1. Identification

Product Name 1-Propanol

Cat No.:
- A414-1; A414-4; A414-20; A414-500; A414RB-50; A414S-4;
- BP1130-500; XXNPROALCRS200; NC1348124; NC1396483

CAS No. 71-23-8

Synonyms n-Propanol; n-Propyl alcohol (Certified/Peroxide-Free/Sequencing)

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Flammable liquids</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Target Organs - Central nervous system (CNS).</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word Danger

Hazard Statements
- Highly flammable liquid and vapor
- Causes serious eye damage
Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Fire
In case of fire: Use CO2, dry chemical, or foam for extinction

Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>71-23-8</td>
<td>&gt; 99</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if
Ingestion
Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects
Difficulty in breathing. Causes eye burns. Causes severe eye damage. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media
CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Unsuitable Extinguishing Media
Water may be ineffective

Flash Point
15 °C / 59 °F

Autoignition Temperature
405 °C / 761 °F

Explosion Limits
Upper 13.7 vol %
Lower 2.2 vol %

Specific Hazards Arising from the Chemical
Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal Precautions
Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling
Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>TWA: 100 ppm</td>
<td>(Vacated) TWA: 200 ppm (Vacated) STEL: 625 mg/m³</td>
<td>TWA: 500 mg/m³</td>
<td>TWA: 100 ppm</td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH - National Institute for Occupational Safety and Health

Engineered Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type:
Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol-like</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>20% aq. solution</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-127 °C / -196.6 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>97 °C / 206.6 °F @ 760 mmHg</td>
</tr>
<tr>
<td>Flash Point</td>
<td>15 °C / 59 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>Upper: 13.7 vol % Lower: 2.2 vol %</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>25 mbar @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.07</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.800</td>
</tr>
</tbody>
</table>
### 1-Propanol

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility</td>
<td>Miscible with water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>405 °C / 761 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>2.2 mPa.s at 20 °C</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C3 H8 O</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>60.1</td>
</tr>
</tbody>
</table>

#### 10. Stability and reactivity

**Reactive Hazard**
- None known, based on information available

**Stability**
- Stable under normal conditions.

**Conditions to Avoid**

**Incompatible Materials**
- Strong oxidizing agents, Strong acids

**Hazardous Decomposition Products**
- Carbon monoxide (CO), Carbon dioxide (CO₂)

**Hazardous Polymerization**
- Hazardous polymerization does not occur.

**Hazardous Reactions**
- None under normal processing.

#### 11. Toxicological information

**Acute Toxicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD₅₀ Oral</th>
<th>LD₅₀ Dermal</th>
<th>LC₅₀ Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>LD₅₀ = 1870 mg/kg (Rat)</td>
<td>LD₅₀ = 4049 mg/kg (Rabbit)</td>
<td>LC₅₀ &gt; 33.8 mg/L (Rat) 4 h</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**
- No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation**
- Severe eye irritant

**Sensitization**
- No information available

**Carcinogenicity**
- The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>71-23-8</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Mutagenic Effects**
- No information available

**Reproductive Effects**
- No information available.

**Developmental Effects**
- No information available.

**Teratogenicity**
- No information available.

**STOT - single exposure**
- Central nervous system (CNS)

**STOT - repeated exposure**
- None known

**Aspiration hazard**
- No information available

**Symptoms / effects, both acute and delayed**
- Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Endocrine Disruptor Information  
No information available

Other Adverse Effects  
The toxicological properties have not been fully investigated.

### 12. Ecological information

#### Ecotoxicity

**Ecotoxicity**
Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>Not listed</td>
<td>Pimephales promelas:</td>
<td>EC50 = 17700 mg/L 5 min</td>
<td>EC50: 3339 - 3977 mg/L, 48h Static (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50=4480 mg/L 96h</td>
<td>EC50 = 45000 mg/L 5 h</td>
<td>EC50: = 3642 mg/L, 48h (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC50 = 8686 mg/L 15 min</td>
<td>EC50 = 980 mg/L 12 h</td>
<td></td>
</tr>
</tbody>
</table>

#### Persistence and Degradability

Persistence is unlikely

#### Bioaccumulation/ Accumulation

No information available.

#### Mobility

Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>0.2</td>
</tr>
</tbody>
</table>

### 13. Disposal considerations

#### Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
</table>
| UN1274 | N-PROPA
| 3       | II                  |

#### TDG

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1274</td>
<td>n-Propanol</td>
<td>3</td>
<td>II</td>
</tr>
</tbody>
</table>

#### IATA

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
</table>
| UN1274 | n-PROPA
| 3       | II                  |

#### IMDG/IMO

<table>
<thead>
<tr>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
</table>
| UN1274 | N-PROPA
| 3       | II                  |

### 15. Regulatory information

#### United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active-Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>71-23-8</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
1-Propanol

TSCA  US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical
Substances & Mixtures, Under TSCA Section 6(h) (PBT)  Not applicable

TSCA 12(b) - Notices of Export  Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>71-23-8</td>
<td>X</td>
<td>-</td>
<td>200-746-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-29362</td>
</tr>
</tbody>
</table>

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313  Not applicable

SARA 311/312 Hazard Categories  See section 2 for more information

CWA (Clean Water Act)  Not applicable

Clean Air Act  Not applicable

OSHA - Occupational Safety and Health Administration  Not applicable

CERCLA  Not applicable

California Proposition 65  This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ):  N
DOT Marine Pollutant  N
DOT Severe Marine Pollutant  N

U.S. Department of Homeland Security  This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade  Serious risk, Grade 3

Authorisation/Restrictions according to EU REACH

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 1-Propanol

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OECD HPV</th>
<th>Persistent Organic Pollutant</th>
<th>Ozone Depletion Potential</th>
<th>Restriction of Hazardous Substances (RoHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>71-23-8</td>
<td>Listed</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Concern (SVHC)**

Use restricted. See item 75, (see link for restriction details)

**REACH links**

## Safety, health and environmental regulations/legislation specific for the substance or mixture

**Component** | **CAS No** | **OECD HPV** | **Persistent Organic Pollutant** | **Ozone Depletion Potential** | **Restriction of Hazardous Substances (RoHS)** |
---|---|---|---|---|---|
| n-Propyl alcohol | 71-23-8 | Listed | Not applicable | Not applicable | Not applicable |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

### Other International Regulations

---|---|---|---|---|---|
| n-Propyl alcohol | 71-23-8 | Not applicable | Not applicable | Not applicable | Not applicable |

## 16. Other information

**Prepared By**
Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date**
03-Jun-2010

**Revision Date**
13-Oct-2023

**Print Date**
13-Oct-2023

**Revision Summary**
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of SDS**