NOVEL® 236E7 Ethoxylate

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

<table>
<thead>
<tr>
<th>Trade name</th>
<th>NOVEL® 236E7 Ethoxylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Ethoxylated Alcohol</td>
</tr>
<tr>
<td>Use</td>
<td>Detergent, Emulsifier, Hard-surface cleaner, Industrial &amp; Institutional cleaning, Personal care, Surfactant</td>
</tr>
<tr>
<td>Company</td>
<td>Sasol Chemicals (USA) LLC</td>
</tr>
<tr>
<td>(an affiliate of Sasol Chemicals North America LLC)</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>900 Threadneedle Ste 100  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>MSDS 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

Eye irritation Category 2B
Acute aquatic toxicity Category 1
Chronic aquatic toxicity Category 3

LABEL ELEMENTS

Hazard symbols

Signal word Warning

Hazard statements

H320 Causes eye irritation.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
SAFETY DATA SHEET

NOVEL® 236E7 Ethoxylate

P391 Collect spillage.

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>Alcohols, C10-16, ethoxylated</td>
<td>68002-97-1</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 fire fighting 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 Ambient

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 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
Appearance liquid;
NOVEL® 236E7 Ethoxylate

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Clear to slightly hazy</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>sweet pungent</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>approximately 163 °C, 325 °F;</td>
</tr>
<tr>
<td>Flammability</td>
<td>Upper explosion limit: no data available</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: no data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>approximately &gt; 260 °C, &gt; 500 °F;</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>12.3 °C, 54.1 °F;</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>320 °C, 608 °F;</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>0.987 g/cm³ @ 20 °C, 68 °F;</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>no data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
<tr>
<td>Viscosity</td>
<td>65.6 cSt @ 20 °C, 68 °F;</td>
</tr>
<tr>
<td>pH</td>
<td>6 - 8</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
</tbody>
</table>

SECTION 10 STABILITY AND REACTIVITY

Reactivity Stable at normal ambient temperature and pressure.

Chemical stability No decomposition if stored and applied as directed.
SAFETY DATA SHEET

NOVEL® 236E7 Ethoxylate

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 measurable 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: 2,300 mg/kg
Test substance: NOVEL® 1216CO-7 Ethoxylate

Skin corrosion/irritation
Primary irritation (rabbit): 4 hours; 0.1 (Max. score is 8.0.)
Test substance: NOVEL® 1216CO-7 Ethoxylate

Eye damage/irritation
Primary irritation (rabbit): 26.3 (Max. score is 110.)
Test substance: NOVEL® 1216CO-7 Ethoxylate

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:
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 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

Aquatic toxicity Very toxic to aquatic life. Harmful to aquatic life with long lasting effects.
Toxicity to fish LC50 (Pimephales promelas (fathead minnow)) 96 hours: 0.96 mg/l
Test substance: NOVEL® 1216-7 Ethoxylate
Toxicity to aquatic invertebrates no data available
Toxicity to algae no data available
Chronic toxicity to fish no data available
Chronic toxicity to aquatic invertebrates no data available
Biodegradation Readily biodegradable.
OECD Test Guideline 301E (28 d): 96 %
Test substance: NOVEL® 1216-7 Ethoxylate
Bioaccumulation no data available
Mobility in soil no data available
Other adverse effects no data available
SAFETY DATA SHEET

NOVEL® 236E7 Ethoxylate

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  UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Alcohol C12-C16 poly (1-6) ethoxylate), 9, III, Marine pollutant
This product is regulated as a hazardous material according to the Department of Transportation only in bulk quantities (greater than 119 gallons per package).

IATA  UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Alcohol C12-C16 poly (1-6) ethoxylate), 9, III
This product is regulated as a dangerous good when shipped by air in all quantities according to IATA.

IMDG  UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Alcohol C12-C16 poly (1-6) ethoxylate), 9, III, Marine pollutant
This product is regulated as a Marine Pollutant when shipped by water in all quantities according to the IMDG Code.

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

TSCA Inventory Listing
   Components
   Alcohols, C10-16, ethoxylated  CAS-No.  68002-97-1

SARA 302 Status
   Components

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SAFETY DATA SHEET

NOVEL® 236E7 Ethoxylate

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Classification
"Immediate (acute) health hazard"

SARA 313 Chemical Components
SARA 313: 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)
Components

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

INTERNATIONAL REGULATIONS

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

European Union
This preparation contains at least one substance which is listed on the EU No Longer Polymer List. 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.

Eye irritation, Category 2
Acute aquatic toxicity, Category 1
Chronic aquatic toxicity, Category 3

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
NOVEL® 236E7 Ethoxylate

New Zealand. Inventory of Chemicals (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

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>1</td>
<td>1</td>
<td>0</td>
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</tbody>
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