	:	2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			
		TWA	10 mg/m3	2005-04-06	GB EH40	
	Further information	:	2: Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used			

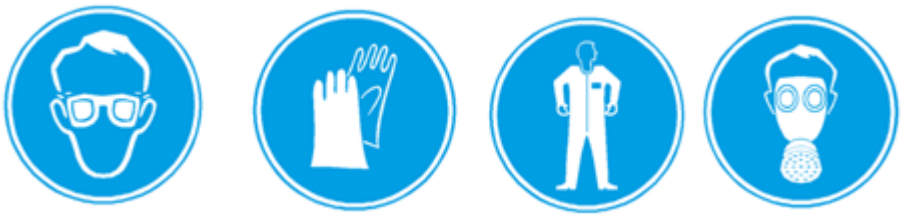
STEL: Short term exposure limit
TWA: Time Weighted Average (TWA)

Engineering Controls

Effective exhaust ventilation system

Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment



Respiratory protection:	Keep respiratory equipment available. If use conditions can generate aerosol or mist, wear suitable respiratory equipment. Wear full-face mask supplied with: Gas cartridge K (ammonia, green). Combination filter ABEKP. In the case of vapor formation, use a respirator with an approved filter.
Hand protection:	Glove material: Neoprene Nitrile rubber
Eye protection:	Eyewash bottle with pure water Tightly fitting safety goggles
Skin and body protection:	Protective suit. Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:

Form:	Liquid
Colour:	Yellow, Clear
Odour:	Amine-like

Safety data:

Flash point:	100 – 199 °C Method: Pensky Martens closed cup
Ignition temperature:	>100°C
pH:	6 – 9
Melting point/range:	Ca.0°C
Boiling point/range:	>100°C
Water solubility:	Soluble
Viscosity, dynamic:	250 mPa.s at 25°C

This safety datasheet only contains information relating to safety and does not replace any product information or product specification

10. Stability and reactivity

Hazardous decomposition products:	No hazardous decomposition products are known.
Hazardous reaction:	Stable under normal conditions.

11. Toxicological information

11.1. Information on toxicological effects

Inhalation:	Inhalation of aerosols may cause irritation to mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
Skin:	May cause skin irritation and/or dermatitis.
Eyes:	May cause irreversible eye damage.
Ingestion:	May cause irritation of the mucous membranes.

Test result

Acute oral toxicity:	LD50 rat Dose: 4,114 mg/kg
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

Product information

Ecotoxicity effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic organisms.

Test result

Toxicity to fish:	LC50 Species: fish Dose: 1.9 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates:	EC50 Species: Daphnia Dose: 0.94 mg/l Exposure time: 72 h
Toxicity to algae:	EC50 Species: algae Dose: 0.14 mg/l Exposure time: 72 h
Biodegradability:	>70% BOD, 28 days, Closed Bottle Test (OECD 301D)

Toxicology data for the components

Amides, tallow, N-(3-(dimethyl amino) propyl), N-oxide

Toxicity to fish:	LC50 Species: Brachydanio rerio Dose: 0.1 – 1 mg/l Exposure time: 96 h The value is estimated from tests on similar products.
Toxicity to daphnia and other aquatic invertebrates:	EC50 Species: Dapnia Dose: 0.1 – 1 mg/l Exposure time: 48 h The value is estimated from tests on similar products.
Toxicity to algae:	EC50 Species: algae Dose: 0.1 – 1 mg/l Exposure time: 72 h The value is estimated from tests on similar products.
Biodegradability:	Not readily biodegradable.

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 Consideration

Product:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Hazardous waste.
Contaminated packaging:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

14. Transport information

Land Transportation (ADR/RID)

UN-Number:	3082
Description of the goods:	ENVIRONMENTALLY HAZARD SUBSTANCE, LIQUID, N.O.S (Amine oxide)
Class:	9
Packaging group:	III
Classification Code:	M6
Hazard identification:	90
Labels:	9

Air Transportation (ICAO/IATA)

UN Number:	3082
Description of the goods:	ENVIRONMENTALLY HAZARD SUBSTANCE, LIQUID, N.O.S (Amine oxide)
Class:	9
Packaging group:	III
Labels:	9
Packing instruction (cargo aircraft):	914
Packing instruction (passenger aircraft)	Y914

SEA TRANSPORTATION (IMO/IMDG)

UN Number:	3082
Description of the goods:	ENVIRONMENTALLY HAZARD SUBSTANCE, LIQUID, N.O.S (Amine oxide)
Class:	9
Packaging group:	III
Labels:	9
EmS Number:	F-A S-F
Marine pollutant:	No

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.

Other Regulations:

Major Accident Hazard Legislation:	96/82/EC Update: 2003 Dangerous for the environment Quantity 1: 100 t Quantity 2: 200 t

Notification status:

REACH:	y (positive listing); On the inventory, or in compliance with the inventory
CH INV:	y (positive listing); The formulation contains substances listed on the Swiss Inventory
TSCA:	y (positive listing) ; On TSCA Inventory
DSL:	q (quantity restricted); This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.
AICS:	n (Negative listing); Not in compliance with the inventory.
NZLoC:	n (Negative listing); Not in compliance with the inventory.
KECI:	n (Negative listing); Not in compliance with the inventory.
PICCS:	n (Negative listing); Not in compliance with the inventory.
IECSC:	n (Negative listing); Not in compliance with the inventory.

For explanation of abbreviation, see section 16.

Further information:	This product is to be considered as a preparation according to EU-legislation.

16. Other Information

PBT: Persistent, bioaccumulative and toxic according to 1907/2006/EC, Annex XIII.
vPvB: Very persistent and very bioaccumulative according to 1907/2006/EC, Annex XIII.
OEL: Occupational exposure limit

Note: The above information is only given for substances that does not meet the classification criteria.

Notification status explanation

REACH	1907/2006 (EU)
CH INV	Switzerland. New notified substances and declared preparations
TSCA	TSCA Inventory
DSL	Domestic Substances List (DSL)
AICS	Australia Inventory of Chemical Substances (AICS)
NZIoC	New Zealand. Inventory of Chemical Substances
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory Industrial Safety and Health Law OEL
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Inventory of Chemicals and Chemical Substances (PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision 03: updated company logo, assessment EDC properties (section 11 & 12), GHS 9th edition reference, SDS EU 2020/878 reference