

1. Identification

Product identifier	n-PROPYL ALCOHOL, REAGENT (ACS)		
Other means of identification			
Product code	1593		
Synonym(s)	1-PROPANOL * N-PROPANOL		
Recommended use	professional, scientific and technical activities: other professional, scientific and technical activities		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/Distributor information			
Company name	GFS Chemicals, Inc.		
Address	P.O. Box 245 Powell OH 43065 US		
Telephone	Phone	740-881-5501	
	Toll Free	800-858-9682	
	Fax	740-881-5989	
Website	www.gfschemicals.com		
E-mail	service@gfschemicals.com		
Emergency phone number	Emergency Assistance	Chemtrec 800-424-9300	

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 4
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
OSHA hazard(s)	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Highly flammable liquid and vapor. Harmful if swallowed. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness. Suspected of damaging fertility or the unborn child.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.
Response	Eliminate all ignition sources if safe to do so. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Rinse mouth.

Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container to an approved incineration plant.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid
Supplemental information	
Hazard statement	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity.

3. Composition/information on ingredients

Substances

Hazardous components			
Chemical name	Common name and synonyms	CAS number	%
n-PROPYL ALCOHOL	1-PROPANOL N-PROPANOL	71-23-8	100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. Get medical attention if irritation develops and persists.
Ingestion	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do not use mouth-to-mouth method if victim ingested the substance.
Most important symptoms/effects, acute and delayed	Irritation of eyes and mucous membranes. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Alcohol resistant foam. Powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. By heating and fire, harmful vapors/gases may be formed. Material will float and may ignite on surface of water.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear SCBA.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk.
Specific methods	In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Should not be released into the environment. This product is miscible in water. Prevent entry into waterways, sewers, basements or confined areas.

Large Spills: Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Vapors may form explosive mixtures with air. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code". DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not get this material in contact with eyes. Do not taste or swallow. Avoid breathing mist or vapor. Avoid contact during pregnancy/while nursing. Use personal protective equipment as required. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
n-PROPYL ALCOHOL (CAS 71-23-8)	PEL	500 mg/m ³
		200 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
n-PROPYL ALCOHOL (CAS 71-23-8)	TWA	100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
n-PROPYL ALCOHOL (CAS 71-23-8)	STEL	625 mg/m3
	TWA	250 ppm 500 mg/m3 200 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants**

n-PROPYL ALCOHOL (CAS 71-23-8) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

n-PROPYL ALCOHOL (CAS 71-23-8) Skin designation applies.

US. NIOSH: Pocket Guide to Chemical Hazards

n-PROPYL ALCOHOL (CAS 71-23-8) Can be absorbed through the skin.

US. Rhode Island Hazardous Substances Right-to-Know Act (R.I. Gen. Laws Section 28-21-1 et. seq.)

n-PROPYL ALCOHOL (CAS 71-23-8) Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles are recommended.

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing. Wear protective gloves.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Not available.

General hygiene considerations When using, do not eat, drink or smoke. Do not get in eyes. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Clear.
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Characteristic odor (alcohol).
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-196.6 °F (-127 °C)
Initial boiling point and boiling range	206.96 °F (97.2 °C)
Flash point	71.60 °F (22.00 °C) Open Cup 73.40 °F (23.00 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	2.1
Flammability limit - upper (%)	13.5
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	2.8 kPa at 25 °C
Vapor density	2.1
Relative density	Not available.
Solubility(ies)	Miscible
Partition coefficient (n-octanol/water)	0.3
Auto-ignition temperature	775 °F (412.78 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.81 g/cm3 estimated
Dynamic viscosity	2.256 mPa.s
Dynamic viscosity temperature	68 °F (20 °C)
Flammability class	Flammable IB estimated
Flash point class	Flammable IC
Molecular formula	CH3CH2CH2OH
Molecular weight	60.10 g/mol
Percent volatile	100 %
Specific gravity	0.8053 at 20 °C
VOC (Weight %)	100 %

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Risk of explosion. Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Harmful if swallowed.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause irritation to the respiratory system.
Skin contact	Due to lack of data the classification is not possible.
Eye contact	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics Permanent eye damage including blindness could result. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
n-PROPYL ALCOHOL (CAS 71-23-8)		
Acute		
Oral		
LD50	Mouse	6800 mg/kg
	Rabbit	2800 mg/kg
		2.8 g/kg
	Rat	1870 mg/kg
		1.87 g/kg
Other		
LD50	Mouse	3125 mg/kg

Product	Species	Test Results
	Rat	590 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory sensitization	Due to lack of data the classification is not possible.
Skin sensitization	Due to lack of data the classification is not possible.
Germ cell mutagenicity	Due to lack of data the classification is not possible.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Confirmed animal carcinogen with unknown relevance to humans.
Reproductive toxicity	Suspected of damaging fertility or the unborn child. Investigated as a reproductive effector.
Specific target organ toxicity - single exposure	Respiratory tract irritation. Narcotic effects.
Specific target organ toxicity - repeated exposure	Due to lack of data the classification is not possible.
Aspiration hazard	Due to lack of data the classification is not possible.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
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Product	Species	Test Results
n-PROPYL ALCOHOL (CAS 71-23-8)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 3339 - 3977 mg/l, 48 hours
Fish	LC50	Bleak (Alburnus alburnus) 3000 - 4000 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	None known.
Bioaccumulative potential	Not available.
Partition coefficient n-octanol / water (log Kow)	0.25

Mobility in soil	Not available.
Other adverse effects	Not available.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Not available.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN1274
UN proper shipping name	n-Propanol or Propyl alcohol, normal
Transport hazard class(es)	3
Subsidiary class(es)	Not available.
Packing group	II

Material name: n-PROPYL ALCOHOL, REAGENT (ACS)

1593

Version #: 01

Revision date: Issue date: June-13-2013

SDS US

6 / 9

Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Labels required	3
Special provisions	B1, IB2, T4, TP1
Packaging exceptions	150
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1274
UN proper shipping name	n-Propanol
Transport hazard class(es)	3
Subsidiary class(es)	-
Packaging group	II
Environmental hazards	No
Labels required	Not available.
ERG Code	3L
Special precautions for user	Not available.

IMDG

UN number	UN1274
UN proper shipping name	n-PROPANOL
Transport hazard class(es)	3
Subsidiary class(es)	-
Packaging group	II
Environmental hazards	
Marine pollutant	No
Labels required	Not available.
EmS	F-E, S-D
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance
 No

SARA 311/312 Hazardous chemical
 Yes

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)
 Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

Food and Drug Administration (FDA)
 Not regulated.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US. Massachusetts RTK - Substance List

n-PROPYL ALCOHOL (CAS 71-23-8)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

n-PROPYL ALCOHOL (CAS 71-23-8)

US. Rhode Island RTK

n-PROPYL ALCOHOL (CAS 71-23-8)

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date	June-13-2013
Version #	01
Further information	Not available.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available. 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.
Revision Information	Product and Company Identification: Synonyms Hazards Identification: US Hazard Categories Composition / Information on Ingredients: Disclosure Overrides Physical & Chemical Properties: Multiple Properties Transport Information: Proper Shipping Name/Packing Group HazReg Data: North America