

SAFETY DATA SHEET



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N-AMYL ALCOHOL

SDS No. M0014

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: n-Amyl Alcohol

Synonyms: 1-Amyl Alcohol; n-Butyl Carbinol; 1-Pentanol; n-Pentanol; Pentyl Alcohol; Primary Amyl Alcohol

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Flammable Liquids: GHS Category 3

Specific Target Organ Toxicity, single exposure: GHS Category 2

Label Elements

Signal Word: WARNING!

Hazard Statements:

- H226 – Flammable liquid and vapor.
- H305 – May be harmful if swallowed and enters airways.
- H315 – Causes skin irritation.
- H320 – Causes eye irritation.
- H335 – May cause respiratory tract irritation.

Precautionary Statements:

- P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P280 – Wear protective gloves/clothing/eye protection/face protection.
- P301-P310: IF SWALLOWED: Immediately call POISON CENTER or doctor/physician.
- P303+P361+P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Emergency Overview

Causes irritation to eyes, skin, and respiratory tract. Breathing vapors may cause dizziness and drowsiness. May be absorbed through intact skin. Aspiration hazard. May be harmful if swallowed. Can enter lungs and cause damage. May

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cause central nervous system effects. Flammable liquid and vapor. Hygroscopic. Target Organs: Central nervous system, lungs, eyes, and skin.

HMIS Rating:

Health – 1* Flammability – 2 Physical Hazard – 0 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
n-Amyl Alcohol	71-41-0	>99%	Yes

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Ingestion: Potential aspiration hazard if swallowed. Get medical help immediately. Do not induce vomiting unless directed by medical personnel. If vomiting occurs naturally, have victim lean forward. Never give anything by mouth to an unconscious person.

Skin Contact: Remove any contaminated clothing. Wash skin with water for at least 15 minutes. Get medical attention if irritation persists. Wash clothing before reuse.

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

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Flammable liquid and vapor (GHS Category 3)

Auto-ignition Temperature: 300° C (572° F)

Flash Point: 33° C (91° F)

Flammable Limits: Lower Limit – 1.2 vol %, Upper Limit – 10.0 vol %

Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (carbon monoxide and carbon dioxide).

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire.

Fire Fighting Media: For small fires, use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. Do NOT use straight streams of water.

National Fire Protective Association: Health - 2, Flammability - 3, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Vapor surprising foam may be used. Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Do not use sawdust or any combustible material. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits: None established

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: Sweetish, mild odor.

Odor Threshold: Not available

Molecular Formula: $\text{CH}_3(\text{CH}_2)_4\text{OH}$

Molecular Weight: 88.15

Auto-ignition Temperature: 300° C (572° F)

Flash Point: 33° C (91° F)

Flammable Limits: Lower Limit – 1.2 vol %, Upper Limit – 10.0 vol %

pH: Not available.

Boiling Point: 137-139° C @ 760 mm Hg

Freezing/Melting Point: -78.5° C

Decomposition Temperature: Not available

Specific Gravity: 0.811 g/cm³

Vapor Density (Air=1): 3.0

Vapor Pressure: 2.2 mm Hg @ 25° C.

Evaporation Rate (Butyl acetate = 1): 0.18

Viscosity: 38 SUS @ 37.8 deg C

Solubility: Slightly soluble in water

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperature and pressure.

Conditions to Avoid: Ignition sources, moisture, excess heat, confined spaces.

Incompatibility With Various Substances: Strong oxidizing agents, strong acids, strong bases, alkali metals, alkaline earth metals, isocyanates, aliphatic amines.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Inhalation of vapor may cause respiratory tract irritation. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause kidney damage. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.

INGESTION HAZARD: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. Ingestion of large amounts may cause central nervous system depression.

SKIN CONTACT HAZARD: If absorbed, causes symptoms similar to those of ingestion and inhalation. May cause irritation and dermatitis.

EYE CONTACT HAZARD: Vapors may cause eye irritation. Contact may cause eye irritation, lacrimation (tearing), burning pain, and inflammation. May cause chemical conjunctivitis and corneal damage.

Chronic Exposure Hazards: Prolonged or repeated skin contact may cause dermatitis. Chronic exposure may cause kidney damage

Animal Toxicity:

Draize test, rabbit, eye: 81 mg Severe;

Draize test, rabbit, eye: 5 uL/24H Severe;

Draize test, rabbit, skin: 3200 mg/24H Severe;

Draize test, rabbit, skin: 20 mg/24H Moderate;

Oral, mouse: LD50 = 200 mg/kg;

Oral, rat: LD50 = 5660 uL/kg;

Oral, rat: LD50 = 370 mg/kg;

Skin, rabbit: LD50 = 2830 uL/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No information available.

Environmental Fate: No information available.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal

definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT, IATA, IMO

Proper Shipping Name: Pentanols

Hazard Class: 3

UN Number: UN1105

Packing Group: III

Canada TDG

Additional Information: Flashpoint 33 C

15. REGULATORY INFORMATION

US Federal Regulations:

TSCA: CAS# 71-41-0 is listed on the TSCA Inventory.

Health and Safety Reporting List: Not listed.

Chemical Test Rules: CAS# 71-41-0: Not listed.

Section 12b: Not listed.

TSCA Significant New Use Rule: 71-41-0: No SNUR under TSCA.

CERCLA Hazardous Substances: CAS# 71-41-0; Does not have an RQ

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 71-41-0 – immediate, delayed, fire

Section 313: n-amyl alcohol (CAS# 71-41-0) is not subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

Clean Air Act: CAS# 71-41-0 is not listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 71-41-0 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 71-41-0 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts

California Prop 65: California No Significant Risk Level: Not listed

Canada:

DSL/NDSL: CAS# 71-41-0 is listed on Canada's DSL list.

WHMIS: The material has a WHMIS category of B2, D2B. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by those regulations.

Ingredient Disclosure List: CAS# 71-41-0 is listed on Canada's Ingredient Disclosure List.

DSCL (EEC):

Hazard Symbols: Xn

Risk Phrases: R10 – Flammable; R22 – Harmful if swallowed.

Safety Phrases: S24/25 – Avoid contact with skin and eyes.

WGK (Water Danger/protection): CAS# 71-41-0: 1

16. OTHER INFORMATION

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Last Revised: 12/12/2011 – Converted to GHS format.

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