



**INDENTA™**  
**Chemicals (India) Pvt. Ltd.**  
**(ISO 9001:2008 Certified Company)**



117, The Summit Business Bay, Near WEH Metro Station, Opp. Cinemax Theatre, Off Sir M. V. Road, Andheri (E), Mumbai 400 093. India  
☎ : +91-22-2684 9600 (10 lines) • 📠 : +91-22-2684 9060 • ✉ : indenta@indenta.com • 🌐 : www.indenta.com

## Material Safety Data Sheet 1,2-Butanediol

### SECTION 1.1 – PRODUCT IDENTIFICATION

**Product name** : 1,2-Butanediol  
**Cas no** : 584-03-2  
**Molecular formula** : C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>  
**Molecular weight** : 90.121 g/mol

### SECTION: 1.2 – COMPANY IDENTIFICATION

**Company Name:** Indenta Chemicals (India) Pvt. Ltd.

**Address:** 117, The Summit Business Bay, Opp Cinemax, Off. Sir M.V. Road, Near WEH Metro Station, Andheri (E), Mumbai 400 093, India

**Telephone #:** +91-22-26849600

**Fax #:** +91-22-26849060

### SECTION 2: HAZARD IDENTIFICATION

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Flammable liquids** Category 4

#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statement**

Combustible liquid

##### **Precautionary Statements**

##### **Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking Wear protective gloves/protective clothing/eye protection/face protection

##### **Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage** Store in a well-ventilated place. Keep cool

**Disposal** Dispose of contents/container to an approved waste disposal plant

##### **Hazards not otherwise classified (HNOC)**

None identified

**SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS****Composition:**

Name	CAS #	% by Weight
1,2-Butanediol	584-03-2	98

**SECTION 4: FIRST AID MEASURES**

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Remove from exposure, lie down. Move to fresh air.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If possible drink milk afterwards.
<b>Most important symptoms/effects</b>	Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

**SECTION 5: FIRE FIGHTING MEASURES**

<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. alcohol-resistant foam.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	93 °C / 199.4 °F
<b>Method</b>	No information available
<b>Autoignition Temperature</b>	390 °C / 734 °F
<b>Explosion Limits</b>	
<b>Upper</b>	13.50%
<b>Lower</b>	2.40%
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Thermal decomposition can lead to release of irritating gases and vapors Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

Health	Flammability	Instability	Physical hazards
0	2	0	N/A

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment.
<b>Environmental Precautions</b>	See Section 12 for additional ecological information.
<b>Methods for Containment and Clean Up</b>	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal.

**SECTION 7: HANDLING AND STORAGE**

<b>Handling</b>	Avoid contact with skin and eyes. Avoid contact with clothing. Remove and wash contaminated clothing before re-use. Avoid breathing vapors or mists. Do not ingest. Wash thoroughly after handling.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

**SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION**

<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ventilation systems.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Test	Specifications
Physical state	Liquid
Appearance	Colorless
Odor	Odorless
Melting Point/Range	-50 °C / -58 °F
Boiling Point/Range	194 °C / 381.2 °F @ 760 mmHg
Flammability or explosive limits	
Upper	13.50%
Lower	2.40%
Vapor Pressure	0.1 mbar @ 20 °C
Vapor Density	3.1
Relative Density	1.000
Autoignition Temperature	390 °C / 734 °F
Molecular Formula	C4 H10 O2
Molecular Weight	90.12

**SECTION 10: STABILITY AND REACTIVITY**

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products.
<b>Incompatible Materials</b>	Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	No information available.
<b>Hazardous Reactions</b>	None under normal processing.

**Section 11: Toxicological Information****Acute Toxicity**

**Product Information** No acute toxicity information is available for this product

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,2-Butanediol	16 g/kg ( Rat )	Not listed	Not listed

**Toxicologically Synergistic Products** No information available

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

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
1,2-Butanedio	584-03-2	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed**

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information**

No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity**

Do not empty into drains.

<b>Persistence and Degradability</b>	No information available
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	No information available.

**Section 13: Disposal Considerations**

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**Section 14: TRANSPORT INFORMATION**

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated

**15: OTHER REGULATORY INFORMATION****International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
<b>1,2-Butanediol</b>	X	-	X	209-527-2	-	X	X	X	X	X	X

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

SARA 313 Not applicable

**SARA 311/312 Hazardous Categorization****Acute Health Hazard** No**Chronic Health Hazard** No**Fire Hazard** Yes**Sudden Release of Pressure Hazard**

	No
<b>Reactive Hazard</b>	No
<b>Clean Water Act</b>	Not applicable
<b>Clean Air Act</b>	Not applicable
<b>OSHA Occupational Safety and Health Administration</b>	
Not applicable	
<b>CERCLA</b>	
Not applicable	
<b>California Proposition 65</b>	This product does not contain any Proposition 65 chemicals
<b>State Right-to-Know</b>	Not applicable

## **SECTION 16: ADDITIONAL INFORMATION**

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This information is provided for documentation purposes only.

The information contained in this Certificate of Analysis and Material Safety Data Sheet is obtained from current and reliable sources. The information contained herein is true and to the best of Indenta Chemicals (India) Pvt. Ltd. knowledge. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any Laws or Regulation. Final determination of the suitability of the material is the sole responsibility of the user. Customers should purchase products from Indenta Chemicals (India) Pvt. Ltd. with the clear understanding that all products must be used at the customers own discretion and only after referencing Material Safety Data Sheets (MSDS) and all other relevant technical information specific to the product. Indenta Chemicals (India) Pvt. Ltd. shall not be held responsible for any damages to property or for any adverse physical effects (including injury or bodily harm) caused by insufficient knowledge or the improper use of a product. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of the products, including intellectual property rights of third parties. As with any manufacturing process, Indenta Chemicals (India) Pvt. Ltd. strongly recommends small lab scale testing for evaluation purposes prior to full commercial manufacturing. The information on the Indenta Chemicals (India) Pvt. Ltd. website is obtained from current and reliable sources but makes no representation as to its comprehensiveness or accuracy. Nothing contained herein should be considered as a recommendation by Indenta Chemicals (India) Pvt. Ltd. as to the fitness for any use. As the ordinary or otherwise use(s) of this product is outside the control of Indenta Chemicals (India) Pvt. Ltd., no representation or warranty, expressed or implied is made as to the effect(s) of such use(s) (including damage or injury), or the results obtained. The liability of Indenta Chemicals (India) Pvt. Ltd. is limited to the value of the goods and does not include any consequential loss. Indenta Chemicals (India) Pvt. Ltd. shall not be liable for any errors or delays in the content, or for any actions taken in reliance thereon.