

According to the UN GHS revision 8

Creation Date: April 23, 2026

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## 1. IDENTIFICATION

### 1.1 GHS Product identifier

Product name: Phthalic acid

Catalog Number: T5603

CAS Number: 88-99-3

### 1.2 Other means of identification

Other names: -

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses:

### 1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Address: 34 Washington Street, Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

### 1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone: UTC/GMT -5 hours).

## 2. HAZARD IDENTIFICATION

### 2.1 Classification of the substance or mixture

Serious eye damage, Category 1

### 2.2 GHS label elements, including precautionary statements

Pictogram(s):



Signal word: Danger

Hazard statement(s): H318 Causes serious eye damage

Precautionary statement(s):

**Prevention:** P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

**Response:** P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P317 Get medical help.

**Storage:** none

**Disposal:** none

### 2.3 Other hazards which do not result in classification

no data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Phthalic acid	-	88-99-3	201-873-2

### 4. FIRST-AID MEASURES

#### 4.1 Description of necessary first-aid measures

**General advice**

no data available

**If inhaled**

Fresh air, rest.

**Following skin contact**

Rinse and then wash skin with water and soap.

**Following eye contact**

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

**Following ingestion**

Rinse mouth.

#### 4.2 Most important symptoms/effects, acute and delayed

Inhalation Exposure: Fresh air, rest. Skin Exposure: Remove contaminated clothes. Rinse and then wash skin with water and soap. Eye exposure: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor. Ingestion: Rinse mouth.

#### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

**SYMPTOMS:** Symptoms of exposure to this compound may include irritation of the skin, eyes, mucous membranes, and respiratory passages. In high concentrations, it can cause narcosis. **ACUTE/CHRONIC HAZARDS:** This compound is an irritant of the skin, eyes, mucous membranes, and respiratory tract. It is narcotic in high concentrations. When heated, it decomposes to a compound which in the form of dust is an explosion hazard. Hazardous decomposition products include carbon oxides. (NTP, 1992)

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

Powder, water spray, foam, carbon dioxide.

#### 5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

#### 5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

#### 6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

#### 6.3 Methods and materials for containment and cleaning up

Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting (extra personal protection: P1 filter respirator for inert particles).

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

NO open flames. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

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

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Occupational Exposure limit values

no data available

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear safety spectacles.

#### Skin protection

Protective gloves.

#### Respiratory protection

Use local exhaust.

#### Thermal hazards

no data available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	White
Odour	no data available
Melting point/freezing point	191 °C. Atm. press.:1 013 hPa.
Boiling point or initial boiling point and boiling range	289 °C. Atm. press.:1 013 hPa.
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	168 °C.
Auto-ignition temperature	no data available
Decomposition temperature	191°C
pH	no data available

<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	DMSO: 27.5 mg/mL (165.53 mM),Sonication is recommended. ( $< 1$ mg/ml refers to the product slightly soluble or insoluble)
<b>N-octanol-water partition coefficient</b>	$\log P_{ow} = 0.73$ .
<b>Vapour pressure</b>	0 hPa. Temperature:25 °C. Remarks:Antoine Method.;0 hPa. Temperature:25 °C. Remarks:Modified Grain Method.;0 hPa. Temperature:25 °C. Remarks:Mackay Method.
<b>Density and/or relative density</b>	1.59 g/cm <sup>3</sup> at 15°C
<b>Relative vapour density</b>	5.73 (AIR= 1)
<b>Particle characteristics</b>	no data available

### 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity

The solution in water is a weak acid.

#### 10.2 Chemical stability

no data available

#### 10.3 Possibility of hazardous reactions

Combustible when heated.Dust explosion possible if in powder or granular form, mixed with air.PHTHALIC ACID is a carboxylic acid. This chemical is sensitive to exposure to extreme heat. This compound reacts violently with nitric acid. It is incompatible with sodium nitrite. It is also incompatible with oxidizers. (NTP, 1992).

#### 10.4 Conditions to avoid

no data available

#### 10.5 Incompatible materials

Mixtures of sodium nitrite and phthalic acid or phthalic anhydride explode violently on heating. A nitrite ester may have been produced.

#### 10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Oral: LD50 - mouse (male/female) -  $> 5\ 000$  mg/kg bw.  
Inhalation: LC50 - rat (male/female) -  $> 5\ 058$  mg/m<sup>3</sup> air.  
Dermal: no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/irritation

no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

no data available

#### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

### STOT-repeated exposure

no data available

### Aspiration hazard

A nuisance-causing concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish: LC50 - Danio rerio (previous name: Brachydanio rerio) - 560 mg/L - 7 d.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - > 640 mg/L - 48 h.

Toxicity to algae: EC0 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - >= 100 mg/L - 72 h.

Toxicity to microorganisms: EC50 - Pseudomonas putida - 213 mg/L - 16 h.

### 12.2 Persistence and degradability

AEROBIC: After an acclimation of an activated sludge inoculum for 24 days, 95% of phthalate was consumed in a respiratory test(1).

Phthalic acid completely degraded in 2 days in a screening test using a soil inoculum(2). Over 99% primary degradation was obtained in the semicontinuous activated sludge test of the Soap and Detergent Association(3). Degradation by some microorganisms is impeded when phthalic acid is adsorbed on particles such as aluminum oxide(4). Five day BOD studies have shown 78% degradation of phthalic acid(5). A biodegradation rate constant for phthalic acid of 1.56/day was measured in river water corresponding to a half life of 10.7 hrs (6). A half life of 2 days was measured in sludge amended soil(7). Phthalic acid rapidly degraded in Chalmers soil (1.96% organic carbon, pH 6.0); 100% decomposition, as determined by CO<sub>2</sub> evolution, was obtained after 53 days(8). In a river die-away test using water from the Mississippi River at St Louis, phthalic acid completely disappeared in 2.5 and 5 wks at concns of 12.5 and 50 mg/L, respectively(9). In another river die-away test using Missouri River water and carboxyl-labeled <sup>14</sup>C-phthalic acid, 66-92% mineralization was obtained in 32 days(10). Bacteria that grew aerobically on phthalic acid were found in sediment and water from the estuary of the Mississippi River indicating the potential for phthalic acid biodegradation in the marine environment(11).

### 12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for phthalic acid(SRC), using a log K<sub>ow</sub> of 0.73(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

### 12.4 Mobility in soil

The K<sub>oc</sub> values were determined for an acidic forest soil (Podzol, 4.85% organic carbon, pH 2.8), an agricultural soil (Alfisol, 1.25% organic carbon, pH 6.7) and a sublimnic soil (sediment from Lake Constance, Germany, 1.58% organic carbon, pH 7.1) as 31, 2 and 2, respectively (1). According to a classification scheme(2), these K<sub>oc</sub> values suggest that phthalic acid is expected to have very high mobility in soil. Phthalic acid adsorbs strongly to aluminum and iron oxides via a surface ligand exchange reaction(3). Adsorptivity is sensitive to pH; for aluminum oxide the fraction absorbed is >0.8 below pH 6 and falls below 0.1 above pH 7.5(3).

### 12.5 Other adverse effects

no data available

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

## 14. TRANSPORT INFORMATION

### 14.1 UN Number

no data available

### 14.2 UN Proper Shipping Name

no data available

### 14.3 Transport hazard class(es)

no data available

### 14.4 Packing group, if applicable

no data available

### 14.5 Environmental hazards

no data available

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

## 16. OTHER INFORMATION

### Information on revision

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>  
HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>  
IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>  
eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)  
CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>  
ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

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ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

no data available

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