PHARMCO-AAPER
THE POWER OF THREE[3]

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

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

Distributed by:
Rocky Mountain Reagents
SCIENTIFIC SOLUTIONS SINCE 1951
4621 Technology Drive, Golden, CO 80403
pH: (303) 762-0800 fax: (303) 762-1240
Part #'s: B1041, B1045

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

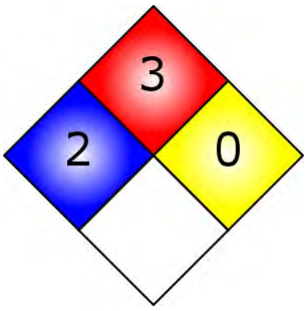
Emergency Contact: **CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)**

2. HAZARDS IDENTIFICATION

OSHA Hazards:
Flammable liquid, Harmful by ingestion, Irritant, Target organ effect

Target Organs:
Blood, Central nervous system, Ears, Kidney, Liver

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

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.

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.

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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)

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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:

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 incompatibilites:

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.

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/cm3 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)	C4H10O
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 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.

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

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

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.

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

Disclaimer
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