

SAFETY DATA SHEET



Revision date: 17-Sep-2021

Revision Number 8

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name BUTYL DIGLYCOL ETHER

Product Code(s) 000030169101

Other means of identification

CAS No. 112-34-5

Synonyms Butyl diethoxol; Butyl carbitol; Butyl dioxitol; Butyl diicinol; 2-(2-Butoxyethoxy) ethanol; Diethylene glycol monobutyl ether; Diethylene glycol butyl ether; DEGBE.

Recommended use of the chemical and restrictions on use

Recommended use Solvent.

Uses advised against No information available.

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Serious eye damage/eye irritation	Category 2
--	------------

SIGNAL WORD

Warning

Label elements

Exclamation mark

**Hazard statements**

H319 - Causes serious eye irritation

Precautionary Statements - Prevention

Wash eyes thoroughly after handling.

Wear eye/face protection

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Precautionary Statements - Storage

No storage statements

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification**General Hazards**

Poisons Schedule (SUSMP) 5

3. COMPOSITION/INFORMATION ON INGREDIENTS**Substance**

Chemical name	CAS No.	Weight-%
2-(2-butoxyethoxy)ethanol	112-34-5	>=99
2-Butoxyethanol	111-76-2	<=0.5

4. FIRST AID MEASURES**Description of first aid measures****Emergency telephone number**

Poisons Information Center, Australia: 13 11 26

Poisons Information Center, New Zealand: 0800 764 766

Inhalation

Remove to fresh air. Call a physician if symptoms occur.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Wash skin with soap and water. Get medical attention if symptoms occur.

Ingestion

Clean mouth with water. Drink 1 or 2 glasses of water. Get medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed**Symptoms**

Irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical, CO₂, water spray or alcohol-resistant foam.

Unsuitable extinguishing media High volume water jet.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Combustible material. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Pay attention to flashback.

Hazardous combustion products Carbon oxides.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin and eyes. Do not breathe vapor or mist. Stop leak if you can do it without risk. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. Use personal protective equipment as required. Wash thoroughly after handling.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin and eyes. Do not breathe vapor or mist. Remove all sources of ignition. Take precautionary measures against static discharges. Use personal protection equipment. Wash thoroughly after handling. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from

open flames, hot surfaces and sources of ignition. Store away from foodstuffs. Keep container closed when not in use.

Classified as a C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Acids. Alkalis. Oxidizing agents. Aluminium. Copper. Neoprene. Natural rubber.

Poisons Schedule (SUSMP) 5

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

2-Butoxyethanol: 8hr TWA = 96.9 mg/m³ (20 ppm), 15 min STEL = 242 mg/m³ (50 ppm), Sk

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

'Sk' (skin) Notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.



Eye/face protection	Goggles.
Skin and body protection	Overalls. Boots.
Hand protection	Impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Color	Colourless
Odor	Faint Characteristic
Odor threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	6-7.5	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	-68°C	None known
Boiling point / boiling range	224-234°C	None known
Flash point	99-114°C	CC (closed cup)
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	24.6% (V)	
Lower flammability or explosive limits	0.9% (V)	
Vapor pressure	0.027 hPa @20°C	None known
Vapor density	5.6 (Air=1)	None known
Relative density	0.95 @20°C	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	210°C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	6.49 mPa.s @20°C	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity May react on prolonged contact with aluminium or light alloys releasing gas and causing subsequent pressure build up.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Contact with aluminium or alloys containing aluminium may result in alcoholate formation with subsequent evolution of hydrogen. Can react briskly with oxidizers - danger of explosion.

Conditions to avoid

Conditions to avoid Heat, flames and sparks.

Incompatible materials

Incompatible materials Acids. Alkalis. Oxidizing agents. Aluminium. Copper. Neoprene. Natural rubber.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure**

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation May cause irritation.

Eye contact Causes serious eye irritation.

Skin contact May cause irritation. Will have a mild degreasing effect on the skin on frequent usage.

Ingestion May cause irritation. May cause central nervous system depression.

Symptoms Irritation.

Numerical measures of toxicity - Product Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-butoxyethoxy)ethanol	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-

2-Butoxyethanol	= 470 mg/kg (Rat)	= 435 mg/kg (Rabbit)	= 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h
-----------------	---------------------	------------------------	---

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	Not a skin sensitizer. (guinea pig).
Germ cell mutagenicity	Not mutagenic in AMES Test.
Carcinogenicity	Refer to 'Chronic effects' section below.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	Not classified.
Chronic effects:	2-Butoxyethanol has been classified by the International Agency for Research on Cancer (IARC) as a Group 3 agent. Group 3 - The agent is not classifiable as to its carcinogenicity to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Keep out of waterways.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2-(2-butoxyethoxy)ethanol	EC50: >100mg/L (96h, <i>Desmodesmus subspicatus</i>)	LC50: =1300mg/L (96h, <i>Lepomis macrochirus</i>)	-	EC50: >100mg/L (48h, <i>Daphnia magna</i>) EC50: =2850mg/L (24h, <i>Daphnia magna</i>)
2-Butoxyethanol	-	LC50: =1490mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =2950mg/L (96h, <i>Lepomis macrochirus</i>)	-	EC50: >1000mg/L (48h, <i>Daphnia magna</i>) EC50: 1698 - 1940mg/L (24h, <i>Daphnia magna</i>)

Persistence and degradability

Persistence and degradability Readily biodegradable.

Bioaccumulative potential

Bioaccumulation Material does not bioaccumulate.

Component Information

Chemical name	Partition coefficient
2-Butoxyethanol	0.81

Mobility

Mobility in soil No information available.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADG

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

IATA

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

IMDG

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Poisons Schedule (SUSMP) 5

National pollutant inventory

Subject to reporting requirement

Chemical name	National pollutant inventory
2-(2-butoxyethoxy)ethanol - 112-34-5	20 MW Threshold category 2b total 60000 MWH Threshold category 2b total 1 tonne/h Threshold category 2a total 25 tonne/yr Threshold category 1a total 400 tonne/yr Threshold category 2a total 2000 tonne/yr Threshold category 2b total

2-Butoxyethanol - 111-76-2	20 MW Threshold category 2b total 60000 MWH Threshold category 2b total 1 tonne/h Threshold category 2a total 25 tonne/yr Threshold category 1a total 400 tonne/yr Threshold category 2a total 2000 tonne/yr Threshold category 2b total
----------------------------	---

International Inventories**AIIC**

This material is listed on the Australian Inventory of Industrial Chemicals.

NZIoC

This material is listed on the New Zealand Inventory of Chemicals.

Legend:**- Australian Inventory of Industrial Chemicals****International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**16. OTHER INFORMATION**

Supplier Safety Data Sheet 04/ 2021

Reason(s) For Issue: 5 Yearly Revised Primary SDS**Issuing Date:** 17-Sep-2021

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australian Industrial Chemicals Introduction Scheme (AICIS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)

Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet