n-Propanol

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

Trade name  n-Propanol
Synonyms  1-Propanol, Hydroxypropane, 1-Propyl alcohol, Ethyl carbinol, n-Propan-1-ol, Propyl alcohol.
Use  Industrial use, Intermediate, Process/Extraction Solvent, Raw material for chemical processes, Raw material for industry, Solvent
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  Flammable liquids Category 2
Serious eye damage Category 1
Specific target organ toxicity - single exposure Category 3 (Narcotic effects)

LABEL ELEMENTS

Hazard symbols

Signal word  Danger

Hazard statements  H225  Highly flammable liquid and vapour.
H318  Causes serious eye damage.
H336  May cause drowsiness or dizziness.

Precautionary statements

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

P233   Keep container tightly closed.
P240   Ground/bond container and receiving equipment.
P241   Use explosion-proof electrical/ ventila ting/ lighting/ equipment.
P242   Use only non-sparking tools.
P243   Take precautionary measures against static discharge.
P280   Wear protective gloves/ protective cloth ing/ eye protection/ face protection.
P261   Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271   Use only outdoors or in a well-ventilated area.

Response
P303 + P361 + P353   IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378   In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.
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.
P304 + P340   IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312   Call a POISON CENTER/doctor if you feel unwell.

Storage
P403 + P405 + P235   Store locked up in a well-ventilated place. Keep cool.

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>n-Propanol</td>
<td>71-23-8</td>
<td>99.9</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. In case of shortness of breath, give oxygen. 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 Vapours may form explosive mixture with air. Flash back possible over considerable distance. Use water spray to disperse the vapors. NFPA Class 1C flammable liquid. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Suitable extinguishing media

Protective equipment and precautions for firefighters Wear self-contained breathing apparatus and protective suit. Keep containers and surroundings cool with water spray.

Further information Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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 Ensure all equipment is electrically grounded before beginning transfer operations. Keep away from heat and sources of ignition. Use only with adequate ventilation.

Storage/Transport pressure Ambient

Load/Unload temperature Ambient

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines). Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment.

PERSONAL PROTECTIVE EQUIPMENT

Eyes Chemical resistant goggles must be worn., Face-shield

Skin Wear suitable protective clothing, gloves and eye/face protection.
n-Propanol

**Inhalation**  Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. Use NIOSH approved respiratory protection.

**EXPOSURE GUIDELINES**

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propanol</td>
<td>OSHA PEL (Permissible Exposure Limit) 200 ppm 500 mg/m³</td>
</tr>
</tbody>
</table>

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit
TWA= Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance**: liquid;
- **Colour**: Clear, colorless
- **Form**: liquid
- **Odour**: alcohol-like
- **Odour Threshold**: No data available
- **Flash point**: 24 °C, 75 °F;
- **Flammability**:
  - Upper explosion limit: 13.5 % (V)
  - Lower explosion limit: 2.1 % (V)
- **Boiling point/boiling range**: 97 °C, 207 °F;
- **Melting point/range**: -127.5 °C, -197.5 °F;
- **Auto-ignition temperature**: 400 °C, 752 °F;
- **Decomposition temperature**: No data available
- **Flammability (solid, gas)**: No data available
- **Vapour pressure**: 28.2 hPa @ 25 °C, 77 °F;
- **Vapour density**: 2.1
n-Propanol

Density 0.804 g/cm³ @ 20 °C, 68 °F;

Specific gravity No data available

Water solubility completely miscible

Viscosity No data available

Viscosity, dynamic 2.3 mPa.s @ 20 °C, 68 °F;

pH No data available

Evaporation rate No data available

Partition coefficient: n-octanol/water log Pow: 0.2; @ 25 °C, 77 °F;

Volatile organic compounds (VOC) content 100 %

SECTION 10  STABILITY AND REACTIVITY

Reactivity No decomposition if stored and applied as directed.

Chemical stability Stable under recommended storage conditions.

Conditions to avoid Heat, flames and sparks. Avoid temperatures above 35°C, direct sunlight and contact with sources of heat.

Hazardous decomposition products Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.

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

Hazardous polymerisation Vapours may form explosive mixture with air.

SECTION 11  TOXICOLOGICAL INFORMATION

Acute dermal toxicity LD50 Rabbit: > 2,000 mg/kg (literature value)

Acute inhalation toxicity LC50 Rat (4 hours): > 20 mg/l (literature value)

Acute oral toxicity LD50 Rat: > 2,000 mg/kg
n-Propanol

Skin corrosion/irritation
(Rabbit): Draize Test
Not irritating, (literature value)

Serious eye damage/eye irritation
(Rabbit): Draize Test
Risk of serious damage to eyes., (literature value)

Respiratory or skin sensitisation
Guinea pig: not sensitizing; Maximisation Test (literature value)

Germ cell mutagenicity
Genotoxicity in vitro:
Type: Ames test
System: Salmonella typhimurium; with and without metabolic activation
Result: In vitro tests did not show mutagenic effects (literature value)

Genotoxicity in vivo:
No data available

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
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT - repeated exposure
No data available

Aspiration toxicity
No data available

Carcinogenicity
Assessment carcinogenicity:
Contains no ingredient listed as a carcinogen
### SECTION 12  ECOLOGICAL INFORMATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toxicity to fish</strong></td>
<td>LC50 (Pimephales promelas (fathead minnow)) 96 hours: &gt; 100 mg/l; flow-through test</td>
</tr>
<tr>
<td></td>
<td>(literature value)</td>
</tr>
<tr>
<td><strong>Toxicity to aquatic invertebrates</strong></td>
<td>EC50 (Daphnia magna (Water flea)) 48 hours: &gt; 100 mg/l; static test</td>
</tr>
<tr>
<td></td>
<td>(literature value)</td>
</tr>
<tr>
<td><strong>Toxicity to algae</strong></td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)) 48 hours: &gt; 100 mg/l</td>
</tr>
<tr>
<td></td>
<td>(literature value)</td>
</tr>
<tr>
<td><strong>Chronic toxicity to aquatic invertebrates</strong></td>
<td>NOEC (Daphnia magna (Water flea)) 21 d: &gt; 100 mg/l; semi-static test; OECD Test Guideline 211</td>
</tr>
<tr>
<td></td>
<td>(literature value)</td>
</tr>
<tr>
<td><strong>Biodegradation</strong></td>
<td>Readily biodegradable.</td>
</tr>
<tr>
<td></td>
<td>OECD Test Guideline 301D (15 d): &gt; 60 %</td>
</tr>
<tr>
<td></td>
<td>(literature value)</td>
</tr>
<tr>
<td><strong>Bioaccumulative potential</strong></td>
<td>No bioaccumulation is to be expected (log Pow &lt;= 4).</td>
</tr>
<tr>
<td><strong>Mobility in soil</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Other adverse effects</strong></td>
<td>This substance is not considered to be persistent, bioaccumulating and toxic (PBT).;</td>
</tr>
</tbody>
</table>

### SECTION 13  DISPOSAL CONSIDERATIONS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Waste Code</strong></td>
<td>D001 - Ignitability (RQ 100 LB). This product has the RCRA characteristic of ignitability.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Disposal methods</strong></td>
<td>Dispose of only in accordance with local, state, and federal regulations. Do not</td>
</tr>
<tr>
<td></td>
<td>contaminate any lakes, streams, ponds, groundwater or soil. Land disposal of this product is restricted.</td>
</tr>
<tr>
<td><strong>Empty containers</strong></td>
<td>Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO</td>
</tr>
<tr>
<td></td>
<td>NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT,</td>
</tr>
<tr>
<td></td>
<td>FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE</td>
</tr>
<tr>
<td></td>
<td>INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and</td>
</tr>
<tr>
<td></td>
<td>promptly returned to a drum reconditioner, or properly disposed.</td>
</tr>
</tbody>
</table>

### SECTION 14  TRANSPORT INFORMATION
n-Propanol

 DOT  UN 1274, n-Propanol, 3, III
 IATA  UN 1274, n-Propanol, 3, III
 IMDG  UN 1274, n-Propanol, 3, III

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

Components  CAS-No.
1-Propanol  71-23-8

SARA 302 Status

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

SARA 311/312 Classification

"Fire hazard", "Immediate (acute) health hazard"

SARA 313 Chemical

Components  CAS-No.  Weight percent
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  Reportable Quantity  Weight percent
none

INTERNATIONAL REGULATIONS

WHMIS Classification

Flammable liquids  Category 2
Serious eye damage  Category 1
Specific target organ toxicity - single exposure  Category 3 (Narcotic effects)
n-Propanol

European Union
Classification according to Regulation (EU) 1272/2008.
Flammable liquids, Category 2
Serious eye damage, Category 1
Specific target organ toxicity - single exposure, Category 3 (Narcotic effects)

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) Listed
Korea. Existing Chemicals Inventory (KECI) Listed
China. Inventory of Existing Chemical Substances (IECSC) Listed
Mexico Listed
New Zealand. Inventory of Chemical Substances Listed
Switzerland 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 none
CAS-No.

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>3</td>
<td>0</td>
</tr>
</tbody>
</table>

Revised Date 05/04/2018
Version 1.3
Print Date 05/17/2018
110000000963 Page 9 of 10
n-Propanol

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