


1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** PERGASAFE HBCD
- **Application of the substance / the preparation**
 - For industrial use
 - Fire retarding agent
- **Manufacturer/Supplier:**
 - PERGAN GmbH
 - Hilfsstoffe für industrielle Prozesse
 - Schlavenhorst 71
 - D-46395 Bocholt
 - Tel: +49 2871 9902-0
 - Fax: +49 2871 9902-50
- **Further information obtainable from:**
 - Environment protection / Security of labour
 - Competent person:
 - * Kathrin Bohland (Sales) e-mail: k.bohland@pergan.com
 - * Christoph Wilting (Environment protection / Security of labour) e-mail: c.wilting@pergan.com
- **Information in case of emergency:**
 - Tel: +49 2871 9902-0

2 Hazards identification

- **Hazard description:**
 - 
 - Xi Irritant
 - N Dangerous for the environment
- **Information concerning particular hazards for human and environment:**
 - The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 - R 36/37/38 Irritating to eyes, respiratory system and skin.
 - R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Classification system:**
 - The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

3 Composition/information on ingredients

- **Chemical characterization**

- **Dangerous components:**

| | | | |
|-------------------|-------------------------------------|-------------------------|------|
| CAS: 3194-55-6 | 1,2,5,6,9,10-hexabromocyclododecane | Xi, N; R 36/37/38-50/53 | >98% |
| EINECS: 247-148-4 | | | |

- **Additional information:**
 - For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **General information:**
 - Take care of personal protection for the first aider.
- **After inhalation:**
 - In case of unconsciousness place patient stably in side position for transportation.
 - Supply fresh air or oxygen; call for doctor.
- **After skin contact:**
 - Immediately wash with water and soap and rinse thoroughly.
 - Immediately remove contaminated clothing.
- **After eye contact:**
 - Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
 - Do not induce vomiting; call for medical help immediately.
 - Call for a doctor immediately.
 - Rinse out mouth and then drink plenty of water.


*** 5 Fire-fighting measures**

- **Suitable extinguishing agents:**
 - Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**
 - Hydrogene bromide
 - Carbon monoxide (CO)
 - Bromine
- **Protective equipment:**
 - Do not inhale explosion gases or combustion gases.
 - Mouth respiratory protective device.
- **Additional information**
 - Self-protection first!


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6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
 Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:** Ensure adequate ventilation.
Send for recovery or disposal in suitable receptacles.
- **Additional information:** In case of large spillage the environmental authority should be informed.

7 Handling and storage

- **Handling:** Pay attention to the special requirements of your local authorities for handling with dangerous goods.
- **Information for safe handling:** Prevent formation of dust.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Before break and at the end of work hands should be thoroughly washed.
Avoid contact with skin and eyes.
While using do not eat, drink or smoke.
 Do not smoke.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:** Pay attention to the special requirements of your local authorities for storing dangerous goods.
- **Requirements to be met by storerooms and receptacles:** Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.
- **Information about storage in one common storage facility:** Store away from foodstuffs, drinks and feeding stuffs.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Recommended storage temperature (To maintain quality):** -°C
- **Storage class:** 11 "Combustible solids" (VCI Guideline)


8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:** The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
· **General protective and hygienic measures:** The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid close or long term contact with the skin.
Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.
Use skin protection cream for skin protection.
Be sure to clean skin thoroughly after work and before breaks.
- **Respiratory protection:** In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory protective device in case of insufficient ventilation.
 Filter P3
- **Protection of hands:** Only use chemical-protective gloves with CE-labelling of category III.
 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves:** Protective gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

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| | |
|---|--|
| <ul style="list-style-type: none"> · Penetration time of glove material · Eye protection: · Body protection: | <p>Butyl rubber, BR Fluorocarbon rubber (Viton) Nitrile rubber, NBR Neoprene</p> <p>The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.</p> <p> Tightly sealed goggles</p> <p>Protective work clothing</p> |
|---|--|

9 Physical and chemical properties

| | |
|---|---|
| · General Information | |
| · Form: | Solid |
| · Colour: | white - yellowish |
| · Odour: | Odourless |
| · Change in condition | |
| · Melting point/Melting range: | 175-185°C |
| · Boiling point/Boiling range: | Undetermined. |
| · Flash point: | Not applicable. |
| · Decomposition temperature: | >445°C |
| · Self-igniting: | Product is not selfigniting. |
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Density at 20°C: | 2.18 g/cm ³ |
| · Solubility in / Miscibility with water at 25°C: | 0.0000034 g/l |
| · Segregation coefficient (n-octanol/water): | 5.625 ~Kow |

*** 10 Stability and reactivity**

| | |
|---|--|
| <ul style="list-style-type: none"> · Dangerous reactions · Dangerous decomposition products: · Additional information: | <p>Decomposition at:</p> <p>Hydrogen bromide Carbon monoxide Bromine</p> <p>Emergency procedures will vary depending on conditions. The customer should have an emergency response plane in place.</p> |
|---|--|

11 Toxicological information

· Acute toxicity:

| | |
|--|-----------------------------|
| · LD/LC50 values relevant for classification: | |
| 3194-55-6 1,2,5,6,9,10-hexabromocyclododecane | |
| Oral | LD50 >10 g/kg (rattus) |
| Dermal | LD50 >20 g/kg (cuniculosus) |
| Inhalative | LC50 >202 mg/l (rattus) |

· Primary irritant effect:

| | |
|---|--|
| <ul style="list-style-type: none"> · on the skin: · on the eye: · Sensitization: | <p>Irritating effect.</p> <p>Irritating effect.</p> <p>No sensitizing effects known.</p> |
|---|--|

· Additional toxicological information:

Classification in carcinogenic, mutagenic or ability of reproduction is not possible at the moment. The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

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12 Ecological information

| | |
|---|---|
| · Information about elimination (persistence and degradability): | |
| 3194-55-6 1,2,5,6,9,10-hexabromocyclododecane | |
| BOD | 0% (-) |
| · Ecotoxic effects: | |
| · Aquatic toxicity: | |
| 3194-55-6 1,2,5,6,9,10-hexabromocyclododecane | |
| EC50 / 0,5h | >10000 mg/l (pseudomonas putida) |
| EC50 / 48h | >0.0068 mg/l (daphnia magna) |
| EC50 / 72h | >500 mg/l (scenedesmus subspicatus) |
| LC50 / 96h | >100 mg/l (Iepomis macrochirus) |
| | >10000 mg/l (leuciscus idus) |
| · Remark: | Very toxic for fish |
| · General notes: | Also poisonous for fish and plankton in water bodies. Very toxic for aquatic organisms Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. |

13 Disposal considerations

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|-------------------------------|--|
| · Product: | |
| · Recommendation | Must not be disposed together with household garbage. Do not allow product to reach sewage system. |
| · Waste disposal key: | Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-number. |
| · Uncleaned packaging: | |
| · Recommendation: | This material and its container must be disposed of as hazardous waste. |


14 Transport information

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| · Land transport ADR/RID (cross-border) | |
|  | |
| · ADR/RID class: | 9 (M7) Miscellaneous dangerous substances and articles. |
| · Danger code (Kemler): | 90 |
| · UN-Number: | 3077 |
| · Packaging group: | III |
| · Hazard label: | 9 |
| · Description of goods: | 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (HEXABROMOCYCLODODECANE) |
| · RID / GGVSE: | like ADR |
| · Maritime transport IMDG: | |
|  | |
| · IMDG Class: | 9 |
| · UN Number: | 3077 |
| · Label | 9 |
| · Packaging group: | III |
| · Proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (HEXABROMOCYCLODODECANE) |
| · Air transport ICAO-TI and IATA-DGR: | |
|  | |
| · ICAO/IATA Class: | 9 |
| · UN/ID Number: | 3077 |
| · Label | 9 |
| · Packaging group: | III |
| · Proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (HEXABROMOCYCLODODECANE) |

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15 Regulatory information

- **Labelling according to EU guidelines:** The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**
 Xi Irritant
N Dangerous for the environment
- **Hazard-determining components of labelling:** 1,2,5,6,9,10-hexabromocyclododecane
- **Risk phrases:**
36/37/38 Irritating to eyes, respiratory system and skin.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Safety phrases:**
23 Do not breathe gas/fumes/vapour/spray.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
38 In case of insufficient ventilation, wear suitable respiratory equipment.
57 Use appropriate container to avoid environmental contamination.
60 This material and its container must be disposed of as hazardous waste.
61 Avoid release to the environment. Refer to special instructions/safety data sheets.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Please note:** Take care of the respective local regulations.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant R-phrases** 36/37/38 Irritating to eyes, respiratory system and skin.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Department issuing MSDS:** Environment protection / Security of labour
- **Contact:** Tel: +49 2871 9902-0
E-mail: mail@pergan.com
- *** Data compared to the previous version altered.**