

SAFETY DATA SHEET

Butyl Alcohol, n-

This MSDS is valid for all grades that start with catalog number 331

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: Butyl Alcohol, n-
Synonyms: BUTANOL; N-BUTYL ALCOHOL; PROPYL CARBINOL; BUTYL ALCOHOL, butanol; Butyl hydroxide; 1-Hydroxybutane; propylcarbinol; propylmethanol
Other means of identification: CAS No. 71-36-3
EINECS No. 200-751-6

Recommended use of the chemical and restrictions on use:

General Solvent Use

Supplier Details:

Pharmco Products, Inc.
58 Vale Road, Brookfield,
CT 06804, USA.
Tel: 203.740.3471
Fax: 203.740.3481
CCN17213

Pharmco Products, Inc.
1101 Isaac Shelby Drive, Shelbyville,
KY 40065, USA.
Tel: 502.232.7600
Fax: 502.633.6100
CCN17213



Emergency Contact: CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)

2. HAZARDS IDENTIFICATION

OSHA Hazards:

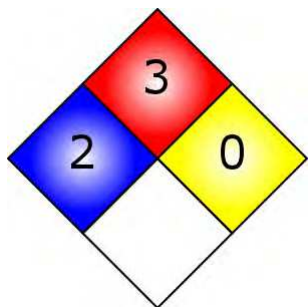
Flammable liquid, Harmful by ingestion, Irritant, Target organ effect

Target Organs:

Blood, Central nervous system, Ears, Kidney, Liver

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

NFPA



GHS label elements, including precautionary statements



Signal Word:

DANGER!

Hazard statement(s)

| | |
|------|------------------------------------|
| H315 | Causes skin irritation. |
| H226 | Flammable liquid and vapor |
| H302 | Harmful if swallowed. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

Precautionary statement(s)

| | |
|--------------------|--|
| P210 | Keep away from heat, sparks, open flames, and hot surfaces. No smoking. |
| P233 | Keep container tightly closed. |
| P403 + P235 | Store in a well-ventilated place. Keep cool. |
| P240 | Ground/bond container and receiving equipment. |
| P501 | Dispose of contents and container to an approved waste disposal plant. |
| P241 | Use explosion-proof electrical, ventilating, and lighting equipment. |
| P242 | Use only non-sparking tools. |
| P280 | Wear protective gloves and eye and face protection. |
| P303 + P361 + P353 | IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water. |
| P370 + P378 | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for |

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

extinction.

GHS Classification(s)

- Acute toxicity, Oral (Category 4)
- Flammable Liquids (Category 3)
- Specific target organ toxicity - single exposure (Category 3)
- Eye damage (Category 1)
- Skin irritation (Category 2)

Other hazards which do not result in classification:

Potential Health Effects:

| Organ | Description |
|------------|--|
| Eyes | Causes eye irritation. |
| Ingestion | May be harmful if swallowed. |
| Inhalation | May be harmful if inhaled. Causes respiratory tract irritation. Vapors may cause drowsiness and dizziness. |
| Skin | Harmful if absorbed through skin. Causes skin irritation. |

3. COMPOSITION AND INFORMATION ON INGREDIENTS

| | |
|-------------------------------|---|
| Chemical identity: | Butyl Alcohol |
| Common name / Synonym: | BUTANOL; N-BUTYL ALCOHOL; PROPYL CARBINOL; BUTYL ALCOHOL, butanol; Butyl hydroxide; 1-Hydroxybutane; propylcarbinol; propylmethanol |
| CAS number: | 71-36-3 |
| EINECS number: | 200-751-6 |
| ICSC number: | 0111 |
| RTECS #: | EO1400000 |
| UN #: | 1120 |
| EC #: | 603-004-00-6 |

| % Weight | Material | CAS |
|----------|---------------|---------|
| 100 | Butyl Alcohol | 71-36-3 |

4. FIRST AID MEASURES

General advice

Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Skin

Wash skin with soap and copious amounts of water. Seek medical attention.

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

Carbon oxides expected to be the primary hazardous combustion product.

Special protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.

Flammable Properties

Classification

OSHA/NFPA Class IC Flammable Liquid.

Flash point

35 °C (95 °F) - closed cup

Autoignition temperature

343 °C (650 °F)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear respiratory protection. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods and materials for containment and cleaning up:

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put the material into a convenient waste disposal container. Keep container closed.

7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

| Component | Source | Type | Value | Note |
|---------------|------------|---------|--------|--|
| Butyl Alcohol | US (OSHA) | Ceiling | 50 ppm | OSHA Table Z-1 Limits for Air Contaminants |
| Butyl Alcohol | US (ACGIH) | TWA | 20 ppm | |

Appropriate engineering controls:

Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

Skin and body protection:

Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance (physical state, color, etc.) | Liquid. Colorless, clear. |
| Odor | Specific data not available |
| Odor threshold | Specific data not available |
| pH | Specific data not available |
| Freezing point | -90 °C (-130 °F) |
| Initial boiling point and boiling range | 119 °C (246 °F) |
| Flash point | 35 °C (95 °F) - closed cup |
| Evaporation rate | Specific data not available |
| Flammability (solid, gas) | Flammable |
| Upper / Lower flammability or explosive limits | 11.2% (V) / 1.4% (V) |
| Vapor pressure | 5 hPa (4 mmHg) at 20 °C (68 °F) |
| Vapor Density | 2.56 |
| Relative Density | 0.81 g/cm ³ at 25 °C (77 °F) |
| Solubility(ies) | soluble |
| Partition coefficient n-octanol/water(ies) | Specific data not available |
| Auto-ignition temperature | 343 °C (650 °F) |
| Decomposition temperature | Specific data not available |
| Formula (BUTYL ALCOHOL) | C ₄ H ₁₀ O |
| Molecular Weight (BUTYL ALCOHOL) | 74.12 g/mol |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Chemical Stability | Stable under recommended storage conditions. |
| Possibility of hazardous reactions | Vapors may form explosive mixture with air. |
| Conditions to avoid (e.g., static discharge, shock or vibration) | Heat, flames, and sparks. |
| Incompatible materials | Oxidizing agents, Alkali metals, Bases, Strong acids, Halogens |
| Hazardous decomposition products | Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products. |

11. TOXICOLOGICAL INFORMATION

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

- Butyl Alcohol 71-36-3

Product Summary:

No data available for the mutagenic, teratogenic, or reproductive effects of the product. No data available to designate product as an aspiration hazard or to cause specific target organ toxicity through repeated exposure.

Acute Toxicity:

| | | | |
|-------------------|--------|-------------|---------|
| LC50 (Inhalation) | Rat | 8,000 ppm | 4 hours |
| LD50 (Dermal) | Rabbit | 3,400 mg/kg | |
| LD50 (Oral) | Rat | 790 mg/kg | |

Irritation:

Eyes

Rabbit - Irritating to eyes - 24 hours

Respiratory or Skin Sensitization

No data available

Skin

Rabbit- severe skin irritation- 24 hours

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause drowsiness or dizziness. - Central Nervous System

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause respiratory irritation. - Lungs

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

| Organ | Description |
|------------|--|
| Eyes | Irritating to the eyes. |
| Ingestion | Harmful if ingested. |
| Inhalation | May be harmful if inhaled. Irritating to the respiratory tract. Vapors may cause drowsiness and dizziness. |

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

| | |
|------|---|
| Skin | Harmful if absorbed through skin. Irritating to skin. |
|------|---|

12. ECOLOGICAL INFORMATION

- Butyl Alcohol 71-36-3

Ecotoxicity (aquatic and terrestrial, where available):

Acute Fish Toxicity (BUTYL ALCOHOL)

LC50 / 96 hours Fathead Minnow - 1,840 mg/L

Persistence and degradability:

No data available

Bioaccumulative potential:

Bioaccumulation: Rainbow Trout - 24 hours, Bioconcentration factor (BCF): 0.38

Other adverse effects:

No data available

13. DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

| | |
|--------------------------------------|----------|
| UN number | 1120 |
| UN proper shipping name | Butanols |
| Transport hazard class(es) | 3 |
| Packing group (if applicable) | III |

Reportable Quantity

5,000 lbs

IMDG

UN-Number: 1120 Class: 3 Packing Group: III

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

EMS-No: F-E, S-D

Proper shipping name: BUTANOLS

Marine pollutant: No

IATA

UN-Number: 1120 Class: 3 Packing Group: III

Proper shipping name: Butanols

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:

OSHA Hazards

Flammable liquid, Harmful by ingestion, Irritant, Target organ effect

All ingredients are on the following inventories or are exempted from listing

| Country | Notification |
|--------------------------|--------------|
| Australia | AICS |
| Canada | DSL |
| China | IECS |
| European Union | EINECS |
| Japan | ENCS/ISHL |
| Korea | ECL |
| New Zealand | NZIoC |
| Philippines | PICCS |
| United States of America | TSCA |

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313: n-Butyl Alcohol CAS-No. 71-36-3 Revision Date 2007-07-01

SARA 311/312 Hazards

Acute Health Hazard

Chronic Health Hazard

Fire Hazard

CERCLA

n-Butyl alcohol CAS-No. 71-36-3, RQ: 5,000 lbs

Massachusetts Right To Know Components

n-Butyl Alcohol CAS-No. 71-36-3 Revision Date 2007-07-01

**Product Information: 203.740.3471 Emergency Assistance (CHEMTREC): 1.800.424.9300 (USA)
+1.703.527.3887 (INT)**

Pennsylvania Right To Know Components

n-Butyl Alcohol CAS-No. 71-36-3 Revision Date 2007-07-01

New Jersey Right To Know Components

n-Butyl Alcohol CAS-No. 71-36-3 Revision Date 2007-07-01

California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS**

Disclaimer

PHARMCO-AAPER believes that the information on this MSDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, PHARMCO-AAPER does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable. Information is correct to the best of our knowledge at the date of the MSDS publication.