



# Safety Data Sheet

## 1. PRODUCT IDENTIFICATION

Name ***n*-Propyl Alcohol or *n*-Propanol**  
 Synonyms 1-propanol, *normal* propyl alcohol, 1-hydroxypropane  
 CAS# 71-23-8  
 Europe EC# 200-746-9  
 Product Uses paint & ink solvent, chemical feedstock, and others

### EMERGENCY INFORMATION

Canada Call CANUTEC (collect) (613) 996-6666  
 U.S.A. Call CHEMTREC (800) 424-9300

## 2. HAZARDS

<b>GHS Class (Category)</b>	<i>flammable (2)</i>	<i>acute oral (3)</i>	<i>eye corrosive (1)</i>	<i>STOT (3)</i>
<b>Signal Words</b>	<b>DANGER</b>	<b>WARNING</b>	<b>DANGER</b>	<b>WARNING</b>
<b>Hazard Statements</b>	<i>highly flammable liquid &amp; vapour (H226)</i>	<i>harmful if swallowed (H302)</i>	<i>causes serious eye damage (H318)</i>	<i>may cause drowsiness or dizziness (H336)</i>



### GHS Precautionary Statements for Labelling

- P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
- P240 Ground or bond container and receiving equipment.
- P241 Use explosion-proof electrical, ventilating and lighting equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P262 Do not get in eyes, on skin or on clothing.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear eye protection, protective gloves and clothing of nitrile or "Viton".

Canada – WHMIS Key:

**B 2, D 2B**  
*B 2 – Flash Point <38°C, B 3 – Flash Point >38°C & <93°C*  
*D 1 – Immediately Toxic, D 2 – Chronic Toxicity*  
*C – Oxidising Substance, E – Corrosive, F – Reactive Substance*



## 3. COMPOSITION

	%	TWAEV / TLV ppm / mg/m <sup>3</sup>	LD <sub>50</sub> (mg/kg) ORAL	LD <sub>50</sub> (mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
n-Propyl Alcohol	100%	100 / 245	1870	5040	4000

**Please ensure that this SDS is given to, and explained to people using this product.**



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#### **4. FIRST AID**

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.
INHALATION:	Remove from contaminated area promptly. <b>CAUTION: Rescuer must not endanger himself!</b> If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION:	Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

*Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.*

#### **5. FIRE FIGHTING & FLAMMABILITY**

Flash Point	above 15°C / 59°F (closed cup); also 23°C / 74°F (Pensky-Martens closed cup) <sup>1</sup>
Autoignition Temperature	above 371°C / 700°F ó higher values are also reported
Flammable Limits	2.2% ó 13.7%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Firefighting Precautions	polymer foam, dry chemical, water fog or spray only to cool containers; product floats on water ó water jet spreads flames; firefighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

#### **6. ACCIDENTAL RELEASE MEASURES**

**Serious Fire Potential: blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof.**

Leak Precaution	dyke to control spillage and prevent environmental contamination
Handling Spill	ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal

#### **7. HANDLING & STORAGE**

Store in a cool, dry environment, away from sources of ignition, heat, oxidising agents and substances listed in Part 7. Use non-sparking bronze or aluminium hand tools. All electrical and mechanical equipment (including lighting, switchgear and forklift trucks) used with or around this product must be explosion-proof. Although n-propanol is not a static accumulator, it is prudent to ground or bond the source container, the receiving container and transfer equipment before pumping or decanting.

Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, are tightly sealed unless in use.

Avoid creating or breathing product vapour. If vapour is created in use, install adequate exhaust ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a suitable respirator with organic vapour cartridge.

Never cut, drill, weld or grind on or near this container. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

#### **8. EXPOSURE CONTROL & PERSONAL PROTECTION**

Ontario TWAEV	100ppm / 245mg/m <sup>3</sup>	Ontario STEV	250ppm / 615mg/m <sup>3</sup>
ACGIH TLV	100ppm / 246mg/m <sup>3</sup>	ACGIH STEL	not listed
OSHA PEL	200ppm / 500mg/m <sup>3</sup>	OSHA STEL	250ppm / 615mg/m <sup>3</sup>
Ventilation	mechanical ventilation may be required to control airborne titre; depending on handling procedures		
Hands	nitrile or ðVitonð gloves recommended ó other types may also protect; consult supplier to confirm suitability		
Eyes	safety glasses with side shields ó always protect the eyes		
Clothing	wear impermeable (above) apron, boots, & long sleeves if there is any danger of splashing,		

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**9. PHYSICAL PROPERTIES**

Odour & Appearance	clear, colourless liquid with sharp, pungent odour <i>ó similar to rubbing alcohol but stronger</i>
Odour Threshold	5-11ppm
Vapour Pressure	14.5mmHg / 1.95kPa (20°C / 68°F)
Evaporation Rate ( <i>Butyl Acetate = 1</i> )	0.9
Vapour Density (air = 1)	2.1
Boiling Range	98°C / 208°F
Freezing Point	-127°C / -197°F
Specific Gravity	0.805 (20/20°C)
Water Solubility	complete
Also soluble in	most organic solvents, polar and non-polar
Log P <sub>O/W</sub> (Octanol/H <sub>2</sub> O partition)	0.25
Viscosity	2.2centipoise (20°C / 68°F)
pH	none <i>ó (does not liberate hydrogen ions when dissolved)</i>
Conversion Factor	1ppm = 2.45
Molecular Weight	60grams per mole

**10. REACTIVITY**

Dangerously Reactive With	strong oxidising agents, strong acids, acid chlorides, acid anhydrides,
Also Reactive With	alkali metals, alkaline earth metals release hydrogen <i>ó reaction may be vigorous</i>
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

**11. TOXICITY****Effects, Acute Exposure**

Skin Contact	little to no effect after 24-hour contact <sup>1</sup>
Skin Absorption	slight; no toxic effects likely by this route
Eye Contact	severely irritating <i>ó injury incompletely resolved after 10 days<sup>1</sup>; vapour irritating at 10,000ppm;</i>
Inhalation	not known <i>ó probably causes dizziness, drowsiness, intoxication, nausea</i>
Ingestion	dizziness, drowsiness, intoxication, nausea <i>ó not a route of industrial exposure, particularly in view of propanol's strong, unpleasant odour</i>
LD <sub>50</sub> (oral)	1870, 2200, 6500 & 8000mg/kg (rat), 2825 & 3500mg/kg (rabbit), 3000mg/kg (dog), 4500 & 6800mg/kg (mouse)
LD <sub>50</sub> (skin)	4030 <sup>1</sup> , 5040 & 6730 <sup>1</sup> mg/kg (rabbit)
LC <sub>50</sub> (inhalation)	>4000 & >13,550ppm (rat), 19,600ppm (mouse)

**Effects, Chronic Exposure**

General	prolonged exposure may cause dermatitis
Sensitising	not a sensitiser in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans; fetotoxic & teratogenic at doses also causing maternal toxicity
Mutagen	no known effect on humans or animals
Synergistic With	liver toxins; enhances toxicity of chlorinated solvents

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## 12. ECOLOGICAL INFORMATION

Bioaccumulation	cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; aerobic: 75% in 20 days, 81% in 15 days <sup>1</sup> anaerobic 77-81% biodegradation in 15 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 2.9 days
Mobility in soil, water	highly water soluble; moves readily in soil and water
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish, 96hr)	3800mg/litre (Alburnus alburnus) <sup>1</sup> , 4480 & 4555 <sup>1</sup> mg/litre (Pimephelas promelas), 4650mg/litre (Cyprinodon sp.)
EC <sub>50</sub> (Crustacea, 48hr)	3644 <sup>1</sup> & 6300mg/litre (Daphnia magna), 1000mg/litre (Gammarus pulex) <sup>1</sup> , 1520m/litre (Nemoura cinerea)
EC <sub>50</sub> (Algae, 72hr)	9170mg/litre (Pseudokirchnerella subcapitata) <sup>1</sup>
NOEC (Algae, 48hr)	1150mg/litre (Chlorella pyrenoidosa) <sup>1</sup>
EC <sub>50</sub> (Bacteria)	9600mg/litre (activated sludge), 8686 & 18,400mg/litre (Photobacterium phosphoreum)

## 13. DISPOSAL

Waste Disposal	<b>do not flush to sewer</b> , recycle solvent if possible, may be incinerated in approved facility
Containers	<b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. <b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling. <b>IBCs</b> (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs). Steel containers must be inspected, pressure tested & recertified every 5 years. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

## 14. TRANSPORT CLASSIFICATION

<i>Canada TDG</i>	PIN	UN - 1274
AND	Shipping Name	<b>n-propanol or n-propyl alcohol</b>
<i>U.S.A. 49 CFR</i>	Class & Packing Group	<b>3 (II)</b>
Marine Pollutant		not a marine pollutant
ERAP Required		NO



## 15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

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## 15. REGULATIONS, cont'd

### **U.S.A. Regulations:**

**Immediately Dangerous to Life or Health:** 800 ppm

**Allowable Tolerances:** Residues of *n*-propanol are exempted from the requirement of a tolerance when used as a solvent or cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

**OSHA Standards:** Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 200 ppm (500 mg/cu m).

**NIOSH Recommendations:** Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 200 ppm (500 mg/cu m).

**Threshold Limit Values:** 8 hr Time Weighted Avg (TWA): 100 ppm

**Atmospheric Standards:** This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non air quality health and environmental impact and energy requirements. *n*-Propyl alcohol is produced, as an intermediate or a final product, by process units covered under this subpart.

**FIFRA Requirements:** Residues of *n*-propanol are exempted from the requirement of a tolerance when used as a solvent or cosolvent in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

**FDA Requirements:** Propyl alcohol is a food additive permitted for direct addition to food for human consumption as a synthetic flavoring substance and adjuvant in accordance with the following conditions: a) they are used in the minimum quantity required to produce their intended effect, and otherwise in accordance with all the principles of good manufacturing practice, and 2) they consist of one or more of the following, used alone or in combination with flavoring substances and adjuvants generally recognized as safe in food, prior-sanctioned for such use, or regulated by an appropriate section in this part.

## 16. OTHER INFORMATION

Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577

Data from RTECS, HSDB (Haz. Substance Data Base), Cheminfo (CCOHS), IUCLID Datasheets (ESIS – European Chem. Substance Info. System), & others.

Preparation Date: **September 2011**

Revision Date: **September 2014**

**(1) European Chemicals Agency (ECHA) dossier on propan-1-ol:**

[http://apps.echa.europa.eu/registered/data/dossiers/DISS-9d9caf30-12fa-6dc6-e044-00144f67d249/DISS-9d9caf30-12fa-6dc6-e044-00144f67d249\\_DISS-9d9caf30-12fa-6dc6-e044-00144f67d249.html](http://apps.echa.europa.eu/registered/data/dossiers/DISS-9d9caf30-12fa-6dc6-e044-00144f67d249/DISS-9d9caf30-12fa-6dc6-e044-00144f67d249_DISS-9d9caf30-12fa-6dc6-e044-00144f67d249.html)

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