Tradeasia International PTE LTD
133 Cecil Street # 12-03 Keck Seng Tower, Singapore 069535
Tel: +65-6227 6365 Fax: +65-6225 6286
www.chemtradeasia.com

Material Safety Data Sheet
Erythritol

Section 1 - Product Identification

Synonym	: 1,2,3,4-Butanetetrol
Chemical Formula	: $C_4H_{10}O_4$
Company Identification	: Tradeasia International Pte. Limited
Address	: 133 Cecil Street # 12-03 Keck Seng Tower, Singapore Tel: +65-6227 6365 Fax: +65-6225 6286 Email: contact@chemtradeasia.com
Recommended use	: As a food additive and a sugar substitute

Section 2 – Hazards Identification

2.1. Classification
Not a hazardous substance or mixture.

2.2. Label elements
N.A.

2.3. Signal Word
N.A.

2.4. Hazard Statements
N.A.

2.5. Precautionary Statements Storage
Inhalation: Dust may cause irritation of mucous membrane and respiratory tract.
Eye Contact: May cause irritation

2.6. Other hazards
N.A.

Section 3 – Composition/Information on Ingredients

3.1 Composition comments
Common Name Erythritol
Synonym(s) 1,2,3,4-Butanetetrol
Formula C4H10O4
CAS Number 149-32-6

Chemical Name	EC No/CAS No	Purity, %
Erythritol	149-32-6	max. 99.9

Section 4 – First-Aid Measures

4.1. Description of first aid measures

General Advice
No hazards which require special first aid measures. If you feel unwell, seek medical advice.
Eye Contact
Flush eyes with water as a precaution. If eye irritation persists, consult a specialist.
Skin Contact
Wash off with soap and plenty of water. If skin irritation persists, call a physician.
Inhalation
Move to fresh air. If symptoms persist, call a physician.
Ingestion
Drink water as a precaution. Consult a physician if necessary

4.2. Most important symptoms and effects, both acute and delayed

N.A.

4.3. Indication of any immediate medical attention and special treatment needed

No hazards which require special first aid measures.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Water, water spray, dry powder, foam, and carbon dioxide (CO2).

5.2. Unsuitable Extinguishing media

N.A.

5.3. Specific hazards arising from the chemical

Carbon Oxides.

5.4. Special protective actions for fire-fighters

Use personal protective equipment including self-contained breathing apparatus when fighting fire in enclosed area.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

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

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls
Use adequate ventilation to keep airborne concentrations low.

8.2. Individual protection measures, such as personal protective equipment (PPE)
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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Body Protection
Complete suit protecting against chemicals, 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 fullface particle respirator type N100 (US) or type P3 (EN 143) 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
Do not let product enter drains.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Form: Powder/crystalline
Color: White/colorless
Odor: None
pH (10%, 25°C): 4 - 7
Boiling Point/Range: 329 - 331°C
Decomposition Temperature: No data available
Explosive Properties, Risk of Explosion: Class St 1
Relative Density: 1450 kg/m3
Bulk Density: 700 - 900 kg/m3
Water Solubility (25°C): Approx. 60 g/100 mL H2O
log Pow: No data available
Melting Point/Range: 119 - 123°C

Solubility in Other Solvents Ethanol (25°C): Slightly soluble

Section 10 – Stability and Reactivity

10.1. Reactivity
N.A

10.2. Chemical stability
Stable at normal conditions.

10.3. Possibility of hazardous reactions
N.A.

10.4. Conditions to avoid:
Keep containers dry and tightly closed to avoid moisture absorption and contamination.

10.5. Incompatible materials
Strong oxidizers.

10.6. Hazardous decomposition products
No decomposition if stored normally. Thermal decomposition can lead to release of irritating gases and vapors.

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients
Acute Toxicity: LD50/ipr/mouse 2000 mg/kg
Local Effects: May cause eye irritation with susceptible persons. May cause skin irritation in susceptible persons. May cause irritation of respiratory tract.
Chronic Toxicity: Prolonged skin contact may cause skin irritation.
Human Experience: Health injuries are not known or expected under normal use
Specific Effects: Carcinogenicity: not listed in IARC/NTP/OSHA/ACGIH.
Mutagenicity: not mutagenic in AMES Test.
Reproductive toxicity: animal testing did not show any effects on fertility. Animal testing did not show any effects on foetal development.

Section 12 – Ecological Information

12.1.Ecotoxicity
N.A.

12.2. Bioaccumulative potential
N.A.

12.3. Mobility in soil
N.A.

12.4. Persistence and Degradability
Expected to be biodegradable

12.4. Other adverse effects
N.A.

Section 13 – Disposal Considerations

13.1. Disposal methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

Section 14 – Transport Information

14.1 Transport Regulation
D.O.T. 49 CFR 172.101: Not regulated
TDG: Not regulated
UN Proper Shipping Name/Number: Not regulated
IMDG: Not regulated
IATA: Not regulated

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations
Generally regarded as safe (GRAS) by USA FDA. GRAS status from1996. GRAS Notified by FDA in 2001.
To the best of our knowledge, Erythritol does not contain any contaminants or bi-products known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.
CERCLA (Comprehensive Response Compensation, and Liability Act):
SARA Title Ill (Superfund Amendments and Reauthorization Bill): Not Considered Hazardous
HMIS Rating Health: 1 Fire: 1 Reactivity: 1

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value

Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS
Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: get medical advice/attention.
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.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.3. References
1. Litovitz T L, Norman S A, Veltri J C, Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. (1986), 4, 427-458
2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.
For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability
The information in this MSDS was obtained from sources which we believe are reliable. However, the

information is provided without any warranty, express or implied, regarding its accuracy, reliability or completeness. The conditions or methods of handling, storage use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.
This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.