

SECTION 1: Identification

1.1 Identification

Product form	:	Substance
Substance name	:	NaturoBG [®] (1,3 Butylene Glycol)
CAS No	:	107-88-0
EC/ List No	:	203-529-7
Formula	:	C ₄ H ₁₀ O ₂
Molecular weight	:	90.12 g/mol
Synonyms	:	1,3-Dihydroxybutane, beta-Butylene glycol Butane-1,3-diol, Methyl trimethylene glycol

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture	:	Pest control products, polymer productions, polishes, laboratory reagent, Manufacture of cosmetics & personal care products, Synthesis of wax derivatives, Paper and board dye, finishing and impregnation products, washing and cleaning products, perfumes, fragrances, pharmaceuticals, Processing aid, Solvent, Pharmaceutical
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1.3 Details of the supplier of the safety data sheet

Godavari Biorefineries Ltd.
45/47, Somaiya bhavan,
Mahatma Gandhi Road,
Fort, Mumbai -400001, INDIA.
T 0091 22 22048272
Email: alka@somaiya.com
www.somaiya.com

1.4 Emergency telephone Number

Emergency number	:	0091 2423 279308 0091 22 22048272 (Monday – Friday - 09.30 hrs to 18.00 hrs)
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SECTION 2: Hazard(s) identification

GHS classification

2.1 Classification of the substance or mixture

This substance is not hazardous in accordance with paragraph (d) of §1910.1200 (GHS-US classification).	:	---
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2.2 GHS labeling

Hazard pictograms	:	Not a hazardous substance
Signal word	:	None
Hazard statements	:	Not a hazardous substance
Precautionary statements	:	P264 -Wash skin thoroughly after handling P280 – wear eye protection/ face protection P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention

2.3 Other hazards

Other hazards not contributing to the classification	:	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.
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2.4 Unknown acute toxicity (GHS US)

Not applicable.

SECTION 3: Composition/Information on ingredients

3.1 Substance

Substance type : Mono-constituent

Name	Product identifier CAS No EC No	Concentration %	GHS classification
NaturoBG [®] (1,3 Butylene Glycol) (Main constituent)	107-88-0 203-529-7	Minimum 99.5	Not a hazardous substance

Full text of hazard classes and H-statements: see section 16

3.2 Mixture

None

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	:	Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital
Inhalation	:	Remove the victim into fresh air. Immediately consult a doctor/medical service.
Skin contact	:	Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Consult a doctor/medical service.
Eye contact	:	Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.
Ingestion	:	Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Immediately consult a doctor/medical service.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	:	Cough
Symptoms/injuries after skin contact	:	None reported
Symptoms/injuries after eye contact	:	Mild Irritation
Symptoms/injuries after ingestion	:	Cough
Chronic symptoms	:	None reported

4.3 Indication of any immediate medical attention and special treatment needed

Seek medical assistance. Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Polyvalent foam. Alcohol-resistant foam, BC powder. Carbon dioxide.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

- Fire hazard : Combustion gases of organic materials must in principle be graded as inhalation poisons. Vapours are heavier than air and may spread along floors. Development of hazardous combustion gases or vapours possible in the event of fire
- Explosion hazard : Forms explosive mixtures with air on intense heating.
- Reactivity : Under conditions giving incomplete combustion, hazardous gases produced may consist of CO and CO₂.

5.3 Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety location. Do not move the load if exposed to heat. Use water moderately and if possible, collect or contain it.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

- Protective equipment : Full firefighting turnout gear. Self-contained breathing equipment.
- Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop nearby engines and no smoking. No naked flames or sparks. Use Spark- and explosion-proof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2 For Emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2 Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers, water bodies.

6.3 Methods and material for containment and cleaning up

- For containment : Contain released substance, transfer (pump) into suitable containers. Use compatible material of containers. Do not use compressed air for pumping over spills.
- Methods for cleaning up : Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/ authorized disposal facility. Wash clothing and equipment after handling.

6.4 Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Provide sufficient air exchange and or exhaust in work rooms. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Keep container tightly closed.
Work under local exhaust/ventilation.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

- Incompatible products : Oxidizing agent, Acid chlorides, Acid anhydrides, Chloroformates, Reducing agents
- Incompatible materials : Direct sunlight. Heat sources. Sources of ignition.
- Storage temperature : 15 -32 °C hygroscopic
Storage class (TRGS 510): Combustible liquids
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents.
- Storage area : Store in a dry area. Ventilation at floor level. Keep out of direct sunlight. Fireproof storeroom. Keep locked up. Meet the legal requirements. Avoid moisture
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packaging in solid containers.
- Packaging materials : SUITABLE MATERIAL: Aluminium. glass.

7.3 Specific end uses

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits:

Exposure limits not established in US.

8.2 Exposure controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Material should be handled in a laboratory hood/chemical dispensing area whenever possible.

Personal protective equipment



Protective goggles. Gloves. Protective clothing. Face shield. Gas mask with filter.

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Materials for protective clothing	:	GIVE EXCELLENT RESISTANCE: Nitrile rubber. Polyvinylchloride
Eye protection	:	Safety glasses.
Skin and body protection	:	Head/neck protection. Corrosion-proof clothing.
Respiratory protection	:	Wear gas mask with filter. High vapour/ gas concentration: self-contained respirator. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system
Thermal hazard protection	:	None necessary.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid
Colour	:	Colourless
Odour	:	Odourless
pH	:	6-7 (20 °C)
Melting point	:	-57 °C
Freezing point	:	No Data Available
Initial boiling point/boiling range	:	209 °C
Flash Point	:	115 °C (Closed cup)
Relative density	:	1.004 – 1.006 g/cm ³ (20 °C) (Method: DIN 51757)
Relative vapour density at 20°C	:	(air = 1): 3.2
Specific gravity/ density	:	No Data Available
Molecular mass	:	90.12 g/mol
Flammability(Solid, Gas)	:	No Data Available
Upper/lower flammability or Explosive limit	:	1.9 – 12.6 vol %
Solubility	:	Miscible in water (OECD 105)
Vapor pressure	:	<1 hPa (20 °C)
Vapour density	:	No Data Available
Evaporation Rate	:	No Data Available
Partition coefficient n-octanol/water	:	-0.9 (Experimental value; 20 °C, OECD-117)
Auto-ignition temperature	:	410 °C @ 1019 hPa (Method: DIN 51794)
Decomposition temperature	:	No Data Available
Viscosity	:	131.8 mPa (20°C)
Oxidizing properties	:	No Data Available

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	Forms explosive mixture with air on intense heating. Upon combustion: CO and CO ₂ are formed. Violent to explosive reaction with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) Acid chlorides, Acid anhydrides, Chloroformates, Reducing agents
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- 10.2 Chemical Stability** : Stable under recommended storage conditions
- 10.3 Possibility of hazardous reactions** : Reacts violently with (some) bases: release of heat.
- 10.4 Conditions to avoid** : Extremely high temperatures. Incompatible materials and moisture
- 10.5 Incompatible materials** : May react with Strong oxidizing agents, Acid chlorides, Acid anhydrides, Chloroformates, Reducing agents.
- 10.6 Hazardous decomposition products** : Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Likely routes of exposure : Ingestion, Inhalation; Skin and eye contact
- Acute toxicity : Based on available data, the classification criteria are not met.

NaturoBG[®] (1,3 Butylene Glycol) (107-88-0)

LD50 oral toxicity	22800 mg/kg body weight (Rat)
LD50 dermal toxicity	> 20000 mg/kg body weight (Rabbit)
LC50 inhalation toxicity	290 mg/m ³ body weight (Rat); Exposure time: 8h
Repeated Dose Toxicity	Species: Rat; Method: Oral; Dose: NOAEL: 5000mg/kg/d; exposure: 2 years

- Skin irritation : Non-irritant (Rabbit)
- Serious eye damage/irritation : Mild irritant
- Respiratory or skin sensitization : Not classified
- Germ cell mutagenicity : Not classified
- Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
- Reproductive toxicity : Not classified
- Specific target organ toxicity (single exposure) : Not classified
- Specific target organ toxicity (repeated exposure) : Not classified
- Aspiration hazard : Not classified

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

- Ecology – general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
- Ecology – air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5/II.
- Ecology – water : Slightly harmful to fishes and invertebrates (Daphnia). Not harmful to algae

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NaturoBG [®] (1,3 Butylene Glycol) (107-88-0)					
	Toxicity to Fish	Toxicity to aquatic invertebrates		Toxicity to Microorganisms	Reproductive Toxicity
Species	Oryziaslatipes	Desmodesmus subspicatus	Daphnia magna (Water flea)	Activated sludge (bacteriae)	Daphnia magna (Water flea)
Value	LC 50: >100 mg/l	ErC50>1070 mg/l	EC 50: >1000mg/l	EC 50: >100mg/l	EC50: > 85 mg/l
Exposure time	96 h	72 h	48h	3h	21 d
Test method: OECD	203	201	202	209	211

12.2 Persistence and degradability

NaturoBG[®] (1,3 Butylene Glycol) (107-88-0)

Persistence and degradability : Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil. 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

12.3 Bioaccumulative potential

NaturoBG[®] (1,3 Butylene Glycol) (107-88-0)

Log Pow	:	-0.9 (Experimental value; 25 °C) OECD 117
Bioaccumulative potential	:	Low potential for bioaccumulation (Log Kow < 0.29).

12.4 Mobility in soil

NaturoBG[®] (1,3 Butylene Glycol) (107-88-0)

Surface tension	:	72,6 mN/m at 1g/l at 20 °C (OECD Test Guideline 115)
Ecology – soil	:	No adverse impacts.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations : Remove and dispose waste in accordance with local and/or national regulations. Recommended practice of physico-chemical/biological treatment and authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment.

SECTION 14 : Transport Information

Marine transport (IMDG)

UN/ID No.	:	Not restricted
Proper shipping name	:	Butane-1,3-diol
Hazard Class	:	-
Subsidiary Risk	:	-
Packing group	:	-
Marine pollutant	:	-
Hazard Labels	:	-
EMS Code	:	-

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Air transport ICAO/IATA

UN number : Not restricted
 Proper shipping name : Butane-1,3-diol
 Hazard Class : -
 Subsidiary Risk : -
 Packing group : -
 Hazard Labels : -

Department of Transportation (DOT)

UN number : Not applicable.
 Proper shipping name and description : -
 Class : Not Dangerous goods
 Packaging group : -
 Reportable Quantity (RQ) : - lbs
 Poison Inhalation Hazard : No
 Hazard labels : -

SECTION 15: Regulatory information

15.1 National regulations

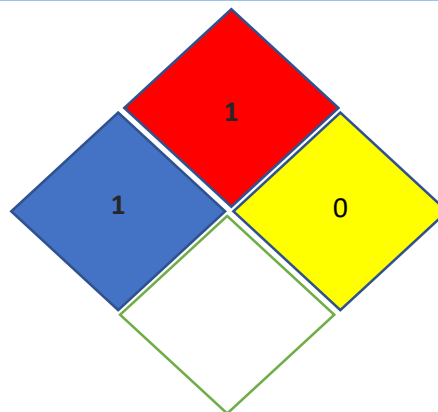
Country	National Inventories	Listing
CANADA	DSL	Listed
CHINA	IECSC	Listed
JAPAN	ENCS	Listed
PHILIPPINES	PICCS	Listed
SOUTH KOREA	KECI	Listed
USA	TSCA	Listed

SECTION 16: Other information

16.1 Hazard Statement

: Not a hazardous substance.

16.2 NFPA Rating



16.3 Abbreviations and acronyms

:	PBT =Persistent Bioaccumulative and Toxic
	vPvB= Very Persistent and Very Bioaccumulative
	SCBA= Self Contained Breathing Apparatus
	NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit
	OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit
	OELTWA= Occupational Exposure Limit Time Weighted Averages
	IDLH= Immediately Dangerous to Life or Health
	UEL= Upper Explosive Limit
	LEL= Lower Explosive Limit
	RTECS= Registry of Toxic Effects of Chemical Substances
	NTP=National Toxicology Programm
	IARC= International Agency for Research on Cancer
	EPA=Environmental Protection Agency
	TSCA= Toxic Substances Control Act
	NFPA= National Fire Protection Association
	CSR=Chemical Safety Report
	BCF = Bio Concentration Factor
	DNEL = Derived No Effect Level
	PNEC = Predicted No Effect Concentration
	TLV = Threshold Limit Value
	ACGIH = American Conference of Governmental Industrial Hygienist
	REACH = Registration, Evaluation .Authorisation and Restriction of Chemicals
	CLP = Classification, Labelling and Packaging
	LD / LC = Lethal Doses / Lethal Concentration
	GHS = Globally Harmonised System
	ADR = Accord europeen relative au transport international de marchandises
	IMDG-Code = International Maritime Code for Dangerous Goods
	EmS = Emergency measures on Sea
	ICAO = International Civil Aviation Organization
	IATA/DGR= International Air Transport Association/Dangerous Goods Regulation

16.4 Further information:

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