

Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

1 - Product and Company Information

Product Name	PHTHALIC ANHYDRIDE, 99+%, A.C.S. REAGENT
Product Number	320064
Company	Sigma-Aldrich Pte., Ltd. Pasir Panjang Road 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no
PHTHALIC ANHYDRIDE	85-44-9	201-607-5
Formula	C8H4O3	
Molecular Weight	148.12 AMU	
Synonyms	Anhydride phtalique (French) * Anhydrid kyseliny ftalove (Czech) * Anidride ftalica (Italian) * 1,2-Benzenedicarboxylic acid anhydride * 1,3-Dioxophthalan * ESEN * Ftaalzuuranhydride (Dutch) * Ftalanhydrid (Czech) * Ftalowý bezwodnik (Polish) * Isobenzofuran, 1,3-dihydro-1,3-dioxo- * 1,3-Isobenzofurandione * NCI-C03601 * Phthalandione * 1,3-Phthalandione * Phthalic acid anhydride * Phthalic anhydride (ACGIH:OSHA) * Phthalsaeureanhydrid (German) * RCRA waste number U190 * Retarder AK * Retarder PD * Vulkalent B	

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Harmful if swallowed. Irritating to respiratory system and skin.
Risk of serious damage to eyes. May cause sensitization by inhalation and skin contact.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.
Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of

water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	1 MG/M3
Poland		NDSCh	2 MG/M3
Poland		NDSP	-

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	1 mg/m3

EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	1 mg/m3, E

Remarks: =1=

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	2 mg/m3

Remarks: A

EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level)	2 mg/m3

Remarks: S

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	4 mg/m3
OEL	STEL	12 mg/m3

Remarks: Sensitizer.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Solid Color: White Form: Fine plates	
Property	Value	At Temperature or Pressure
pH	2	20 °C Concentration: 6 g/l
BP/BP Range	284 °C	760 mmHg
MP/MP Range	130 °C	
Flash Point	152 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	570 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 1.7 % Upper: 10.4 %	
Vapor Pressure	< 0.01 mmHg	20 °C
SG/Density	1.53 g/cm3	20 °C
Partition Coefficient	N/A	
Viscosity	1.3 Pas	140 °C
Vapor Density	5.1 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	32.7 mN/m	180 °C
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: 5 mg/ml H2O	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Protect from moisture.

Materials to Avoid: Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: TI3150000

ACUTE TOXICITY

LD50

Oral

Rat

1530 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity).

LC50

Inhalation

Rat

> 210 mg/m3

1H

LD50

Oral

Mouse

1500 mg/kg

LD50

Oral

Cat

800 mg/kg

LD50

Skin

Rabbit

> 10000 mg/kg

LD50

Intraperitoneal

Guinea pig

100 MG/KG

IRRITATION DATA

Skin

Rabbit

500 mg

24H

Remarks: Mild irritation effect

Eyes

Rabbit

50 mg

MOD

Remarks: Moderate irritation effect

SENSITIZATION

Sensitization: May cause allergic respiratory and skin reactions

SIGNS AND SYMPTOMS OF EXPOSURE

Prolonged exposure can cause: Damage to the liver. Damage to the kidneys. Exposure to and/or consumption of alcohol may increase toxic effects. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes severe eye irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: Harmful if swallowed.

TARGET ORGAN INFORMATION

Kidneys. Liver.

CHRONIC EXPOSURE - MUTAGEN

Rat

3 MMOL/L

Cell Type: liver

DNA damage

CHRONIC EXPOSURE - TERATOGEN

Species: Mouse

Dose: 203 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (8-10D PREG)

Result: Specific Developmental Abnormalities: Other developmental abnormalities.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat

Dose: 1 MG/M3

Route of Application: Inhalation

Exposure Time: (45D MALE)

Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

12 - Ecological Information

ECOTOXICOLOGICAL EFFECTS

Test Type: EC50 Algae

Species: Selenastrum capricornutum resp.

Time: 96 h

Value: 60 - 350 mg/l

Test Type: LC50 Fish

Species: Onchorhynchus mykiss (Rainbow trout)

Time: 60 d

Value: 44.4 - 48.30 mg/l

Test Type: LC0 Fish

Species: Onchorhynchus mykiss (Rainbow trout)

Time: 48 h

Value: 5 mg/l

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 2214

Class: 8

PG: III

Proper Shipping Name: Phthalic anhydride

IMDG

UN#: 2214

Class: 8

PG: III

EmS Number: 8-05

MFAG Number: 700

Proper Shipping Name: Phthalic anhydride

Marine Pollutant: No

Severe Marine Pollutant: No

IATA

UN#: 2214

Class: 8

PG: III

Proper Shipping Name: Phthalic anhydride

Inhalation Packing Group I: No

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn

Harmful.

R-PHRASES: 22 37/38 41 42/43

Harmful if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. May cause sensitization by inhalation and skin contact.

S-PHRASES: 23 24/25 26 37/39 46

Do not breathe spray. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. If swallowed, seek medical advice immediately and show this container or label.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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