SAFETY DATA SHEET

NOVEL 6-6 Ethoxylate

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name NOVEL 6-6 Ethoxylate
Synonyms Ethoxylated Hexanol
Use Agricultural, Industrial use, Lubricants
Company Sasol Chemicals (USA) LLC
(an affiliate of Sasol Chemicals North America LLC)
Address 12120 Wickchester Lane, Houston, TX 77079
Telephone CHEMTREC North America Transportation Emergency (24-hr) (800) 424 9300
CHEMTREC World Wide (703) 527-3887
Other Emergencies (24-hr) (337) 494 5142
SDS and Product Information (8:00am-4:30pm CST) (281) 588 3491
Health and Safety Information (7:30am-4:00pm CST) (281) 588 3492
E-mail address SasolElectronicSDS@us.sasol.com

SECTION 2 HAZARDS IDENTIFICATION

OSHA/GHS Hazards Acute toxicity (Oral) Category 4
Serious eye damage Category 1

LABEL ELEMENTS

Hazard symbols

Signal word Danger

Hazard statements H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary statements

Prevention P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection/ face protection.

Response P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
NOVEL 6-6 Ethoxylate

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/doctor.

Disposal   P501   Dispose of contents/ container to an approved waste disposal plant.

Additional advice   This product may contain residual levels of alcohols which, even under normal handling conditions, may smell and irritate the eyes, nose, and throats of some individuals.

SECTION 3   COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α-hexyl-ω-hydroxy-</td>
<td>31726-34-8</td>
<td>100</td>
</tr>
</tbody>
</table>

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 4   FIRST AID MEASURES

Eye contact   Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact   Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.

Inhalation   Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

Ingestion   If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5   FIREFIGHTING MEASURES

FLAMMABLE PROPERTIES

Fire/explosion   NFPA Class IIIB combustible liquid.


Protective equipment and precautions for firefighters   Wear self-contained breathing apparatus for firefighting if necessary.

Further information   Keep containers and surroundings cool with water spray. Do not use a solid water stream as it may scatter and spread fire. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
SECTION 6  ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up
Evacuate personnel to safe areas. Remove all sources of ignition. Contain spillage, and then collect 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). Do not flush into surface water or sanitary sewer system.

SECTION 7  HANDLING AND STORAGE

Safe handling advice
Take precautionary measures against static discharges.

Storage/Transport pressure
Ambient

Load/Unload temperature
4 - 38 °C

40 - 100 °F

Storage and handling materials
Suitable: Carbon steel coated with baked phenolic. Any moisture may cause rusting of carbon steel. If product is moisture free, uncoated carbon steel tanks.

Further information on storage conditions
Mix thoroughly before use. When stored in the liquid form, ethoxylates should be padded with a dry inert gas, such as nitrogen, to prevent oxygen or air from entering the tank. Prolonged storage in the presence of air or oxygen may cause product degradation. Oxidation is not expected when stored under a nitrogen atmosphere. Inert gas blanket and breathing system needed to maintain color stability. Use dry inert gas having at least -40°C (-40°F) dew point.

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES
Ensure adequate ventilation, especially in confined areas. Trace amounts of ethylene oxide may be present in the product and could accumulate in vapor spaces of storage or transport vessels.

PERSONAL PROTECTIVE EQUIPMENT

Eyes
Wear as appropriate:
Goggles. Face-shield.

Skin
Full protective clothing, chemical boots, and chemical gloves. High standards of skin care and personal hygiene should be exercised at all times.

Inhalation
Use respirator when performing operations involving potential exposure to vapour of the product. Use NIOSH approved respiratory protection.

EXPOSURE GUIDELINES
There are no exposure limits established for this product. Trace amounts of ethylene oxide may be present in this product., The ethylene oxide in this product is not expected to result in significant exposures or present a health hazard.
## SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>liquid</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>clear to slightly hazy</td>
</tr>
<tr>
<td><strong>Form</strong></td>
<td>liquid</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>sweet pungent</td>
</tr>
<tr>
<td><strong>Odour Threshold</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>ca. 102 °C, 216 °F; PM;</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td>Upper explosion limit: No data available</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: No data available</td>
</tr>
<tr>
<td><strong>Boiling point/boiling range</strong></td>
<td>158 - 335 °C, 317 - 635 °F;</td>
</tr>
<tr>
<td><strong>Melting point/range</strong></td>
<td>-5 - 0 °C, 23 - 32 °F;</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>ca. 275 °C, 527 °F;</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>ca. 0.15 mm Hg @ 25 °C, 77 °F;</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>13.6</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>1.022 g/cm3 @ 20 °C, 68 °F;</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Water solubility</strong></td>
<td>soluble</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>14.7 cSt @ 40 °C, 104 °F;</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>6 - 8</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>
NOVEL 6-6 Ethoxylate

Volatile organic compounds (VOC) content 3.55 %

SECTION 10 STABILITY AND REACTIVITY

Reactivity
Stable at normal ambient temperature and pressure.

Chemical stability
No decomposition if stored and applied as directed.

Conditions to avoid
Reacts slowly with air or oxygen. Storage under heated conditions in the presence of air or oxygen increases reaction rate. For example, after storing at 95°F/35°C for 30 days in the presence of air, there is measureable oxidation of the ethoxylate. Lower temperatures will allow for longer storage time and higher temperatures will shorten the storage time if stored under an air or oxygen atmosphere.

Hazardous decomposition products
When storing this product in air or oxygen, decomposition may occur, generating vapors which could be irritating. Ensure adequate ventilation, especially in confined areas. Oxidation is not expected when stored under a nitrogen atmosphere.

Materials to avoid
Can react with strong oxidizers, inorganic acids, and halogens.

Hazardous polymerisation
None.

SECTION 11 TOXICOLOGICAL INFORMATION

Additional Remarks
Data and classification obtained from the CESIO recommendation.

Acute dermal toxicity
LD50 Rabbit: > 2,000 g/kg
Category approach

Acute inhalation toxicity
LC50 value expected to exceed the saturated vapor concentration in air.

Acute oral toxicity
LD50 Rat: > 300 - 2,000 mg/kg
Category approach

Skin corrosion/irritation
(Rabbit) slightly irritating
Category approach
(literature value)
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
(Rabbit) Irreversible effects on the eye
Category approach
**Respiratory or skin sensitisation**
Guinea pig: not sensitizing; Maximisation Test Category approach (literature value)

**Germ cell mutagenicity**
**Genotoxicity in vitro:**
Result: In vitro tests did not show mutagenic effects
Category approach

**Genotoxicity in vivo:**
Result: In vivo tests did not show mutagenic effects
Category approach (literature value)

**Assessment Mutagenicity:**
Based on available data, the classification criteria are not met.

**Reproductive toxicity**
**Reproductive toxicity:**
No data available

**Assessment Reproductive toxicity:**
No data available

**Teratogenicity:**
No data available

**Assessment teratogenicity:**
No data available

**STOT - single exposure**
No data available

**STOT - repeated exposure**
No data available

**Aspiration toxicity**
Not applicable

**Carcinogenicity**
**Assessment carcinogenicity:**
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity to fish**
LC50 (Cyprinodon variegatus (sheepshead minnow)) 96 hours: > 100 mg/l

**Toxicity to aquatic invertebrates**
IC50 (Acartia tonsa (copepod)) 48 hours: > 100 mg/l
No data available

**Toxicity to algae**
ErC50 (Skeletonema costatum (marine diatom)) : > 100 mg/l
NOEL 6-6 Ethoxylate

NOEC (Skeletonema costatum (marine diatom)) : 32 mg/l

Chronic toxicity to fish No data available
Chronic toxicity to aquatic invertebrates No data available

Biodegradation Readily biodegradable. Gledhill "Ready Biodegradability" Test (40 CFR 796.3100) (28 d): 82 % Test substance: NOVEL 6-4 Ethoxylate

Bioaccumulative potential No data available
Mobility in soil No data available
Other adverse effects No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Code Any unused product or empty containers may be disposed of as non-hazardous in accordance with state and federal requirements. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification. If the resulting material is determined to be hazardous, please dispose in accordance with state and federal (40 CFR 262) hazardous waste regulations.

Disposal methods Dispose of only in accordance with local, state, and federal regulations.

Empty containers. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.

SECTION 14 TRANSPORT INFORMATION

DOT not regulated
IATA not regulated
IMDG not regulated
NOVEL 6-6 Ethoxylate

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remarks  No data available

SECTION 15  REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA Inventory Listing

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α-hexyl-ω-hydroxy-</td>
<td>31726-34-8</td>
</tr>
</tbody>
</table>

All chemical substances in this product are either on the TSCA Active Inventory, or in compliance with the inventory.

SARA 302 Status

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SARA 311/312 Classification

Should this product meet EPCRA 311/312 Tier reporting criteria of 40 CFR 370, refer to Section 2 of this SDS for appropriate classification and Section 3 for components that meet the hazardous classification.

SARA 313 Chemical

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US. EPA CERCLA Hazardous Substances (40 CFR 302)

<table>
<thead>
<tr>
<th>Components</th>
<th>Reportable Quantity</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td></td>
<td>none</td>
</tr>
</tbody>
</table>

INTERNATIONAL REGULATIONS

WHMIS Classification

<table>
<thead>
<tr>
<th>Acute toxicity (Oral)</th>
<th>Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
</tbody>
</table>
European Union
This surfactant complies with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

Classification according to Regulation (EU) 1272/2008.

Acute toxicity (Oral), Category 4
Serious eye damage, Category 1
Classified according to the CESIO recommendation.

Australia. Inventory of Chemical Substances (AICS) Listed
Japan. Inventory of Existing and New Chemical Substances (ENCS) Listed
Japan. ISHL - Inventory of Chemical Substances Listed
Canada. Domestic Substances List (DSL) Inventory Listed
Canada. Non-Domestic Substance Listing (NDSL) Not listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS) Not listed
Korea. Existing Chemicals Inventory (KECI) Listed
China. Inventory of Existing Chemical Substances (IECSC) Listed
Mexico. National Inventory of Chemical Substances (INSQ) Not listed
New Zealand. Inventory of Chemical Substances (NZIoC) Listed
Switzerland. Inventory of Notified New Substances (CHINV) Listed
Taiwan. National Existing Chemical Inventory (NECI) Listed

Please note: The names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in Section 3.

STATE REGULATIONS

California Prop. 65

Components
Ethylene Oxide

Sasol Chemicals (USA) LLC's ethoxylates may contain detectable quantities of ethylene oxide which is a chemical on the California Proposition 65 list. The level is typically below 1.0 ppm, although it may vary. The manufacturing process is controlled to reduce the residual ethylene oxide content.
SECTION 16 OTHER INFORMATION

HAZARD RATINGS

<table>
<thead>
<tr>
<th>HMIS®</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard/ Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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