Paclobutrazol
Safety Data Sheet
according to Regulation (EU) 2015/830
Date of issue: 14/10/2011        Revision date 15/05/2019
Supersedes 22/02/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form : Substance
Trade name : Paclobutrazol
CAS-No. : 76738-62-0
Product code : P0922
Formula : C₁₅H₂₀ClN₃O
Synonyms : α-tert-Butyl-β-(4-chlorobenzyl)-1H-1,2,4-triazole-1-ethanol
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]
Flammable solids, Category 1 : H228
Acute toxicity (oral), Category 4 : H302
Reproductive toxicity, Category 2 : H361

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):
- GHS02
- GHS07
- GHS08

Signal word (CLP): Danger
Hazard statements (CLP):
- H228 - Flammable solid.
- H302 - Harmful if swallowed.
- H361 - Suspected of damaging fertility or the unborn child.

Precautionary statements (CLP):
- P201 - Obtain special instructions before use.
- P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name: Paclobutrazol
CAS-No.: 76738-62-0

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paclobutrazol</td>
<td>(CAS-No.) 76738-62-0</td>
<td>&gt; 90</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: If you feel unwell, seek medical advice
- Move to fresh air.

First-aid measures after skin contact: Wash skin with plenty of water and soap
- Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact: Rinse with water
- Seek medical attention if ill effect or irritation develops.

First-aid measures after ingestion: Rinse mouth out with water
- Get medical advice/attention.

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

Symptoms/effects: Damage to liver.

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
Hazardous decomposition products in case of fire:
- When heated to decomposition, emits toxic fumes:
  - COx
  - NOx.

5.3. Advice for firefighters
Firefighting instructions:
- Avoid (reject) fire-fighting water to enter environment. Use water spray or fog for cooling exposed containers.
Protection during firefighting:
- Wear proper protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures:
- Avoid raising powdered materials into airborne dust.

6.1.1. For non-emergency personnel
Protective equipment:
- Wear recommended personal protective equipment.

6.1.2. For emergency responders
No additional information available

6.2. Environmental precautions
Prevent entry to sewers and public waters.

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 and dry
- Powder: store at room temperature
- Liquid: 2 - 8 °C.

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 ISO 374</td>
</tr>
</tbody>
</table>

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

Skin and body protection:
Wear suitable protective clothing. Long sleeved protective clothing

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Crystalline powder. Powder.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>293.8 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>White Brown</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>165 - 166 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Poorly soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>
9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable under normal conditions of storage, handling and use.

10.2. Chemical stability
Stable under normal conditions of use.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
High temperature.

10.5. Incompatible materials
Strong oxidizing agent.

10.6. Hazardous decomposition products
When heated to decomposition, emits dangerous fumes
- COx
- NOx.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Harmful if swallowed.

<table>
<thead>
<tr>
<th>Paclobutrazol (76738-62-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 oral</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

Aspiration hazard : Not classified
Other information : See actual entry in RTECS for complete information: XZ4803300.

SECTION 12: Ecological information

12.1. Toxicity
Paclobutrazol
Safety Data Sheet according to Regulation (EU) 2015/830

Paclobutrazol (76738-62-0)
| LC50 fish 1 | 27.8 mg/l |
| EC50 Daphnia 1 | 28.7 mg/l |

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

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
Additional information: Prevent entry to sewers and public waters. Avoid release to the environment.

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

In accordance with ADN / ADR / IATA

<table>
<thead>
<tr>
<th>ADR</th>
<th>IATA</th>
<th>ADN</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1325</td>
<td>1325</td>
<td>1325</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Flammable solid, organic, n.o.s.</td>
<td>Flammable solid, organic, n.o.s.</td>
</tr>
<tr>
<td>FLAMMABLE SOLID, ORGANIC, N.O.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport document description</td>
<td>UN 1325 Flammable solid, organic, n.o.s., 4.1, II</td>
<td>UN 1325 Flammable solid, organic, n.o.s., 4.1, II</td>
</tr>
<tr>
<td>UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, II, (E)</td>
<td>UN 1325 Flammable solid, organic, n.o.s., 4.1, II</td>
<td>UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S., 4.1, II</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dangerous for the environment: No</td>
<td>Dangerous for the environment: No</td>
<td>Dangerous for the environment: No</td>
</tr>
<tr>
<td>Clean up even minor leaks or spills if possible without unnecessary risk, No naked lights. No smoking.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14.6. Special precautions for user
Special transport precautions: The driver shall not attempt to deal with any fire of the load.
Overland transport
Classification code (ADR) : F1
Special provisions (ADR) : 274
Limited quantities (ADR) : 1kg
Excepted quantities (ADR) : E2
Transport category (ADR) : 2
Hazard identification number (Kemler No.) : 40
Orange plates : 40
1325
Tunnel restriction code (ADR) : E
EAC code : 1Z

Air transport
PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y441
PCA limited quantity max net quantity (IATA) : 5kg
PCA packing instructions (IATA) : 445
PCA max net quantity (IATA) : 15kg
CAO packing instructions (IATA) : 448
CAO max net quantity (IATA) : 50kg
Special provisions (IATA) : A3
ERG code (IATA) : 3L

Inland waterway transport
Number of blue cones/lights (ADN) : 1

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
Paclobutrazol is not on the REACH Candidate List
Paclobutrazol is not on the REACH Annex XIV List

15.1.2. National regulations
Ensure all national/local regulations are observed.

Germany

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst 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 additional information available

SECTION 16: Other information

Indication of changes:

| 2.2 | Hazard statements (CLP) | Modified | H228;H302;H312;H412 -> H228;H302;H361 based on new data |
| 2.2 | Precautionary statements (CLP) | Modified | P210;P273;P280 -> P201;P301+P312;P308+P313 |
| 8.2 | Respiratory protection | Modified | P2 -> P3 |

Abbreviations and acronyms:

| ATE | Acute Toxicity Estimate |
| ADR | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| BCF | Bioconcentration factor |
| CLP | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 |
| DPD | Dangerous Preparations Directive 1999/45/EC |
| DSD | Dangerous Substances Directive 67/548/EEC |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Median lethal concentration |
| LD50 | Median lethal dose |
| LOAEL | Lowest Observed Adverse Effect Level |
| NOAEC | No-Observed Adverse Effect Concentration |
| PBT | Persistent Bioaccumulative Toxic |
| SDS | Safety Data Sheet |

Data sources: Supplier. ECHA (European Chemicals Agency).

Full text of H- and EUH-statements:

<p>| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Flam. Sol. 1 | Flammable solids, Category 1 |
| Repr. 2 | Reproductive toxicity, Category 2 |
| H228 | Flammable solid |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child.</td>
</tr>
</tbody>
</table>

SDS Biochemicals version 2019

*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.*