section 1: identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Trade name: Griseofulvin
IUPAC name: (1'S,3-6'R)-7-Chloro-2',4,6-trimethoxy-6'-methylspiro[benzofuran-2(3H),1'[2]cyclohexene]-3,4'-dione
EC-No.: 204-767-4
CAS-No.: 126-07-8
Product code: G0167
Formula: C17H17ClO6
Synonyms: Fulvicin
Product group: Raw material

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category: Professional use
Industrial/Professional use spec: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem - The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number

Emergency number: Supplier contact information:
+31(0)23-5319093 (M-F 09:00-17:00)
+31(0)6-30109355 (outside office hours)

<table>
<thead>
<tr>
<th>Organisation/Company</th>
<th>Address</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Health Organization world directory of poison centres</td>
<td><a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a></td>
<td>Consult website for a local poison centre</td>
</tr>
</tbody>
</table>

section 2: hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin sensitisation, Category 1: H317
Carcinogenicity, Category 2: H351
Reproductive toxicity, Category 1B: H360

Full text of H statements: see section 16
Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) : GHS08  GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H317 - May cause an allergic skin reaction.
                          H351 - Suspected of causing cancer.
                          H360 - May damage fertility or the unborn child.

Precautionary statements (CLP) : P202 - Do not handle until all safety precautions have been read and understood.
                               P281 - Use personal protective equipment as required.
                               P308+P313 - If exposed or concerned: Get medical advice/attention.
                               P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Griseofulvin</td>
<td>(CAS-No.) 126-07-8</td>
<td>&gt; 97</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 204-767-4</td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air
 Seek medical advice.

First-aid measures after skin contact : Rinse with plenty of water
 Seek medical advice.

First-aid measures after eye contact : Rinse immediately with plenty of water
 Seek medical advice.

First-aid measures after ingestion : Rinse mouth.
 Seek medical advice.

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

Symptoms/effects : Ingestion may cause nausea, vomiting and diarrhea. Exposure may produce an allergic reaction. Blurred vision. Fever. Gastrointestinal complaints.
Chronic symptoms: Based on animal experimentation, it is proved that product has shown teratogenic effects.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: Alcohol resistant foam.
Dry chemical powder.
Carbon dioxide (CO2).
Water spray.

5.2. Special hazards arising from the substance or mixture
Explosion hazard: Product is not explosive.
Hazardous decomposition products in case of fire: When heated to decomposition, emits toxic fumes:
- COx
- Chlorine.

5.3. Advice for firefighters
Firefighting instructions: Prevent fire fighting water from entering the environment.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Ensure adequate air ventilation. Avoid raising dust.

6.1.2. For emergency responders
Protective equipment: Wear proper protective equipment.

6.2. Environmental precautions
Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Sweep up dry powder and dispose properly.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in dry, well-ventilated area.
Keep container tightly closed.
Store at room temperature.
7.3. Specific end use(s)
For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls

Hand protection:

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>Permeation</th>
<th>Thickness (mm)</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves</td>
<td>Nitrile rubber (NBR)</td>
<td>6 (&gt; 480 minutes)</td>
<td>0,11</td>
<td>EN 374</td>
</tr>
</tbody>
</table>

Eye protection:
Safety glasses (to European standard EN 166 or equivalent)

Skin and body protection:
Protective clothing (with elasticated cuffs and closed neck). Chemical resistant apron

Respiratory protection:
Wear appropriate mask. Filter type P3 (EN 143)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance      : Crystalline powder.
Molecular mass : 352,8 g/mol
Colour         : White
                : Slightly yellow.
Odour          : Odourless.
Odour threshold : No data available
pH             : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point  : 216 - 220 °C
Freezing point : No data available
Boiling point  : No data available
Flash point    : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Solubility     : Soluble in ethanol.
Log Pow        : 2,18
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
None under normal conditions.

10.4. Conditions to avoid
High temperature
Moisture.

10.5. Incompatible materials
Strong oxidizers.

10.6. Hazardous decomposition products
Carbon dioxide
Carbon monoxide
Chlorine.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Griseofulvin (126-07-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>&gt; 10000 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : International Agency for Research on Cancer (IARC) : Group 2B: Possibly carcinogenic to humans

Reproductive toxicity : May damage fertility or the unborn child.
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
SECTION 12: Ecological information

12.1. Toxicty
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Griseofulvin (126-07-8)</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.18</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Avoid release to the environment.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

<table>
<thead>
<tr>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
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<tbody>
<tr>
<td>14.1. UN number</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<td></td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>No supplementary information available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.6. Special precautions for user
- Overland transport
  Not applicable
- Transport by sea
Not applicable

- Air transport
Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Griseofulvin is not on the REACH Candidate List
Griseofulvin is not on the REACH Annex XIV List

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV
: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijs van kankerverwekkende stoffen : The substance is not listed
SZW-lijs van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Recommendations Danish Regulation
: Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

<table>
<thead>
<tr>
<th></th>
<th>Emergency telephone</th>
<th>Modified</th>
<th>Added additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4</td>
<td>Emergency telephone</td>
<td>Modified</td>
<td>Added additional information</td>
</tr>
<tr>
<td>2</td>
<td>Classification (DSD/DPD)</td>
<td>Removed</td>
<td>Obsolete</td>
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<tr>
<td>8.2</td>
<td>Hand protection</td>
<td>Modified</td>
<td>Specified material, thickness, etc.</td>
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</table>

10/04/2018 Duchefa Biochemie B.V. EN (English) 7/8
### Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>EC50</td>
<td>Median effective concentration</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>LC50</td>
<td>Median lethal concentration</td>
</tr>
<tr>
<td>LD50</td>
<td>Median lethal dose</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>NOAEC</td>
<td>No-Observed Adverse Effect Concentration</td>
</tr>
<tr>
<td>NOAEL</td>
<td>No-Observed Adverse Effect Level</td>
</tr>
<tr>
<td>NOEC</td>
<td>No-Observed Effect Concentration</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent Bioaccumulative Toxic</td>
</tr>
<tr>
<td>RID</td>
<td>Regulations concerning the International Carriage of Dangerous Goods by Rail</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
</tbody>
</table>

### Data sources


### Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity, Category 2</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>Reproductive toxicity, Category 1B</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitisation, Category 1</td>
</tr>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H360</td>
<td>May damage fertility or the unborn child.</td>
</tr>
</tbody>
</table>

### SDS Biochemicals version 2018

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.