

## SAFETY DATA SHEET

Version 6.5  
Revision Date 09/02/2021  
Print Date 02/05/2022

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Phenolphthalein

Product Number : 105945  
Brand : Sigma-Aldrich  
Index-No. : 604-076-00-1  
CAS-No. : 77-09-8

**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)**

Skin irritation (Category 2), H315  
Germ cell mutagenicity (Category 2), H341  
Carcinogenicity (Category 1B), H350  
Reproductive toxicity (Category 2), H361

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

Danger

|                            |                                                                               |
|----------------------------|-------------------------------------------------------------------------------|
| Hazard statement(s)        |                                                                               |
| H315                       | Causes skin irritation.                                                       |
| H341                       | Suspected of causing genetic defects.                                         |
| H350                       | May cause cancer.                                                             |
| H361                       | Suspected of damaging fertility or the unborn child.                          |
| Precautionary statement(s) |                                                                               |
| P201                       | Obtain special instructions before use.                                       |
| P202                       | Do not handle until all safety precautions have been read and understood.     |
| P264                       | Wash skin thoroughly after handling.                                          |
| P280                       | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P302 + P352                | IF ON SKIN: Wash with plenty of soap and water.                               |
| P308 + P313                | IF exposed or concerned: Get medical advice/ attention.                       |
| P332 + P313                | If skin irritation occurs: Get medical advice/ attention.                     |
| P362                       | Take off contaminated clothing and wash before reuse.                         |
| P405                       | Store locked up.                                                              |
| 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

|                  |                                                   |
|------------------|---------------------------------------------------|
| Synonyms         | : 3,3-Bis(4-hydroxyphenyl)-1(3H)-isobenzofuranone |
| Formula          | : C <sub>20</sub> H <sub>14</sub> O <sub>4</sub>  |
| Molecular weight | : 318.32 g/mol                                    |
| CAS-No.          | : 77-09-8                                         |
| EC-No.           | : 201-004-7                                       |
| Index-No.        | : 604-076-00-1                                    |

| Component              | Classification                                                          | Concentration |
|------------------------|-------------------------------------------------------------------------|---------------|
| <b>phenolphthalein</b> |                                                                         |               |
|                        | Skin Irrit. 2; Muta. 2;<br>Carc. 1B; Repr. 2; H315,<br>H341, H350, H361 | <= 100 %      |

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

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

**In case of skin contact**

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

**In case of eye contact**

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**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

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

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

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Not combustible.

Ambient fire may liberate hazardous vapours.

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

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

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

#### **Storage class**

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **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**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face 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**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested:KCL 741 Dermatril® L

### **Body Protection**

protective clothing

### **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.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                                                 |                                                          |
|-------------------------------------------------|----------------------------------------------------------|
| a) Appearance                                   | Form: crystalline<br>Color: white                        |
| b) Odor                                         | odorless                                                 |
| c) Odor Threshold                               | Not applicable                                           |
| d) pH                                           | No data available                                        |
| e) Melting point/freezing point                 | Melting point/range: 261 - 263 °C (502 - 505 °F) - lit.  |
| f) Initial boiling point and boiling range      | > 450 °C > 842 °F at 1,013 hPa - OECD Test Guideline 103 |
| g) Flash point                                  | ( )Not applicable                                        |
| 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                               | < 0.1 hPa at 50 °C (122 °F) - OECD Test Guideline 104    |
| l) Vapor density                                | No data available                                        |

|                                           |                                                                                            |
|-------------------------------------------|--------------------------------------------------------------------------------------------|
| m) Density                                | No data available                                                                          |
| Relative density                          | ca.1.29 at 20.6 °C (69.1 °F) - OECD Test Guideline 109                                     |
| n) Water solubility                       | 0.00336 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - slightly soluble                  |
| o) Partition coefficient: n-octanol/water | log Pow: 0.9 at 25 °C (77 °F) - OECD Test Guideline 117 - Bioaccumulation is not expected. |
| p) Autoignition temperature               | 397 °C (747 °F) - Relative self-ignition temperature for solids                            |
| q) Decomposition temperature              | No data available                                                                          |
| r) Viscosity                              | No data available                                                                          |
| s) Explosive properties                   | No data available                                                                          |
| t) Oxidizing properties                   | none                                                                                       |

## 9.2 Other safety information

|                 |                                                      |
|-----------------|------------------------------------------------------|
| Surface tension | 71.8 mN/m at 20 °C (68 °F) - OECD Test Guideline 115 |
|-----------------|------------------------------------------------------|

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 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:  
Strong oxidizing agents

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Strong oxidizing agents

### 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

Oral: No data available

Inhalation: No data available

Dermal: No data available

#### Skin corrosion/irritation

Skin - reconstructed human epidermis (RhE)

Result: irritating - 42 min

(OECD Test Guideline 439)

**Serious eye damage/eye irritation**

Eyes - In vitro study

Result: non-corrosive - 4 h

(OECD Test Guideline 437)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: Not a skin sensitizer.

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Suspected of causing genetic defects.

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

**Carcinogenicity**

Presumed to have carcinogenic potential for humans

IARC: 2B - Group 2B: Possibly carcinogenic to humans (phenolphthalein)

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**

Suspected of damaging fertility.

**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**

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 800 mg/kg

RTECS: SM8380000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After uptake of large quantities:

Nausea

Vomiting

Gastrointestinal disturbance

Fever

cardiovascular disorders

CNS disorders

The substance has a laxative effect.

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Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates      static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae      static test ErC50 - Desmodesmus subspicatus (green algae) - > 3.33 mg/l - 72 h (OECD Test Guideline 201)  
static test NOEC - Desmodesmus subspicatus (green algae) - 0.57 mg/l - 72 h (OECD Test Guideline 201)

### 12.2 Persistence and degradability

Biodegradability      aerobic - Exposure time 28 d  
Result: 76 % - Readily biodegradable.  
(OECD Test Guideline 301F)  
Remarks: The 10 day time window criterion is not fulfilled.

### 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 Other adverse effects

No data available

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## 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](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

### Further information

Not classified as dangerous in the meaning of transport regulations.

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## SECTION 15: Regulatory information

### SARA 302 Components

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

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

|                 | CAS-No. | Revision Date |
|-----------------|---------|---------------|
| phenolphthalein | 77-09-8 | 2020-07-14    |

### SARA 311/312 Hazards

Chronic Health Hazard

### 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

|                 | CAS-No. | Revision Date |
|-----------------|---------|---------------|
| phenolphthalein | 77-09-8 | 2020-07-14    |

### New Jersey Right To Know Components

|                 | CAS-No. | Revision Date |
|-----------------|---------|---------------|
| phenolphthalein | 77-09-8 | 2020-07-14    |

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## 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](http://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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