



SAFETY DATA SHEET

1 IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Catalogue No : B 15629

Product Name : 2 - Butanol

Manufacture / Supplier Identification Company : **Nice Chemicals (P) Ltd.,**
PB No: 2217, Manimala Road, Edappally,
Kochi - 682 024, Kerala, India.

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2 COMPOSITION / INFORMATION ON INGREDIENTS

Synonyms : sec-Butyl alcohol
(±)-2-Butanol

CAS - No : 78 - 92 - 2

Molar Mass :

Molecular Weight : 74.12 g/mol

Molecular Formula : C₄H₁₀O C₄H₁₀O

EC - INDEX No : 603-127-00-5

EC - No : 201-158-5

3 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 : Flammable liquids (Category 3), H226
Eye irritation (Category 2), H319
Specific target organ toxicity - single exposure
(Category 3), H335, H336
For the full text of the H-Statements mentioned in
this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or
1999/45/EC : Xi Irritant R36/37
R67
For the full text of the R-phrases mentioned in this
Section, see Section 16.

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Label Elements

Labelling according Regulation (EC) No 1272/2008

Pictogram :  

Signal word : Warning

Hazard statement(s)

H226 : Flammable liquid and vapour.
 H319 : Causes serious eye irritation.
 H335 + H336 : May cause respiratory irritation, and drowsiness or dizziness.

Precautionary statement(s)

P261 : Avoid breathing vapours.
 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 : none
 Other Hazards : none

4 FIRST AID MEASURES

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

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

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

After eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

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

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Indication of any immediate medical attention and special treatment needed : no data available

5 FIRE - FIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture : Carbon oxides

Advice for firefighters : Wear self contained breathing apparatus for fire fighting if necessary.

Further Information : Use water spray to cool unopened containers.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Environmental-protection : Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up : Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7 HANDLING AND STORAGE

Precautions for safe handling : Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities : Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Specific end users : A part from the uses mentioned in section 1.2 no other specific uses are stipulated

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8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameter : Components with workplace control parameters

Exposure Controls

Appropriate 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 : Face shield and safety glasses 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.

Body Protection : impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection : Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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).

Control of environmental exposure : Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance : **Form** : Liquid
Colour : No data available

Odour : No data available

Catalogue No	: B 15629
Product Name	: 2 - Butanol
Odour Threshold	: No data available
pH	: No data available
Melting Point/Freezing point	: Melting point/range: -115 °C - lit.
Initial Boiling point and boiling range	: 98 °C - lit.
Flash Point	: 27 °C - closed cup
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper/lower flammability or explosive limits	: Upper explosion limit: 9,8 %(V) Lower explosion limit: 1,7 %(V)
Vapour Pressure	: 15,3 hPa at 20 °C 24,4 hPa at 25 °C
Vapour Density	: 2,56 - (Air = 1.0)
Relative density	: 0,808 g/cm ³ at 25 °C
Water solubility	: soluble
Partition coefficient: noctanol/water	: log Pow: 0,146
Autoignition temperature	: No data available
Viscosity	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Other Safety information	: Surface tension 23 mN/m at 20 °C Relative vapour density 2,56 - (Air = 1.0)

10 STABILITY AND REACTIVITY

Reactivity	: No data available
Chemical stability	: Stable under recommended storage conditions.
Conditions to be avoided	: Heat, flames and sparks.
Substance to be avoided	: No data available
Hazardous decomposition products	: Other decomposition products - no data available
Possibility of hazardous reactions	: No data available
incompatible materials	: acids, Acid chlorides, Acid anhydrides, Oxidizing agents, Halogens, Peroxides

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11 TOXICOLOGICAL INFORMATION

Acute Toxicity : LD50 Oral - rat - 2.193 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia. Behavioral:Coma.

LD50 Dermal - rat - > 2.000 mg/kg

Further toxicological Information

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.

Eye Irritation test (rabbit) : No data available

Respiratory or skin Sensitization : Severe skin irritation

Germ cell mutagenicity : No data available

After Inhalation : No data available

After Skin contact : No data available

After swallowing : No data available

After swallowing of large amounts : No data available

Further data : No data available

Reproductive toxicity : Reproductive toxicity - rat - Inhalation
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death.
Specific Developmental Abnormalities:
Musculoskeletal system.

Developmental Toxicity - rat - Inhalation
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific target organ toxicity-single exposure : May cause respiratory irritation.
May cause drowsiness or dizziness.

Specific target organ toxicity-repeated exposure : No data available

Signs and symptoms of Exposure : No data available

Additional Information : RTECS: EO1750000
Nausea, Dizziness, Headache, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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Toxicity

Toxicity to fish : LC50 - Pimephales promelas (fathead minnow) -
3.670 mg/l - 96 h

Toxicity to daphnia and
other aquatic : EC50 - Daphnia magna (Water flea) - 4.227 mg/l -
invertebrates : 48 h

EC100 - Daphnia magna (Water flea) - 5.000 mg/l -
24 h

Persistence and degradability : No data available

Bioaccumulative potential : No data available

Mobility in soil : No data available

Results of PBT and vPvB assessment : PBT/vPvB assessment not available as chemical
safety assessment not required/not conducted

Other adverse effects : No data available

13 DISPOSAL METHOD**Waste treatment methods**

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

Contaminated packaging : Dispose of as unused product.

14 TRANSPORT INFORMATION

UN number : ADR/RID: - 1120
: IMDG: - 1120 IATA:
- 1120

UN Proper shipping name : ADR/RID: BUTANOLS
: IMDG: BUTANOLS
: IATA: Butanols

Transport hazard class(es) : ADR/RID: - 3
: IMDG: - 3
: IATA: - 3

Packaging group : ADR/RID: - III
: IMDG: - III
: IATA: - III

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Environmental group : ADR/RID: - no pollutant: no IMDGMarine IATA: -no

Special precaution for user : No data available

15 REGULATORY INFORMATION

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

Safety, health and environmental regulations/legislation specific for the substance or mixture : No data available

Chemical safety assessment : For this product a chemical safety assessment was not carried out

16 OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
H226 : Flammable liquid and vapour.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
STOT SE : Specific target organ toxicity - single exposure

Full text of R-phrases referred to under sections 2 and 3

Xi : Irritant
R10 : Flammable.
R36/37 : Irritating to eyes and respiratory system.
R67 : Vapours may cause drowsiness and dizziness.



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16 OTHER INFORMATION

The information contained here in is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precaution. It does not represent a guarentee of the properties of the product.