1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: 4-Chlorobenzoic acid
Product Code: SC-238816

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Acute toxicity - Oral: Category 4
Serious eye damage/eye irritation: Category 2A
Specific target organ toxicity (single exposure): Category 3

Label elements
Signal word: Warning
Hazard statements: Harmful if swallowed, Causes serious eye irritation, May cause respiratory irritation

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Precautionary Statements - Disposal

Store locked up
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Hazards not otherwise classified (HNOC)
Not applicable

Other Information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>2</th>
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<tbody>
<tr>
<td>Flammability</td>
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<tr>
<td>Stability</td>
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<td>Physical and chemical properties</td>
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<table>
<thead>
<tr>
<th>CAS No</th>
<th>Molecular Weight</th>
<th>Formula</th>
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<tbody>
<tr>
<td>74-11-3</td>
<td>156.57</td>
<td>C₇H₅ClO₂</td>
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<table>
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<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Oral LD₅₀</th>
<th>Dermal LD₅₀</th>
<th>Inhalation LC₅₀</th>
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<tr>
<td>4-Chlorobenzoic acid</td>
<td>74-11-3</td>
<td>&gt;98</td>
<td>= 1170 mg/kg ( Rat )</td>
<td>-</td>
<td>-</td>
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</table>

4. FIRST AID MEASURES

First Aid Measures

General advice
If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact
Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation
Remove to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion
Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.

Self-protection of the first aider
Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
No information available.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
Hazardous combustion products

Thermal decomposition can lead to release of toxic/corrosive gases and vapors.
Carbon oxides. Phosgene.

**Explosion data**
- Sensitivity to Mechanical Impact: No information available.
- Sensitivity to Static Discharge: No information available.

**Protective equipment and precautions for firefighters**
Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
- Personal precautions: Ensure adequate ventilation, especially in confined areas.

**Environmental precautions**
- Environmental precautions: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**
- Methods for containment: Prevent further leakage or spillage if safe to do so.
- Methods for cleaning up: Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

**Precautions for safe handling**
- Advice on safe handling: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

**Conditions for safe storage, including any incompatibilities**
- Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at room temperature.
- Incompatible materials: None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
- Exposure Guidelines: This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Appropriate engineering controls**
- Engineering Controls: Showers, Eyewash stations, Ventilation systems
Individual protection measures, such as personal protective equipment

Eye/face protection  Tight sealing safety goggles.
Skin and Body Protection  Wear protective gloves and protective clothing.
Respiratory protection  If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations  Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
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<td>Appearance</td>
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</tr>
<tr>
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<td>Boiling point</td>
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<tr>
<td>Flash point</td>
<td>238 °C CC (closed cup)</td>
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<td>Liquid Density</td>
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<td>Upper flammability limits</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
<td>Solubility in other solvents</td>
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<tr>
<td>Partition coefficient</td>
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<tr>
<td>Autoignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Kinematic viscosity</td>
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<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
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</table>

10. STABILITY AND REACTIVITY

Reactivity  Not applicable

Chemical stability  Stable under recommended storage conditions.
Possibility of Hazardous Reactions  None under normal processing.
Hazardous polymerization  No information available.
Conditions to avoid  Extremes of temperature and direct sunlight.
Incompatible materials  Strong oxidizing agents.
Hazardous Decomposition Products  Carbon oxides. Phosgene.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation  No data available.
Eye contact  No data available.
Skin Contact  No data available.
Ingestion  No data available.
Information on toxicological effects
Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Chronic Toxicity No information available.

Numerical measures of toxicity - Product Information
Unknown acute toxicity No information available
The following values are calculated based on chapter 3.1 of the GHS document
ATEmix (oral) 1170 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity May cause long lasting harmful effects to aquatic life
100% of the mixture consists of components(s) of unknown hazards to the aquatic environment.
Persistence and degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging Do not reuse container.
Other Information Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

DOT Not regulated
IMDG Not regulated
IATA Not regulated

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) China (IECSC) ENCS (Japan): Philippines (PICCS)

<table>
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<tr>
<th>Chemical name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
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<td>4-Chlorobenzoic acid</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td></td>
<td>X</td>
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</table>

X - Listed
SC-238816 - 4-Chlorobenzoic acid

Revision date 22-Jan-2019

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard Yes
Chronic Health Hazard No
Fire hazard No
Sudden release of pressure hazard No
Reactive hazard No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations

16. OTHER INFORMATION

Revision note No information available

Disclaimer
The information provided in this Material 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet