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

<table>
<thead>
<tr>
<th>Trade name</th>
<th>NOVEL® TDA-12 Ethoxylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Ethoxylated Alcohol, Trideceth-12</td>
</tr>
<tr>
<td>Use</td>
<td>Industrial use, Raw material for chemical processes, Raw material for textile auxiliary agents, Surfactant</td>
</tr>
<tr>
<td>Company</td>
<td>Sasol Chemicals (USA) LLC (an affiliate of Sasol Chemicals North America LLC)</td>
</tr>
<tr>
<td>Address</td>
<td>12120 Wickchester Lane Houston TX 77079</td>
</tr>
<tr>
<td>Telephone</td>
<td>CHEMTREC North America Transportation Emergency (24-hr) (800) 424-9300</td>
</tr>
<tr>
<td></td>
<td>CHEMTREC World Wide (703) 527-3887</td>
</tr>
<tr>
<td></td>
<td>Other Emergencies (24-hr) (337) 494-5142</td>
</tr>
<tr>
<td></td>
<td>SDS and Product Information (8:00am-4:30pm CST) (281) 588-3491</td>
</tr>
<tr>
<td></td>
<td>Health and Safety Information (7:30am-4:00pm CST) (281) 588-3492</td>
</tr>
<tr>
<td>E-mail address</td>
<td><a href="mailto:SasolElectronicSDS@us.sasol.com">SasolElectronicSDS@us.sasol.com</a></td>
</tr>
</tbody>
</table>

SECTION 2 HAZARDS IDENTIFICATION

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.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
NOVEL® TDA-12 Ethoxylate

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>Isotridecanol, ethoxylated</td>
<td>9043-30-5</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.

**Suitable extinguishing media**  Water spray, Foam, Dry chemical, Carbon dioxide (CO2)

**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: 41 - 52 °C
106 - 126 °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.
**NOVEL® TDA-12 Ethoxylate**

### SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance**: liquid;
- **Colour**: Clear to slightly hazy
- **Form**: liquid
- **Odour**: mild
- **Odour Threshold**: no data available
- **Flash point**: 188 °C, 370 °F; PM;
- **Flammability**:
  - Upper explosion limit: no data available
  - Lower explosion limit: no data available
- **Boiling point/boiling range**: no data available
- **Melting point/range**: 12 - 21 °C, 53 - 70 °F;
- **Auto-ignition temperature**: approximately 360 °C, 680 °F;
- **Decomposition temperature**: no data available
- **Flammability (solid, gas)**: no data available
- **Vapour pressure**: no data available
- **Vapour density**: 25
- **Density**: 1.01 g/cm³ @ 40 °C, 104 °F;
- **Specific gravity**: no data available
- **Water solubility**: soluble
- **Viscosity**: 46 cSt @ 40 °C, 104 °F;
- **pH**: 6 - 8
- **Evaporation rate**: no data available
- **Partition coefficient: n-octanol/water**: no data available
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  Information given is based on data obtained from similar substances.
Acute dermal toxicity  no data available
Acute inhalation toxicity  LC50 value expected to exceed the saturated vapor concentration in air.
Acute oral toxicity  LD50 Rat: 300 - 2,000 mg/kg (literature value)
Skin corrosion/irritation  Primary irritation (Rabbit): 4 hours; 4.1 - 6.1 (Max. score is 8.0.)
Eye damage/irritation  Primary irritation (Rabbit): 32 - 50.8 (Max. score is 110.)
Respiratory or skin sensitization  no data available
Germ cell mutagenicity  Genotoxicity in vitro: no data available
Genotoxicity in vivo: no data available
Assessment Mutagenicity: no data available
Reproductive toxicity  Reproductive toxicity:
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 no data available

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 (Danio rerio (zebra fish)) 96 hours: 12 mg/l; OECD Test Guideline 203 Test substance: C13-9 Ethoxylate

Toxicity to aquatic invertebrates EC50 (Daphnia magna (Water flea)) 48 hours: 4.7 mg/l; OECD Test Guideline 202 Test substance: C13-9 Ethoxylate

Toxicity to algae ErC50 (Desmodesmus subspicatus (green algae)) 72 hours: 17 mg/l; OECD Test Guideline 201 Test substance: C13-9 Ethoxylate

Chronic toxicity to fish no data available

Chronic toxicity to aquatic invertebrates no data available

Biodegradation Readily biodegradable

OECD Test Guideline 301F (28 d): > 60 % (10 day window met)

Bioaccumulation 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.

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

OSHA Hazards (HCS 1994)
Eye irritant, Skin irritant

TSCA Inventory Listing
Components  Poly(oxy-1,2-ethanediyl), a-isotridecyl-w-hydroxy-
CAS-No.  9043-30-5

SARA 302 Status
Components  No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
CAS-No.  
Weight percent  

SARA 311/312 Classification
NOVEL® TDA-12 Ethoxylate

"Immediate (acute) health hazard"

SARA 313 Chemical Components
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.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

 INTERNATIONAL REGULATIONS

WHMIS Classification
Class D, Division 2, Subdivision B: Toxic material.

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.

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

Australia. Inventory of Chemical Substances (AICS) Listed
Japan. Inventory of Existing and New Chemical Substances (ENCS) Listed
Japan. Industrial Safety & Health Law (ISHL) Inventory Listed
Canada. Domestic Substances List (DSL) Inventory Listed
Canadian Non-Domestic Substance Listing (NDSL) Not listed
European Inventory of Existing Commercial Chemical Substances (EINECS) Listing Listed
Philippines. Inventory of Chemicals / Chemical Substances (PICCS) 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 Chemicals (NZIoC) Listed
Switzerland. Inventory of Notified New Substances (CHINV) Listed
SAFETY DATA SHEET

NOVEL® TDA-12 Ethoxylate

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

CAS-No.
75-21-8

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>NFPA</td>
<td>3</td>
<td>1</td>
<td>0</td>
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</tbody>
</table>

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