# SAFETY DATA SHEET

## 1. Identification

**Product Name**
1-Propanol

**Cat No.**
A414-1; A414-4; A414-20; A414-500; A414RB-50; A414S-4; BP1130-500

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

**Recommended Use**
Laboratory chemicals.

**Uses advised against**
No Information available

**Details of the supplier of the safety data sheet**

<table>
<thead>
<tr>
<th>Company</th>
<th>Emergency Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisher Scientific</td>
<td>CHEMTREC®, Inside the USA: 800-424-9300</td>
</tr>
<tr>
<td>One Reagent Lane</td>
<td>CHEMTREC®, Outside the USA: 001-703-527-3887</td>
</tr>
<tr>
<td>Fair Lawn, NJ 07410</td>
<td></td>
</tr>
<tr>
<td>Tel: (201) 796-7100</td>
<td></td>
</tr>
</tbody>
</table>

## 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></th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids</td>
<td>Category 2</td>
</tr>
<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
May cause drowsiness or dizziness
1-Propanol

Revision Date 27-Feb-2014

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

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

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

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

Ingestion
Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects
Breathing difficulties. . Causes eye burns. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: 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
\[ \text{CO}_2, \text{dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.} \]

Unsuitable Extinguishing Media
\[ \text{Water may be ineffective} \]

Flash Point
\[ 15 \ ^\circ \text{C} / 59 \ ^\circ \text{F} \]

Method -
No information available

Autoignition Temperature
\[ 405 \ ^\circ \text{C} / 761 \ ^\circ \text{F} \]

Explosion Limits

\begin{align*}
\text{Upper} & : 13.7 \text{ vol } \% \\
\text{Lower} & : 2.2 \text{ vol } \%
\end{align*}

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 (\text{CO}_2)

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. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.

Environmental Precautions
Avoid release to the environment. See Section 12 for additional ecological Information.

Methods for Containment and Clean Up
Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Take precautionary measures against static discharges.

7. Handling and storage

Handling
Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>TWA: 100 ppm</td>
<td>(Vacated) TWA: 200 ppm</td>
<td>IDLH: 800 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) TWA: 500 mg/m³</td>
<td>TWA: 200 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 250 ppm</td>
<td>TWA: 500 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacated) STEL: 625 mg/m³</td>
<td>STEL: 250 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 200 ppm</td>
<td>STEL: 625 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 500 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV
1-Propanol

Revision Date 27-Feb-2014

<table>
<thead>
<tr>
<th>n-Propyl alcohol</th>
<th>TWA: 200 ppm</th>
<th>TWA: 200 ppm</th>
<th>TWA: 100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-23-8 (&gt; 99 )</td>
<td>TWA: 492 mg/m³</td>
<td>TWA: 500 mg/m³</td>
<td>TWA: 100 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 250 ppm</td>
<td>STEL: 250 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>STEL: 614 mg/m³</td>
<td>STEL: 625 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering 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.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State

Liquid

Appearance

Colorless

Odor

Alcohol-like

Odor Threshold

No information available

pH

7  20% aq. solution

Melting Point/Range

-127 °C / -196.6 °F

Boiling Point/Range

97 °C / 206.6 °F @ 760 mmHg

Flash Point

15 °C / 59 °F

Evaporation Rate

No information available

Flammability (solid,gas)

No information available

Flammability or explosive limits

Upper 13.7 vol %

Lower 2.2 vol %

Vapor Pressure

25 mbar @ 20 °C

Vapor Density

2.07

Relative Density

0.800

Solubility

Miscible with water

Partition coefficient; n-octanol/water

No data available

Autoignition Temperature

405 °C / 761 °F

Decomposition temperature

No information available

Viscosity

2.2 mPa.s at 20 °C

Molecular Formula

C₃H₈O

Molecular Weight

60.1

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

#### Component Information

<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>1870 mg/kg (Rat)</td>
<td>4049 mg/kg (Rabbit)</td>
<td>13548 ppm (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

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

#### Endocrine Disruptor Information

No information available

#### Other Adverse Effects

See actual entry in RTECS for complete information.

## 12. Ecological information

### 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: LC50=4480 mg/L 96h</td>
<td>EC50 = 17700 mg/L 5 min EC50 = 45000 mg/L 5 h EC50 = 8686 mg/L 15 min EC50 = 980 mg/L 12 h</td>
<td>3642 mg/L EC50 = 48 h 3339 - 3977 mg/L EC50 = 48 h</td>
</tr>
</tbody>
</table>

### Persistence and Degradability

No information available

### Bioaccumulation/ Accumulation

No information available.

### Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>0.34</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>UN1274</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>N-PROPANOL</td>
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<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

TDG

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

<table>
<thead>
<tr>
<th>UN-No</th>
<th>UN1274</th>
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<tbody>
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<td>Proper Shipping Name</td>
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<tr>
<td>Packing Group</td>
<td>II</td>
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</table>

IMDG/IMO

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

15. Regulatory information

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Propyl alcohol</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-746-9</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable
SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Acute Health Hazard</th>
<th>Chronic Health Hazard</th>
<th>Fire Hazard</th>
<th>Sudden Release of Pressure Hazard</th>
<th>Reactive Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

State Right-to-Know

<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

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class B2 Flammable liquid
D2B Toxic materials

16. Other information

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

Creation Date 03-Jun-2010
Revision Date 27-Feb-2014
Print Date 27-Feb-2014
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 on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.
End of SDS