SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier
Product Description: Pentfluorobenzaldehyde
Cat No. 147090000; 147090025; 147090100
Synonyms None.

Relevant identified uses of the substance or mixture and uses advised against
Recommended Use Laboratory chemicals
Uses advised against No Information available

Details of the supplier of the safety data sheet
Company Acros Organics BVBA
Janssen Pharmaceuticaan 3a
2440 Geel, Belgium
E-mail address begel.sdsdesk@thermofisher.com

Emergency Telephone Number
For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100
CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
REGULATION (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Inhalation Toxicity - Dusts and Mists</td>
<td>3</td>
</tr>
<tr>
<td>Skin Corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>2</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (single exposure)</td>
<td>3</td>
</tr>
</tbody>
</table>

Classification according to EU Directives 67/548/EEC or 1999/45/EC
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

Symbol(s) T - Toxic
R-phrase(s) R23 - Toxic by inhalation
Risk Combination Phrases R36/37/38 - Irritating to eyes, respiratory system and skin
SECTION 2. HAZARDS IDENTIFICATION

Label Elements

Signal Word Danger

Hazard Statements
H335 - May cause respiratory irritation
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H331 - Toxic if inhaled

Precautionary Statements - EU (§28, 1272/2008)
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Other Hazards
No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Pentafluorobenzaldehyde</td>
<td>EEC No. 211-502-6</td>
<td>98</td>
<td>653-37-2</td>
<td>T; R23 Xi; R36/37/38</td>
<td>STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 3 (H331)</td>
<td>-</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16
SECTION 4. FIRST AID MEASURES

Description of first aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Ingestion
Clean mouth with water. Get medical attention.

Inhalation
Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

Notes to Physician
Treat symptomatically

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media
Water spray. Carbon dioxide (CO₂). Dry chemical. chemical foam.

Extinguishing media which must not be used for safety reasons
No information available.

Special hazards arising from the substance or mixture
Combustible material.

Advice for fire-fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation

Environmental precautions
Prevent further leakage or spillage if safe to do so

Methods and material for containment and cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Wear self-contained breathing apparatus and protective suit. Do not let this chemical enter the environment.
**SECTION 7. HANDLING AND STORAGE**

**Precautions for Safe Handling**

Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Do not ingest. Use only in area provided with appropriate exhaust ventilation.

**Conditions for safe storage, including any incompatibilities**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Store under an inert atmosphere.

**Specific End Uses**

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Biological limit values**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

**Derived No Effect Level (DNEL)**

No information available.

**Predicted No Effect Concentration (PNEC)**

No information available.

**Exposure controls**

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal protective equipment**

**Eye Protection**

Goggles

**Hand Protection**

Protective gloves

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical State**

Liquid

**Appearance**

Yellow

**odor**

odorless

**pH**

No information available.

**Vapor Pressure**

No information available.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Vapor Density</td>
<td>6.76</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>164 - 166°C / 327.2 - 330.8°F @ 760 mmHg</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>20°C / 68°F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>77°C / 170.6°F</td>
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<tr>
<td>Autoignition Temperature</td>
<td>No information available.</td>
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<tr>
<td>Specific Gravity</td>
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<tr>
<td>Molecular Formula</td>
<td>C7 H F5 O</td>
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<tr>
<td>Molecular Weight</td>
<td>196.08</td>
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</table>

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability

Air sensitive.

Possibility of Hazardous Reactions

Hazardous Polymerization

No information available.

Hazardous Reactions

No information available.

Conditions to Avoid

Heat, flames and sparks, Exposure to air, Incompatible products.

Incompatible Materials

Strong oxidizing agents, Strong bases.

Hazardous Decomposition Products


SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Product Information

No acute toxicity information is available for this product

Component Information

Chronic Toxicity

Carcinogenicity

There are no known carcinogenic chemicals in this product
SECTION 11. TOXICOLOGICAL INFORMATION

Sensitization  No information available.
Mutagenic Effects  No information available.
Reproductive Effects  No information available.
Developmental Effects  No information available.
Target Organs  No information available.
Other Adverse Effects  The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.
Endocrine Disruptor Information  None known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects  Do not empty into drains.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
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<tbody>
<tr>
<td>Pentafluorobenzaldehyde</td>
<td></td>
<td>1-1.2 mg/L LC50 96 h</td>
<td></td>
<td></td>
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</table>

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Results of PBT and vPvB assessment

Other adverse effects

No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products  Dispose of in accordance with local regulations.
Contaminated Packaging  Empty containers should be taken to local recyclers for disposal.
SECTION 14. TRANSPORT INFORMATION

IMDG/IMO

<table>
<thead>
<tr>
<th>UN-No</th>
<th>2810</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>TOXIC LIQUID, ORGANIC, N.O.S.</td>
</tr>
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</table>

ADR

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<tr>
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IATA

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SECTION 15. REGULATORY INFORMATION

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

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>CHINA</th>
<th>AICS</th>
<th>KECL</th>
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Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCs - Japan Existing and New Chemical Substances
CHINA - China Inventory of Existing Chemical Substances
AICS - Inventory of Chemical Substances
KECL - Existing and Evaluated Chemical Substances
SECTION 16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R23 - Toxic by inhalation
R36/37/38 - Irritating to eyes, respiratory system and skin

Revision Date 19-Apr-2012
Revision Summary Not applicable
Reason for revision This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Disclaimer The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet