



Preparing for the New Era of Laboratories

MATERIAL SAFETY DATA SHEET (MSDS)

According to regulation (EU) no.1907/2006

n-BUTANOL 99,5% AR

PRODUCT CODE : B-3056

CAS No : 71-36-3

FORMULA : $\text{CH}_3(\text{CH}_2)_3\text{OH}$

UN No : 1120

website : www.labotiq.net

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MSDS Number : 0237

Date : Aug 26th, 2024

Version : 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product Name** : n-BUTANOL 99,5% AR
Synonyms : 1-Butanol, n-Butanol, Propylcarbinol, Butan-1-ol, BuOH
CAS No. : 71-36-3
HS Code : 2905 13 00
Chemical Formula : $\text{CH}_3(\text{CH}_2)_3\text{OH}$ $\text{C}_4\text{H}_{10}\text{O}$ Hill
Molecular Weight : 74.12 g/mol
Product Code : B-3056
Brand : Labotiq
1.2 Manufacturer : Labotiq
Address : Jl.Terapi Raya AD2-Bumi Menteng Asri Bogor, Jawa Barat Indonesia – 16111
Website : www.labotiq.net
Email : labotiq.id@gmail.com,
For information : Phone : (+62-251) 839110, 8311662, Fax : (+62-251) 83135710
Emergency number : +6281316894650
1.3 Application : Laboratory chemicals, Manufacture of substances, General Chemical reagent

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Flammable liquids (Category 3), H226
 Acute toxicity, Oral (Category 4), H302
 Skin irritation (Category 2), H315
 Serious eye damage (Category 1), H318
 Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
 Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

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

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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P233	Keep container tightly closed. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

SECTION 3: Composition/information on ingredients**3.1 Substances**

Synonyms	: 1-Butanol, n-Butanol, Propylcarbinol, Butan-1-ol, BuOH
Formula	: CH ₃ (CH ₂) ₃ OH C ₄ H ₁₀ O Hill
Molecular weight	: 74.12 g/mol
CAS-No.	: 71-36-3
EC-No.	: 200-751-6
Index-No.	: 603-004-00-6

3.2 Mixture

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
n-Butanol CAS-No. 71-36-3 EC-No. 200-751-6 Index-No. 603-004-00-6	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; H226, H302, H315, H318, H336, H335	<=100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures**4.1 Description of first aid measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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In case of eye contact

Flush eyes with water as a precaution

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**Carbon dioxide (CO₂) Foam Dry powder**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Flash back possible over considerable distance. Combustible. Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing

5.4 Further information

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion

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6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Handle and store under inert gas. hygroscopic

Storage class

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	inhalation	Local effects	310 mg/m ³
Consumer DNEL, longterm	inhalation	Local effects	55 mg/m ³
Consumer DNEL, longterm	oral	Systemic effects	

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0,082 mg/l
Fresh water sediment	0,178 mg/kg

Sea water	0,0082 mg/l
Sea sediment	0,0178 mg/kg
Aquatic intermittent release	2,25 mg/l
Sewage treatment plant	2476 mg/l
Soil	0,015 mg/kg

8.2 Exposure controls

Appropriat engineering controls

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

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber
Minimum layer thickness: 0,4 mm
Break through time: 480 min
Material tested: Camatril®

Splash contact

Material: Chloroprene
Minimum layer thickness: 0,65 mm
Break through time: 120 min
Material tested: KCL 720 Camapren®

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: liquid, clear Colour: colourless
Odour	ethanolic
Odour Threshold	0,004 ppm
pH	7 at 70 g/l at 20 °C
Melting point/freezingpoint	Melting point: -90 °C
Initial boiling point and boiling range	116 - 118 °C - lit.

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Flash point	35 °C - Pensky-Martens closed cup - ISO 2719
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or	Upper explosion limit: 11.2 %(V)
explosive limits	Lower explosion limit: 1.4 %(V)
Vapour pressure	No data available
Vapour density	< 10 hPa at 20 °C
Relative density	2,56 at 20 °C - (Air = 1.0)
Water solubility	0,81 g/mL at 25 °C - lit.
Partition coefficient: noctanol/water	66 g/l at 20 °C - OECD Test Guideline 105
Auto-ignition temperature	log Pow: 1 at 25 °C –
Decomposition temperature	Bioaccumulation is not expected.
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	Viscosity, dynamic: 2,95 mPa.s at 20 °C
	No data available
	none

9.2 Other safety information

Surface tension	69,9 mN/m at 1g/l at 20 °C - OECD Test Guideline 115
Relative vapor density	2,56 at 20 °C - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with: strong oxidising agents chromium(VI) oxide
Exothermic reaction with: Alkali metals Alkaline earth metals Aluminum strong reducing agents Acid chlorides

10.4 Conditions to avoid

Exposure to moisture. Heating.

10.5 Incompatible materials

Oxidizing agents, Alkali metals, Bases, Strong acids, Halogens, Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 790 mg/kg

Remarks: Liver:Fatty liver degeneration. Kidney, Ureter, Bladder:Other changes. Blood:Other changes. (RTECS)

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Inhalation: No data available

LD50 Dermal - Rabbit - male - 3.430 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation - 2 h

Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irreversible effects on the eye (OECD Test Guideline 405)

(Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitisation

No data available(n-Butanol)

Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): micronucleus.

Test system: Chinese hamster lung cells

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Micronucleus test

Species: Mouse Application

Route: Oral

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

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

Reproductive toxicity

No data available(n-Butanol)

Specific target organ toxicity - single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available(n-Butanol)

Additional Information

RTECS: E01400000

drying, cracking of the skin, Skin irritation(n-Butanol) To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(n-Butanol)

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SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish

static test LC50 - Pimephales promelas (fathead minnow) - 1.376 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 1.328 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae

static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 225 mg/l - 96 h (OECD Test Guideline 201)

Toxicity to bacteria

static test EC50 - Pseudomonas putida - 4.390 mg/l - 17 h (DIN 38421 TEIL 8)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 20 d

Result: 92 % - Readily biodegradable.

Remarks: (ECHA)

Ratio BOD/ThBOD 33 %

Remarks: (IUCLID)

12.3 Bioaccumulative potential

Bioaccumulation

Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l(n-butanol)

Bioconcentration factor (BCF): 0,38

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

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SECTION 14: Transport information**14.1 UN number**

ADR/RID: 1120

IMDG: 1120

IATA: 1120

14.2 UN proper shipping name

ADR/RID: BUTANOLS

IMDG: BUTANOLS

IATA: Butanols

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

14.4 Packaging group I

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

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

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Labotiq shall not be held liable for any damage resulting from handling or from contact with the above product.

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Revision Date : August 26, 2024