

# MSDS

Version: 1.0

CreationDate: Dec. 6, 2018

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## 1. Identification

### 1.1 Product name

Tween-60

### 1.2 Other means of identification

<b>Product number</b>	F202303
<b>Other names</b>	polysorbate 60

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

<b>Identified uses</b>	Used for research and development only.
<b>Uses advised against</b>	no data available

### 1.4 Distributor's details

<b>Company</b>	Ecocell Co., Ltd.
<b>Address</b>	F226, 45, Jojeong-daero, Hanam-si, Gyeonggi-do, Korea
<b>Telephone</b>	+82-2-457-2236
<b>Fax</b>	+82-2-6442-2236

### 1.5 Emergency phone number

<b>Emergency phone number</b>	+82-2-457-2236
<b>Service hours</b>	Monday to Friday, 9am-6pm (Standard time zone: UTC/GMT +9 hours).

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## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Not classified.

### 2.2 GHS label elements, including precautionary statements

<b>Pictogram(s)</b>	No symbol.
<b>Signal word</b>	No signal word
<b>Hazard statement(s)</b>	none
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	none

**Response** none  
**Storage** none  
**Disposal** none

## 2.3 Other hazards which do not result in classification

no data available

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## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Sorbitan monostearate, ethoxylated	Tween-60	9005-67-8	500-020-4	-

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## 4. First-aid measures

### 4.1 Description of necessary first-aid measures

#### General advice

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 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

no data available

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use dry chemical, carbon dioxide or alcohol-resistant foam.

## **5.2 Specific hazards arising from the chemical**

no data available

## **5.3 Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## **6. Accidental release measures**

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

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **6.2 Environmental precautions**

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

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

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## **7. Handling and storage**

### **7.1 Precautions for safe handling**

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**

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

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## **8. Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure 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 tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

### Skin protection

Wear fire/flamm resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

### Thermal hazards

no data available

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## 9. Physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Colour</b>	-
<b>Odour</b>	no data available
<b>Melting point/ freezing point</b>	39.6 °C. Atm. press.:995 hPa.
<b>Boiling point or initial boiling point and boiling range</b>	90.4 °C. Atm. press.:995 hPa.
<b>Flammability</b>	no data available
<b>Lower and upper explosion limit / flammability limit</b>	no data available
<b>Flash point</b>	Atm. press.:995 hPa.
<b>Auto-ignition temperature</b>	Atm. press.:995 hPa. Remarks:Sorbitan monostearate,ethoxylated did not catch fire on being exposed to air at room temperature of 23°C and atmospheric pressure of 995 hPa.
<b>Decomposition temperature</b>	no data available
<b>pH</b>	5.91.
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	In water: 300 mg/L. Temperature:23. Remarks:PH not known..Methanol.
<b>Partition coefficient n-octanol/water</b>	Pow = 0.03. Temperature:23 °C.
<b>Vapour pressure</b>	< 0.1 kPa. Temperature:20 °C.
<b>Density and/or relative density</b>	1.007 g/cm <sup>3</sup> . Temperature:23 °C.
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

no data available

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

no data available

### **10.4 Conditions to avoid**

no data available

### **10.5 Incompatible materials**

no data available

### **10.6 Hazardous decomposition products**

no data available

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## **11. Toxicological information**

### **Acute toxicity**

- Oral: LD50 - rat (male) - > 60 000 mg/kg bw. Remarks: No mortality observed.
- Inhalation: LC50 - rat - 85.037 mg/L air.
- Dermal: LD50 - rat (male/female) - 2 000 mg/kg bw.

### **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**

no data available

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

no data available

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## **12. Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 - *Oryzias latipes* - > 1 000 mg/L - 24 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 114.602 mg/L - 48 h.
- Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - 52.606 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - 52.606 mg/L - 72 h.

## 12.2 Persistence and degradability

no data available

## 12.3 Bioaccumulative potential

no data available

## 12.4 Mobility in soil

no data available

## 12.5 Other adverse effects

no data available

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## 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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## 14. Transport information

### 14.1 UN Number

ADR/RID: Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

### 14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

### 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

### 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

## 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 Annex II of MARPOL 73/78 and the IBC Code

no data available

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## 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
Sorbitan monostearate, ethoxylated	Tween-60	9005-67-8	500-020-4
European Inventory of Existing Commercial Chemical Substances (EINECS)			Not 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 (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

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## 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/>

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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.*