PURITAN PRODUCTS

Effective Date: 12/15/13
Replaces Revision: 01/01/13, 02/04/05

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: N-PROPYL ALCOHOL
Synonyms: 1-Propanol, Ethyl Carbinol, 1-Hydroxypropane, N-Propanol
Chemical Formula: CH3(CH2)2OH
Recommended Use of the Chemical and Restrictions On Use: Laboratory Reagent
Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225
Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:
Flammable liquids (Category 2)
Eye irritation (Category 1)
Specific target organ toxicity - single exposure (Category 3)

Risk Phrases:
Symbol: Xi
R11: Highly flammable.
R41: Risk of serious damage to eyes.
R67: Vapors may cause drowsiness and dizziness.

Label Elements:

Trade Name: N-PROPYL ALCOHOL

Signal Word: Danger

Hazard Statements:
H225: Highly flammable liquid and vapor.
H316: Causes mild skin irritation.
H318: Causes serious eye damage.
H333: May be harmful if inhaled.
H336: May cause drowsiness or dizziness.

Precautionary Statements:
P210: Keep away from heat / sparks / open flames / hot surfaces. No smoking.
P261: Avoid breathing dust / fume / gas / mist / vapors / spray.
P280: Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

3. Composition / Information on Ingredients

CAS Number: 71-23-8
EC Number: 200-746-9
Index Number: 603-003-00-0
Molecular Weight: 60.1 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Propyl Alcohol	71-23-8	200-746-9	100%	Yes	Substance

4. First-aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Call a physician.

Ingestion: Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Note to Physician: Treat CNS depression supportively. Rule out other causes. Treat ingestion with gastric lavage and saline catharsis. Metabolite acetone may be detected in urine.

5. Fire-fighting Measures

Fire: Flammable Liquid and Vapor! **/** Flash point: 22C (72F) CC / Autoignition temperature: 412C (774F) / Flammable limits in air % by volume: lel: 2.3; uel: 13.7

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Ignites on contact with potassium tertbutoxide.

Fire Extinguishing Media*:* Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Water can be used to dilute to raise flashpoint and to flush away from possible sources of ignition.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:
OSHA Permissible Exposure Limit (PEL): 200 ppm (TWA), 250 ppm (STEL)
ACGIH Threshold Limit Value (TLV): 200 ppm (TWA), 400 ppm (STEL)
A3 - Confirmed animal carcinogen with unknown relevance to humans

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded, a full face piece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in Oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A particulate (NIOSH type N95 or better) prefilter should be used for the particulate.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials.

Eye Protection: Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance: Clear, colorless liquid
Odor: Alcohol odor
Odor Threshold: Not determined
pH: 8.5 at 200 g/l at 20C (68F)
% Volatiles by volume @ 21C (70F): 100
Melting Point: -197F (-127C)
Boiling Point / Boiling Range: 207F (97C)
Flash Point: 22F (72C) Closed Cup
Evaporation Rate (BuAC=1): 1.3
Flammability: **C**an be ignited
Upper / Lower Flammability or Explosive Limits: Upper – 13.7 / Lower – 2.1, % by volume
Vapor Pressure (mm Hg): 21 @ 77F (25C)
Vapor Density (Air=1): 2.07
Relative Density: 0.804 g/cm3 at 77F (25C)

Solubility: Infinitely soluble
Partition Coefficient: n-octanol / water: log Pow: 0.25 - 0.34
Auto-ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: 1.938 mPa

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flame, ignition sources, incompatibles.

Incompatible Materials: Reacts violently with Potassium-tert-butoxide. Can react vigorously with oxidizing materials.

Hazardous Decomposition Products: Carbon Dioxide and Carbon Monoxide may form when heated to decomposition. May produce acrid smoke and irritating fumes when heated to decomposition.

11. Toxicological Information

Emergency Overview: WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY AFFECT CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Potential Health Effects:

Inhalation: Vapors have a mild narcotic effect and act as an upper respiratory tract irritant. Symptoms may include irritation of the eyes, nose, and throat, drowsiness, headache, and incoordination. Excessive exposures may lead to narcosis and central nervous system depression.

Ingestion: May cause nausea, vomiting, drowsiness, gastrointestinal pain, cramps and diarrhea. Large doses may cause death.

Skin Contact: Defatting agent. May cause skin irritation. Skin absorption may occur with symptoms paralleling those from inhalation exposure.

Eye Contact: Vapors are irritating to the eyes. Splashes may cause severe irritation, with stinging, tearing, redness and pain.

Chronic Exposure: Prolonged or repeated skin contact may cause dermatitis. No systemic chronic effects have been reported in humans.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin problems or impaired respiratory function may be more susceptible to the effects of this substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) May cause drowsiness or dizziness.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Propyl Alcohol (71-23-8)	No	No	None

Acute Toxicity:
Oral Rat LD50: 1870 mg/kg; Skin Rabbit LD50: 4060 mg/kg; Inhalation mouse LC50: 48 mg/m3; Irritation,open, eye rabbit 4mg, Severe; open, skin, rabbit: 580 mg/24 Hr. Mild; Investigated as a tumorigen, a mutagen, and a reproductive effecter.

12. Ecological Information

Ecotoxicity: This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are between 1 and 10 mg/l.

Persistence and Degradability: When released into the soil, this material is expected to readily biodegrade. When released into water, this material is expected to readily biodegrade

Bioaccumulative Potential: This material is not expected to significantly bioaccumulate.

Mobility in Soil: When released into the soil, this material is expected to quickly evaporate. When released into the soil, this material is expected to leach into groundwater.

Other adverse effects: When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

UN Number: UN1274
UN Proper Shipping Name: N-PROPANOL
Packing Group: II

DOT **IMDG** **IATA**

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)
Transport Hazard Class(es): 3

Maritime Transport IMDG/GGVSea
Transport Hazard Class(es): 3
Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR
Transport Hazard Class(es): 3

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: No additional information

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Propyl Alcohol (71-23-8)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Propyl Alcohol (71-23-8)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

	SARA 302		SARA 313	
Ingredient	RQ	TPQ	List Chemical	Catg.
Propyl Alcohol (71-23-8)	No	No	No	No

Federal, State & International Regulations - Part 2

	RCRA		TSCA
Ingredient	CERCLA	261.33	8(d)
Propyl Alcohol (71-23-8)	No	No	No

Chemical Weapons Convention: No		**TSCA 12(b):** No		**CDTA:** No
SARA 311/312:	**Acute:** Yes	**Chronic:** Yes	**Fire:** Yes	**Pressure**: No
Reactivity: No		Pure / Liquid		

Australian Hazchem Code: 2[S]E

Poison Schedule: None allocated

16. Other Information

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO PURITAN PRODUCTS AT THIS TIME. WHILE BELIEVED TO BE ACCURATE, PURITAN PRODUCTS DOES NOT CLAIM IT TO BE ALL INCLUSIVE. IT IS PROVIDED INDEPENDENT OF ANY SALE OF THE PRODUCT, FOR THE PURPOSE OF HAZARD COMMUNICATION, AND AS A GUIDE FOR THE APPROPRIATE PRECAUTIONARY HANDLING OF THE PRODUCT BY PROPERLY TRAINED INDIVIDUALS. IT IS NOT INTENDED TO PROVIDE PRODUCT PERFORMANCE OR APPLICABILITY INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, THE UNDERLYING PRODUCT DATA, OR THE INFORMATION CONTAINED HEREIN.

YOU ARE URGED TO OBTAIN MATERIAL SAFETY DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED THEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY OR DAMAGE RESULTING FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.