



MATERIAL SAFETY DATA SHEET

Issuing date 16-Oct-2013

Revision Date 17-Oct-2013

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name StimOil® EN

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

Recommended use Oilfield Chemical
Uses advised against No information available

1.3 Details of the supplier of the safety data sheet

Supplier

CESI Chemical
1004 S. Plainsman Road
Marlow, OK 73055
Phone +1 (580) 658-6608
Fax +1 (580) 658-3223

CESI Chemical, Holland Branch
Waanderweg 64
7812 HZ, Emmen
The Netherlands
Phone +31 (0) 591-677550

For further information, please contact:

E-mail Address information@flotekind.com

1.4 Emergency telephone number

Emergency telephone +1 405-282-8510

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

| | |
|------------------------------------|------------|
| Serious eye damage/eye irritation | Category 2 |
| Physical hazards Flammable liquids | Category 3 |

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

For the full text of the R-phrases mentioned in this Section, see Section 16

R-code(s)

R10 - R67

R-phrase(s)

R10 - Flammable
R67 - Vapors may cause drowsiness and dizziness

2.2 Label Elements



Signal Word

Warning

Hazard Statements

H319 - Causes serious eye irritation

H226 - Flammable liquid and vapor

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

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

2.3 Other information

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | EC-No | CAS-No | Weight % | Classification (67/548) | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|---------|------------|----------|--------------------------|--|---------------------------|
| Isopropyl alcohol | Present | 67-63-0 | 10-30 | F; R11 Xi; R36 R67 | Flam. Liq. 2 (H225) STOT SE 3 (H336) Eye Irrit. 2 (H319) | No data available |
| Citrus Terpenes | - | 68647-72-3 | 1-5 | - | | No data available |

For the full text of the R-phrases mentioned in this Section, see Section 16

Additional information

Terpenes may appear as CAS# 94266-47-4.

4. FIRST AID MEASURES

4.1 Description of first-aid measures

General advice

Immediate medical attention is required. Show this material safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Ingestion

Call a physician or Poison Control Center immediately. Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.

Protection of First-aiders

Remove all sources of ignition. Use personal protective equipment.

4.2 Most important symptoms and effects, both acute and delayed**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 CO₂, dry chemical, or foam.

Extinguishing media which shall not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture**Special Hazard**

None in particular.

5.3 Advice for firefighters**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment.

See Section 12 for additional Ecological information.

6.2 Environmental precautions

Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

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

Soak up with inert absorbent material. Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal. Do not flush into surface water or sanitary sewer system.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Do not breathe vapors or spray mist. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

7.3 Specific end uses

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------------------|-------------------------------|---|---|
| Isopropyl alcohol 67-63-0 | STEL: 400 ppm TWA: 200 ppm | TWA: 400 ppm TWA: 980 mg/m ³ | IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ |

NIOSH IDLH: Immediately Dangerous to Life or Health

Exposure limits

| Chemical Name | European Union | The United Kingdom | France | Spain | Germany |
|--|---|---|--|---------|--|
| Isopropyl alcohol 67-63-0 | | STEL: 500 ppm STEL: 1250 mg/m ³ TWA: 400 ppm TWA: 999 mg/m ³ | STEL: 400 ppm STEL: 980 mg/m ³ | | MAK: 200 ppm MAK: 500 mg/m ³ Ceiling / Peak: 400 ppm Ceiling / Peak: 1000 mg/m ³ TWA: 200 ppm TWA: 500 mg/m ³ |
| Component | Italy | Portugal | The Netherlands | Finland | Denmark |
| Isopropyl alcohol 67-63-0 (10-30) | | | TWA: 200 ppm 8hr, 500 mg/m ³ 8hr | | TWA: 200 ppm TWA: 490 mg/m ³ |
| Chemical Name | Austria | Switzerland | Poland | Norway | Ireland |
| Isopropyl alcohol 67-63-0 | STEL 800 ppm STEL 2000 mg/m ³ MAK: 200 ppm MAK: 500 mg/m ³ | STEL: 400 ppm STEL: 1000 mg/m ³ | | | |

Derived No Effect Level (DNEL)

No information available

Predicted No Effect Concentration (PNEC)

No information available

8.2 Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye Protection

Safety glasses with side-shields. Goggles.

Hand Protection

Impervious gloves.

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene measures

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

Environmental Exposure Controls

Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | | | |
|----------------|--------|------------|--------------|
| Physical State | Liquid | Appearance | clear |
| Odor | Citrus | Color | light yellow |

| <u>Property</u> | <u>Values</u> | <u>Remarks/ Method</u> |
|--|---------------------|------------------------|
| pH | 5-7 | |
| Freezing Point | <-28.9 °C / <-20 °F | |
| Boiling point/boiling range | | No data available |
| Flash Point | 27.9 °C / 82.3 °F | ASTM D7094 |
| Evaporation rate | | No data available |
| Flammability (solid, gas) | | No data available |
| Flammability Limits in Air | | No data available |
| upper flammability limit | | |
| lower flammability limit | | |
| Vapor pressure | | No data available |
| Vapor density | | No data available |
| Relative density | 0.968-1.028 | |
| Water solubility | Soluble in water | |
| Solubility in other solvents | | No data available |
| Partition coefficient: n-octanol/water | | No data available |
| Autoignition temperature | | No data available |
| Decomposition temperature | | No data available |
| Viscosity, kinematic | | No data available |
| Explosive properties | No data available | |
| Oxidizing Properties | No data available | |
| Softening point | | |
| Molecular Weight | | |
| VOC Content | No data available | |
| Density Bulk Density | 8.08-8.58 lbs/gal | |

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to Avoid

Heat, flames and sparks.

10.5 Incompatible Materials

Strong oxidizing agents. Incompatible with strong acids and bases.

10.6 Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Product Information

| | |
|---------------------|---|
| Inhalation | Vapors may be irritating to eyes, nose, throat, and lungs. Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough. |
| Eye contact | Avoid contact with eyes. Severely irritating to eyes. May cause irreversible eye damage. |
| Skin contact | May cause irritation. Prolonged skin contact may defat the skin and produce dermatitis. |
| Ingestion | Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause drowsiness or dizziness. |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|----------------------|---|-------------------------|
| Isopropyl alcohol | = 4396 mg/kg (Rat) | 12800 mg/kg (Rat) 12870 mg/kg (Rabbit) | = 72.6 mg/L (Rat) 4 h |

Chronic toxicity

Carcinogenicity No known carcinogens are present at greater than 0.1%

Sensitization No information available

Reproductive toxicity No information available

Mutagenic effects No information available

Developmental Toxicity No information available

Teratogenicity No information available

Target Organ Effects Eyes. Respiratory system. Skin. Central nervous system (CNS). Kidney. Liver.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity effects . The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|--|---|----------------------------|---|
| Isopropyl alcohol | 1000: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50 1000: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 | 9640: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 11130: 96 h <i>Pimephales promelas</i> mg/L LC50 static 1400000: 96 h <i>Lepomis macrochirus</i> µg/L LC50 | | |

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from Residues / Unused Products

Dispose of in accordance with local regulations.

Contaminated packaging

Do not re-use empty containers.

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

14. TRANSPORT INFORMATION

DOT

| | |
|----------------------|--|
| Proper shipping name | UN1993, Flammable liquids, n.o.s., (contains Isopropanol and Citrus Terpenes), 3, PG III |
| Hazard class | 3 |
| UN/ID No | UN1993 |
| Packing Group | PG III |

IMDG/IMO

| | |
|----------------------|--|
| Proper shipping name | UN1993, Flammable liquids, n.o.s., (contains Isopropanol and Citrus Terpenes), 3, PG III |
| Hazard class | 3 |
| UN/ID No | UN1993 |
| Packing Group | PG III |

ADR/RID

| | |
|----------------------|--|
| Proper shipping name | UN1993, Flammable liquids, n.o.s., (contains Isopropanol and Citrus Terpenes), 3, PG III |
| Hazard class | 3 |
| UN/ID No | UN1993 |
| Packing Group | PG III |

ICAO/IATA

| | |
|----------------------|--|
| UN/ID No | UN1993 |
| Proper shipping name | UN1993, Flammable liquids, n.o.s., (contains Isopropanol and Citrus Terpenes), 3, PG III |
| Hazard class | 3 |
| Packing Group | PG III |

15. REGULATORY INFORMATION

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

International Inventories

| | |
|---------------|----------|
| TSCA | Complies |
| EINECS/ELINCS | - |
| DSL/NDSL | Complies |
| PICCS | - |
| ENCS | - |
| IECSC | - |
| AICS | - |
| KECL | - |

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

15.2 Chemical Safety Assessment**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | No |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | No |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

| Chemical Name | WHMIS Hazard Class |
|-------------------|--------------------|
| Isopropyl alcohol | 1 % B2,D2B |

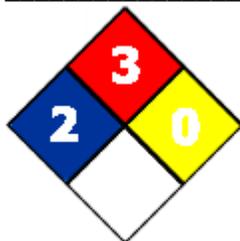
| Chemical Name | NPRI |
|-------------------|------|
| Isopropyl alcohol | X |

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

| | | | | |
|--------------------|------------------------|-----------------------|--------------------------|--|
| <u>NFPA</u> | Health Hazard 2 | Flammability 3 | Stability 0 | Physical and chemical hazards - |
| <u>HMIS</u> | Health Hazard 2 | Flammability 3 | Physical Hazard 0 | Personal protection - . |

**Full text of R-phrases referred to under sections 2 and 3**

R22 - Harmful if swallowed

R11 - Highly flammable

R67 - Vapors may cause drowsiness and dizziness

R36 - Irritating to eyes

R10 - Flammable

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

H225 - Highly flammable liquid and vapor

H336 - May cause drowsiness or dizziness

H319 - Causes serious eye irritation

H319 - Causes serious eye irritation

H226 - Flammable liquid and vapor

Prepared By QHSE Department**Issuing date** 16-Oct-2013**Revision Date** 17-Oct-2013**Revision Note** Not Applicable.**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.****US Only: This safety data sheet complies with the requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.****Disclaimer**

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.