SAFETY DATA SHEET

4-Hydroxybenzaldehyde

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

Product Description: 4-Hydroxybenzaldehyde
Cat No.: A13580
Synonyms: P-Oxybenzaldehyde.; 4-Formylphenol; P-Hydroxybenzaldehyde
CAS-No: 123-08-0
Molecular Formula: C7 H6 O2
Supplier: Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham, Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608

Emergency Telephone Number: Call Carechem 24 at
+44 (0) 1865 407333 (English only);
+44 (0) 1235 239670 (Multi-language)

E-mail address: uktech@alfa.com
www.alfa.com
Product Safety Department

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

SECTION 2. HAZARD IDENTIFICATION

Physical State: Powder
Appearance: Solid
Odor: Odorless

Emergency Overview:
May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Sensitivity to light. Air sensitive.

Classification of the substance or mixture:

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity</td>
<td>Category 5</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label Elements: 

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Page 1
Signal Word  Warning

Hazard Statements
H303 - May be harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary Statements
Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

Response
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P362 - Take off contaminated clothing and wash before reuse

Storage
P403 - Store in a well-ventilated place

Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Physical and Chemical Hazards
None identified.

Health Hazards
May be harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

Environmental hazards
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzaldehyde, 4-hydroxy-</td>
<td>123-08-0</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General Advice
If symptoms persist, call a physician.

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

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation
Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion
Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects
- Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
Self-Protection of the First Aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Notes to Physician
Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.

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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling
Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage
Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from direct sunlight. Keep under nitrogen.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and
Exposure Controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection  Goggles (European standard - EN 166)
Hand Protection  Protective gloves

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection  Long sleeved clothing
Respiratory Protection  No protective equipment is needed under normal use conditions.
Large scale/emergency use  Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Small scale/Laboratory use  Maintain adequate ventilation

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance  Light brown
Physical State  Powder Solid
Odor  Odorless
Odor Threshold  No data available
pH  No information available
Melting Point/Range  114 - 118 °C / 237.2 - 244.4 °F
Softening Point  No data available
Boiling Point/Range  No information available
Flash Point  No information available  Method - No information available  Solid
Evaporation Rate  Not applicable
Flammability (solid, gas)  No information available
Explosion Limits  No data available
Vapor Pressure  No information available
Vapor Density  Not applicable  Solid
Specific Gravity / Density  No data available
Bulk Density  No data available
4-Hydroxybenzaldehyde

Water Solubility
Solubility in other solvents
Partition Coefficient (n-octanol/water)
Component
Autoignition Temperature
Decomposition Temperature
Viscosity
Explosive Properties
Oxidizing Properties

Molecular Formula
Molecular Weight

SECTION 10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions. Air sensitive. Light sensitive.

Hazardous Reactions
None under normal processing.

Hazardous Polymerization
No information available.

Conditions to Avoid
Exposure to air. Exposure to light. Incompatible products.

Materials to avoid

Hazardous Decomposition Products
Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzaldehyde, 4-hydroxy-</td>
<td>LD50 = 2250 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation;
Category 2

(c) serious eye damage/irritation;
Category 2

(d) respiratory or skin sensitization;
Respiratory
No data available
Skin
No data available

(e) germ cell mutagenicity;
No data available

(f) carcinogenicity;
No data available
There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;
No data available

(h) STOT-single exposure;
No data available
### Results / Target organs

Respiratory system

(i) STOT-repeated exposure;  
Target Organs  
None known.

(j) aspiration hazard;  
Solid  
Not applicable

### Other Adverse Effects

The toxicological properties have not been fully investigated.

### Symptoms / effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity effects

Do not empty into drains.

#### Persistence and Degradability

**Persistence**  
Soluble in water, Persistence is unlikely, based on information available.

#### Bioaccumulative Potential

Bioaccumulation is unlikely

#### Mobility in soil

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

#### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

#### Persistent Organic Pollutant

This product does not contain any known or suspected substance

#### Ozone Depletion Potential

This product does not contain any known or suspected substance

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Waste from Residues / Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

#### Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

### SECTION 14. TRANSPORT INFORMATION

#### Road and Rail Transport

Not Regulated

#### IMDG/IMO

Not regulated

#### IATA

Not regulated
SAFETY DATA SHEET
4-Hydroxybenzaldehyde

Special Precautions for User
No special precautions required

SECTION 15. REGULATORY INFORMATION

International Inventories
X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Australia (AICS), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>The Inventory of Hazardous Chemicals (2015 Edition)</th>
<th>List of dangerous goods GB 12268 - 2012</th>
<th>Taiwan Toxic Chemicals I Substances Inventory</th>
<th>IECSC</th>
<th>EINECS</th>
<th>TSCA</th>
<th>DSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzaldehyde, 4-hydroxy-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>204-599-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-2034-7</td>
<td></td>
</tr>
</tbody>
</table>

National Regulations

SECTION 16. OTHER INFORMATION

Prepared By
Health, Safety and Environmental Department
Revision Date
21-May-2019
Revision Summary
SDS authoring systems update, replaces ChemGes SDS No. 123-08-0/2.

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.
Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Legend

<table>
<thead>
<tr>
<th>CAS - Chemical Abstracts Service</th>
<th>TSCA - United States Toxic Substances Control Act Section 8(b) Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances</td>
<td>DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List</td>
</tr>
<tr>
<td>PICCS - Philippines Inventory of Chemicals and Chemical Substances</td>
<td>ENCS - Japanese Existing and New Chemical Substances</td>
</tr>
<tr>
<td>IECSC - Chinese Inventory of Existing Chemical Substances</td>
<td>AICS - Australian Inventory of Chemical Substances</td>
</tr>
<tr>
<td>KECL - Korean Existing and Evaluated Chemical Substances</td>
<td>NZIoC - New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>WEL - Workplace Exposure Limit</td>
<td>TWA - Time Weighted Average</td>
</tr>
<tr>
<td>ACGIH - American Conference of Governmental Industrial Hygienists</td>
<td>IARC - International Agency for Research on Cancer</td>
</tr>
<tr>
<td>DNEL - Derived No Effect Level</td>
<td>PNEC - Predicted No Effect Concentration</td>
</tr>
<tr>
<td>RPE - Respiratory Protective Equipment</td>
<td>LD50 - Lethal Dose 50%</td>
</tr>
<tr>
<td>LC50 - Lethal Concentration 50%</td>
<td>ECV50 - Effective Concentration 50%</td>
</tr>
<tr>
<td>NOEC - No Observed Effect Concentration</td>
<td>POW - Partition coefficient Octanol:Water</td>
</tr>
<tr>
<td>PBT - Persistent, Bioaccumulative, Toxic</td>
<td>vPvB - very Persistent, very Bioaccumulative</td>
</tr>
<tr>
<td>ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road</td>
<td>ICAO/IATA - International Civil Aviation Organization/International Air Transport Association</td>
</tr>
<tr>
<td>IMO/IMDG - International Maritime Organization/International Maritime</td>
<td></td>
</tr>
</tbody>
</table>
Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer
The information provided in 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 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