SAFETY DATA SHEET

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

1.1 Product identifiers
   Product name: Methyl 4-hydroxybenzoate

   Product Number: 54750
   Brand: Sigma-Aldrich
   CAS-No.: 99-76-3

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet
   Company: Sigma-Aldrich Inc.
   3050 SPRUCE ST
   ST. LOUIS MO 63103
   UNITED STATES
   Telephone: +1 314 771-5765
   Fax: +1 800 325-5052

1.4 Emergency telephone
   Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
   Short-term (acute) aquatic hazard (Category 3), H402
   Long-term (chronic) aquatic hazard (Category 2), H411

   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements
   Pictogram

   Signal word: none

   Hazard statement(s)
   H402 Harmful to aquatic life.
   H411 Toxic to aquatic life with long lasting effects.
Precautionary statement(s)
P273     Avoid release to the environment.
P391     Collect spillage.
P501     Dispose of contents/container to an approved waste disposal plant.

2.3 **Hazards not otherwise classified (HNOC) or not covered by GHS** - none

SECTION 3: Composition/information on ingredients

3.1 **Substances**

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl 4-hydroxybenzoate</td>
<td>Aquatic Acute 3; Aquatic Chronic 2; H402, H411</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 **Description of first-aid measures**

**If inhaled**
After inhalation: fresh air.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Remove contact lenses.

**If swallowed**
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
- Water
- Foam
- Carbon dioxide (CO2)
- Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
- Carbon oxides
- Combustible.
- Vapors are heavier than air and may spread along floors.
- Forms explosive mixtures with air on intense heating.
- Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
- Tightly closed. Dry.

Storage class
- Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Ingredients with workplace control parameters**
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

**Appropriate engineering controls**
Change contaminated clothing. Wash hands after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance 
   Form: solid 
   Color: white

b) Odor 
   odorless

c) Odor Threshold 
   Not applicable

d) pH 
   5.72 at 1.88 g/l at 20 °C (68 °F)

e) Melting point/freezing point 
   Melting point/range: 125 - 128 °C (257 - 262 °F)

f) Initial boiling point and boiling range 
   Decomposes below the boiling point.

g) Flash point 
   168 °C (334 °F)

h) Evaporation rate 
   No data available

i) Flammability (solid, gas) 
   The product is not flammable. - Flammability (solids)

j) Upper/lower flammability or explosive limits 
   No data available

k) Vapor pressure 
   < 1 hPa at 20 °C (68 °F)

l) Vapor density 
   5.23 - (Air = 1.0)

m) Density 
   1.38 g/cm³ at 20 °C (68 °F) - OECD Test Guideline 109
   Relative density 
   No data available

n) Water solubility 
   1.88 g/l at 20 °C (68 °F) - OECD Test Guideline 105

o) Partition coefficient: n-octanol/water 
   Pow: 95.5; log Pow: 1.98 at 22 °C (72 °F) - Bioaccumulation is not expected.

p) Autoignition temperature 
   > 403 °C (> 757 °F) - Relative self-ignition temperature for solids

q) Decomposition temperature 
   270 - 280 °C (518 - 536 °F) -

r) Viscosity 
   No data available

s) Explosive properties 
   No data available

t) Oxidizing properties 
   none

9.2 Other safety information

Relative vapor density 
5.23 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 **Chemical stability**
The product is chemically stable under standard ambient conditions (room temperature).

10.3 **Possibility of hazardous reactions**
Violent reactions possible with:
- Bases
- Strong oxidizing agents

10.4 **Conditions to avoid**
Strong heating.

10.5 **Incompatible materials**
No data available

10.6 **Hazardous decomposition products**
In the event of fire: see section 5

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**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**
- LD50 Oral - Rat - male - > 5,000 mg/kg
  (OECD Test Guideline 401)
- Inhalation: No data available
  Dermal: No data available

**Skin corrosion/irritation**
- Skin - Rabbit
  Result: No skin irritation
  Remarks: (External MSDS)

**Serious eye damage/eye irritation**
- Eyes - Rabbit
  Result: slight irritation
  Remarks: (ECHA)

**Respiratory or skin sensitization**
- Maurer optimisation test - Guinea pig
  Result: negative
  (OECD Test Guideline 406)

**Germ cell mutagenicity**
- Test Type: Ames test
- Test system: Salmonella typhimurium
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 471
  Result: negative
- Test Type: In vitro mammalian cell gene mutation test
  Test system: Chinese hamster ovary cells
  Metabolic activation: with and without metabolic activation
  Method: OECD Test Guideline 476
  Result: negative
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: dominant lethal test
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 478
Result: negative

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information
RTECS: DH2450000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Respiratory disorders, Discomfort, giddiness, Nausea, Vomiting

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish semi-static test LC50 - Oryzias latipes (Orange-red killifish) - 59.5 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 11.2 mg/l - 48 h (ISO 6341)
Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (algae) - 91 mg/l - 72 h (ISO 8692)
12.2 Persistence and degradability
Biodegradability aerobic - Exposure time 28 d
Result: 89 % - Readily biodegradable.
(OECD Test Guideline 301B)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
UN number: 3077   Class: 9   Packing group: III   EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (methyl 4-hydroxybenzoate)
Marine pollutant : yes

IATA
UN number: 3077   Class: 9   Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (methyl 4-hydroxybenzoate)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9
SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
methyl 4-hydroxybenzoate  
CAS-No. 99-76-3  
Revision Date 2012-07-01

New Jersey Right To Know Components
methyl 4-hydroxybenzoate  
CAS-No. 99-76-3  
Revision Date 2012-07-01

SECTION 16: Other information

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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