

# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

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## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Dimethyl fumarate

### 1.2 Other means of identification

**Product number** -  
**Other names** Dimethyl fumarate; 2-Butenedioic acid (E)-, dimethyl ester;  
Dimethyl Fumarate

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** Industrial and scientific research use.  
**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Shanghai Baishun Biotechnology Co., Ltd  
**Address** No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian  
District, Shanghai, 201400, China  
**Telephone** +86-21-37581181

### 1.5 Emergency phone number

**Emergency phone number** +86-21-37581181  
**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

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## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Dermal

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Warning  
**Hazard statement(s)** H312 Harmful in contact with skin  
**Precautionary statement(s)**  
**Prevention** P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

|                 |   |
|-----------------|---|
| <b>Response</b> | P302+P352 IF ON SKIN: Wash with plenty of water/...<br>P317 Get medical help.<br>P321 Specific treatment (see ... on this label).<br>P362+P364 Take off contaminated clothing and wash it before reuse. |
| <b>Storage</b>  | none  |
| <b>Disposal</b> | P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.               |

### 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name     | Common names and synonyms | CAS number | EC number | Concentration |
|-------------------|---------------------------|------------|-----------|---------------|
| Dimethyl fumarate | Dimethyl fumarate         | 624-49-7   | 210-849-0 | 100%          |

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Seek medical attention if you feel unwell.

#### Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention if skin irritation occurs.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth.

### 4.2 Most important symptoms/effects, acute and delayed

no data available

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Poisons A and B

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Specific hazards arising from the chemical

Combustible. Finely dispersed particles form explosive mixtures in air.

### 5.3 Special protective actions for fire-fighters

Use water spray, foam, powder, alcohol-resistant foam. In case of fire: keep drums, etc., cool by spraying with water.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. If appropriate, moisten first to prevent dusting. Sweep spilled substance into sealable containers. Then store and dispose of according to local regulations. Wash away remainder with plenty of water.

### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. If appropriate, moisten first to prevent dusting. Sweep spilled substance into sealable containers. Then store and dispose of according to local regulations. Wash away remainder with plenty of water.

### 6.3 Methods and materials for containment and cleaning up

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. If appropriate, moisten first to prevent dusting. Sweep spilled substance into sealable containers. Then store and dispose of according to local regulations. Wash away remainder with plenty of water.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. Prevent build-up of electrostatic charges (e.g., by grounding). Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep in a well-ventilated room. Well closed. Keep in the dark. Separated from strong oxidants. Store at 15 deg C to 30 deg C (59 to 86 deg F). Protect the capsules from light. Store in original container.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

#### Eye/face protection

Wear safety goggles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Avoid inhalation of dust.

**Thermal hazards**

no data available

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## **SECTION 9: Physical and chemical properties and safety characteristics**

|   |                               |
|---|-------------------------------|
| <b>Physical state</b>   | WHITE CRYSTALLINE POWDER.     |
| <b>Colour</b>   | White to off-white powder     |
| <b>Odour</b>  | no data available             |
| <b>Melting point/freezing point</b>                             | 33°C(lit.)                    |
| <b>Boiling point or initial boiling point and boiling range</b> | 205°C(lit.)                   |
| <b>Flammability</b>   | Combustible.                  |
| <b>Lower and upper explosion limit/flammability limit</b>       | no data available             |
| <b>Flash point</b>  | 113°C(lit.)                   |
| <b>Auto-ignition temperature</b>                                | no data available             |
| <b>Decomposition temperature</b>                                | no data available             |
| <b>pH</b>   | no data available             |
| <b>Kinematic viscosity</b>                                      | no data available             |
| <b>Solubility</b>   | Highly soluble in water.      |
| <b>Partition coefficient n-octanol/water</b>                    | log Kow = 0.74                |
| <b>Vapour pressure</b>  | 0.114 mm Hg at 25 deg C (est) |
| <b>Density and/or relative density</b>                          | 1.124 g/cm <sup>3</sup>       |
| <b>Relative vapour density (air = 1):</b>                       | 5                             |
| <b>Particle characteristics</b>                                 | no data available             |

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## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

Reacts with strong oxidants. This generates fire and explosion hazard. The substance can form explosive peroxides on prolonged contact with air and light.

### **10.2 Chemical stability**

Stable under recommended storage conditions.

### **10.3 Possibility of hazardous reactions**

Combustible. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

### **10.4 Conditions to avoid**

no data available

### **10.5 Incompatible materials**

Reacts with strong oxidants. This generates fire and explosion hazard. The substance can form explosive peroxides on prolonged contact with air and light.

### **10.6 Hazardous decomposition products**

When heated to decomposition it emits acrid smoke and irritating fumes.

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## **SECTION 11: Toxicological information**

**Acute toxicity**

- Oral: LD50 Rat oral 2240 mg/kg
- Inhalation: no data available
- Dermal: no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

The substance is irritating to the skin and respiratory tract. The substance is severely irritating to the eyes.

**STOT-repeated exposure**

Repeated or prolonged contact with skin may cause dermatitis.

**Aspiration hazard**

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

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**SECTION 12: Ecological information****12.1 Toxicity**

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

**12.2 Persistence and degradability**

no data available

**12.3 Bioaccumulative potential**

An estimated BCF of 3 was calculated in fish for dimethyl fumarate(SRC), using a log Kow of 0.74(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

**12.4 Mobility in soil**

The Koc of dimethyl furmarate is estimated as 16(SRC), using a log Kow of 0.74(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that dimethyl furmarate is expected to have very high mobility in soil.

**12.5 Other adverse effects**

no data available

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## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### 14.1 UN Number

ADR/RID: UN3265 (For reference only, please check.)

IMDG: UN3265 (For reference only, please check.)

IATA: UN3265 (For reference only, please check.)

### 14.2 UN Proper Shipping Name

ADR/RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (For reference only, please check.)

IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (For reference only, please check.)

IATA: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (For reference only, please check.)

### 14.3 Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name  | Common names and synonyms | CAS number | EC number   |
|--|---------------------------|------------|-------------|
| Dimethyl fumarate  | Dimethyl fumarate         | 624-49-7   | 210-849-0   |
| European Inventory of Existing Commercial Chemical Substances (EINECS) |                           |            | Listed.     |
| EC Inventory   |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory            |                           |            | Listed.     |
| China Catalog of Hazardous chemicals 2015                              |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                             |                           |            | Listed.     |
| Philippines Inventory of Chemicals and Chemical Substances             |                           |            | Listed.     |

|  |         |
|--|---------|
| (PICCS)  |         |
| Vietnam National Chemical Inventory                                      | Listed. |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | Listed. |
| Korea Existing Chemicals List (KECL)                                     | Listed. |

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## SECTION 16: Other information

### Information on revision

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

Products containing more than 0.1% Dimethylfumarate are banned from the market in EU countries.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*