

Material Safety Data Sheet

BIOTIN

Section 1 - Product Identification

Synonyms : Biotin

Company Identification : Tradeasia International Pte. Limited

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Recommended use of the chemical and restrictions on use

The product is used in industrial manufacturing, in particular in :

- Animal Feed

Section 2 – Composition/Information on Ingredients

The product contains greater than 98.0 percent (%) Biotin

| Chemical Name | CAS No | Purity, % |
|---------------|---------|-----------|
| Biotin | 58-85-5 | min. 98.0 |

Section 3 – Hazards Identification

3.1 Classification of the substance according to GHS

Not a hazardous substance according to GHS.

Cautionary Statement

Read label before use

3.3. Other hazards which do not result in classification

Biotin is a white powdered substance that is not known to be flammable, combustible, or explosive.

Potential health effects

Inhalation and ingestion are the most significant route of exposure in occupational and other settings.

Inhalation

Occasional mild irritation effects to nose and throat may occur from inhalation.

Eye contact

Biotin can be an eye irritant.

Skin contact

Biotin might cause slight irritation.

Ingestion

Biotin has low acute toxicity. Might cause allergic reaction.

Potential ecological effects

Biotin has minimal effect on the ecology.

Signs and symptoms of exposure

There is no signs and symptoms associated with exposure to biotin.

Section 4 – First-Aid Measures

4.1. Description of first aid measures

Skin contact

Wash with soap and plenty of water. Consult physician if irritation is experienced.

Eye contact

Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 15 minutes, seek medical attention.

Inhalation

If symptoms such as nose or throat irritation are observed, remove to fresh air. Consult physician if breathing difficulties are experienced.

Ingestion

If large amounts are ingested in a short time, contact a doctor immediately. Rinse mouth immediately. Do not induce vomiting.

Note to physicians

N.A.

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

N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Water Spray, Alcohol-Resistant Foam, Dry Chemical or Carbon Dioxide Extinguisher

5.2. Specific hazards arising from the chemical

Thermal decomposition could lead to release of irritating gases and vapours.

5.3. Special protective actions for fire-fighters

N.A.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation. Avoid handling near sources of ignition.

6.2. Environmental precautions

N.A.

6.3. Methods and material for containment and cleaning up

Land spill

Vacuum, shovel or sweep up and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is required.

Spillage into water

Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns to its normal environmental background level.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling

Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Your supplier can advise you on safe handling, please contact the supplier.

The product should be kept away from strong reducing/oxidising agents. Apply above handling advice when mixing with other substances.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry and cool place. Provide appropriate ventilation and store bags such as to prevent any accidental damage. Avoid ignition sources in areas where dust may be generated.

Section 8 – Exposure Controls/Personal Protection

8.1. Control parameters

Occupational exposure limits for dust (total and respirable). are treated by OSHA, Cal OSHA and ACGIH as “Particulate Not Otherwise Classified” or “Nuisance Dust”

ACGIH/TLV 10 mg/m³

Cal OSHA/PEL 10 mg/m³

OSHA/PEL (total dust) 15 mg/m³

OSHA/PEL (respirable dust) 5 mg/m³

8.2. Appropriate engineering controls

Maintain air concentrations below occupational exposure standards.

Use local exhaust ventilation to keep airborne concentrations of dust below permissible exposure levels.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Respiratory protection

In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation.

Eyes and hands protection

Goggles and gloves should be worn according to national legislation.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance : white powder

Odour : Odourless

Odour threshold : N.A.

pH @ 20° C : 4.5

Melting point : 232 - 233°C

Boiling point : N.A

Flash point : Non flammable

Evaporation rate : N.A.

Flammability : N.A.

Upper/lower flammability or explosive limits : Non explosive

Vapour pressure : Negligible @ 20° C

Vapour density : N.A.

Bulk density: N.A.

Solubility in water : insoluble

Partition coefficient: n-octanol/water : N.A

Auto-ignition temperature : N.A.

Decomposition temperature : N.A

Viscosity : N.A.

Section 10 – Stability and Reactivity

10.1. Reactivity

Biotin is a stable product.

10.2. Chemical stability

Biotin is a stable product under normal conditions.

10.3. Possibility of hazardous reactions

N.A

10.4. Conditions to avoid:

Avoid dust formation and ignition sources as dust clouds may be explosive under certain conditions.

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Carbon Monoxide, Carbon Dioxide, Nitrogen Oxide, Sulfur Oxide

Section 11 – Toxicological Information

11.1. Information on toxicological effect

11.1.1. Substances

Acute toxicity

Low acute oral toxicity.

Skin corrosion / irritation

Mild irritant.

Serious eye damage/ irritation

Biotin can be an eye irritant.

Respiratory or skin sensitization

Biotin can cause slight irritation.

Germcell mutagenicity

Biotin is not mutagenic.

Carcinogenicity

Biotin is not carcinogenic.

Reproductive toxicity

Biotin does not have reproductive toxicity.

STOT-single exposure

N.A.

STOT-repeated exposure

N.A.

Aspiration Hazard

Biotin has no aspiration hazard.

Section 12 – Ecological Information

12.1. Toxicity

N.A.

Phytotoxicity

No known phytotoxicity.

Algal toxicity

No known algal toxicity.

Invertebrate toxicity

No known invertebrate toxicity.

Fish toxicity

No known fish toxicity.

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

Not significantly bioaccumulative.

12.4. Mobility in soil

No Data Available

12.5. Other adverse effects

No Data Available

Section 13 – Disposal Considerations

13.1. Disposal methods

No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

Section 14 – Transport Information

Biotin has no UN Number, and is not regulated under international rail, road, water or air transport regulations.

14.1. UN number : N.A.

14.2. UN proper shipping name : N.A

14.3. Transport of hazard classes : N.A

14.4. Packing group : N.A

14.5. Environmental hazards : N.A.

14.6. Special precautions for user : N.A

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations

It should be noted that biotin is safe under conditions of normal handling and use.

Clean Air Act (Montreal Protocol)

Biotin does not contain any Class I or Class II ozone depleting substances.

Chemical inventory listing

EINECS 200-399-3

Ensure all national/local regulations are observed.

Section 16 : Additional Information

16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):

- This MSDS complies with ISO 11014; the requirements of UN-GHS

| Revision No | Revision content |
|-------------|---|
| 01 | <ul style="list-style-type: none">• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets.• This SDS is updated in line with Eti Maden Corporate identity. |

16.2. 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

GHS : Globally Harmonised System of Classification and Labelling

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

EC₅₀ : 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 authority of the Environmental Protection Agency

Canadian DSL: Canadian Domestic Substances List

16.3. Disclaimer of Liability

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