SAFETY DATA SHEET

By Product Ethoxylate

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

<table>
<thead>
<tr>
<th>Trade name</th>
<th>By Product Ethoxylate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Ethoxylated Alcohol</td>
</tr>
<tr>
<td>Use</td>
<td>Agricultural</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

<table>
<thead>
<tr>
<th>GHS Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (Oral)</td>
</tr>
<tr>
<td>Acute toxicity (Dermal)</td>
</tr>
<tr>
<td>Serious eye damage</td>
</tr>
<tr>
<td>Skin irritation</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
</tr>
</tbody>
</table>

LABEL ELEMENTS

Hazard symbols

Signal word Danger

Hazard statements

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
By Product Ethoxylate

Prevention
P264   Wash skin thoroughly after handling.
P270   Do not eat, drink or smoke when using this product.
P280   Wear protective gloves/ eye protection/ face protection.
P273   Avoid release to the environment.

Response
P301 + P312   IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330   Rinse mouth.
P302 + P352   IF ON SKIN: Wash with plenty of soap and water.
P332 + P313   If skin irritation occurs: Get medical advice/ attention.
P362   Take off contaminated clothing and wash before reuse.
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.
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, C6-C12, ethoxylated</td>
<td>68439-45-2</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Alcohols, C10-16, ethoxylated</td>
<td>68002-97-1</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Alcohols, C12-18, Ethoxylated</td>
<td>68213-23-0</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Alcohols, C16-C18, ethoxylated</td>
<td>68439-49-6</td>
<td>0 - 100</td>
</tr>
<tr>
<td>Castor oil, ethoxylated</td>
<td>61791-12-6</td>
<td>0 - 10</td>
</tr>
<tr>
<td>1,4-Butanediol, ethoxylated</td>
<td>61886-16-6</td>
<td>0 - 10</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.
SAFETY DATA SHEET

By Product Ethoxylate

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:
- Above product melting point.

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.
SAFETY DATA SHEET

By Product Ethoxylate

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;

Colour  Clear to slightly hazy

Form  liquid

Odour  sweet pungent

Odour Threshold  no data available

Flash point  > 212 °C, > 413 °F; PM;

Flammability  Upper explosion limit: no data available

                       Lower explosion limit: no data available

Boiling point/boiling range  ca. 121 - 260 °C, 250 - 500 °F;

Melting point/range  -5 - 31 °C, 23 - 87.8 °F;

Auto-ignition temperature  Typically > 236 °C, > 457 °F;

Decomposition temperature  no data available

Flammability (solid, gas)  no data available

Vapour pressure  negligible

Vapour density  > 4
By Product Ethoxylate

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>0.87 - 0.97 g/cm³</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>no data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>partly miscible</td>
</tr>
<tr>
<td>Viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>no data available</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.
- **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**: The product itself has not been tested. May be harmful by inhalation, ingestion, skin absorption.
- **Acute dermal toxicity**: LD50: 1,000 - 2,000 mg/kg
- **Acute inhalation toxicity**: LC50 value expected to exceed the saturated vapor concentration in air.
- **Acute oral toxicity**: LD50: 1,000 - 2,000 mg/kg
- **Skin corrosion/irritation**: Irritating to skin.
Eye damage/irritation: Causes severe irritation

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 (Fish) 96 hours: > 0.1 - 1 mg/l
- Category approach

Toxicity to aquatic invertebrates:
- EC50 (Daphnia (water flea)) 48 hours: > 0.1 - 1 mg/l
- Category approach

Toxicity to algae:
- EC50 (Green algae) 72 hours: > 0.1 - 1 mg/l
- Category approach
SAFETY DATA SHEET

By Product Ethoxylate

Chronic toxicity to fish
no data available

Chronic toxicity to aquatic invertebrates
EC10 (Daphnia (water flea)) 21 d: > 0.1 - 1 mg/l
Category approach

Biodegradation
Expected to be biodegradable.
This product has not been tested for biodegradability.

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
UN 3082, Environmentally hazardous substance, liquid, n.o.s.(Alcohol C12-16 poly (1-6) ethoxylate), 9, II, 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 C12-16 poly (1-6) ethoxylate), 9, II
This product is regulated as a dangerous good as defined by ICAO/IATA for air transportation.
By Product Ethoxylate

IMDG
UN 3082, Environmentally hazardous substance, liquid, n.o.s., (Alcohol C12-16 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 irritation, Skin irritation

TSCA Inventory Listing

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols, C6-C12, ethoxylated</td>
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</tr>
<tr>
<td>Castor oil, ethoxylated</td>
<td>61791-12-6</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α,α'-1,4-butanediylbis[ω-hydroxy-]</td>
<td>61886-16-6</td>
</tr>
</tbody>
</table>

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
"Immediate (acute) health hazard"

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></td>
</tr>
</tbody>
</table>

INTERNATIONAL REGULATIONS

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

European Union
Classification according to Regulation (EU) 1272/2008.
Acute toxicity (Oral), Category 4
Acute toxicity (Dermal), Category 4
Serious eye damage, Category 1
Skin 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) Not listed
Japan. Industrial Safety & Health Law (ISHL) Inventory Not 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) Not listed
China. Inventory of Existing Chemical Substances (IECSC) Listed
Mexico. National Inventory of Chemical Substances (INSQ) Not listed
New Zealand. Inventory of Chemicals (NZIoC) Not listed
Switzerland. Inventory of Notified New Substances (CHINV) Not listed
Taiwan. National Existing Chemical Inventory (NECI) Not 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 CAS-No.
Ethylene Oxide 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></th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard/ Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS®</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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