n-Propanol

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

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

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/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ protective clothing/ 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.

Suitable
extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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.
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 ACGIH TLV (8-hour) 100 ppm</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;

**Relative density** 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  
(literature value)

**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

**Toxicity to fish**
LC50 (Pimephales promelas (fathead minnow)) 96 hours: > 100 mg/l; flow-through test (literature value)

**Toxicity to aquatic invertebrates**
EC50 (Daphnia magna (Water flea)) 48 hours: > 100 mg/l; static test (literature value)

**Toxicity to algae**
EC50 (Pseudokirchneriella subcapitata (green algae)) 48 hours: > 100 mg/l (literature value)

**Chronic toxicity to aquatic invertebrates**
NOEC (Daphnia magna (Water flea)) 21 d: > 100 mg/l; semi-static test; OECD Test Guideline 211 (literature value)

**Biodegradation**
Readily biodegradable.
OECD Test Guideline 301D (15 d): > 60 % (literature value)

**Bioaccumulative potential**
No bioaccumulation is to be expected (log Pow <= 4).

**Mobility in soil**
No data available

**Other adverse effects**
This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

SECTION 13  DISPOSAL CONSIDERATIONS

**Waste Code**
D001 - Ignitability (RQ 100 LB). This product has the RCRA characteristic of ignitability. 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.

**Disposal methods**
Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil. Land disposal of this product is restricted.

**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.
n-Propanol

SECTION 14  TRANSPORT INFORMATION

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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Propanol</td>
<td>71-23-8</td>
<td></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>
</table>

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

SARA 311/312 Classification

Flammable liquids, Serious eye damage, Specific target organ toxicity - single exposure

SARA 313 Chemical

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
</table>

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)

<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

<table>
<thead>
<tr>
<th>Flammable liquids</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Category 3 (Narcotic effects)</td>
</tr>
</tbody>
</table>
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. National Inventory of Chemical Substances (INSQ) 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 none

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>

Revision Date 08/13/2019 Version 1.4 Print Date 08/13/2019 110000000963 Page 9 of 10
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