SAFETY DATA SHEET

according to 1907/2006/EC, Article 3

Version no. : 2.1
Prepared on : 30.03.2019
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SECTION 1: Identification of the substance/mixture and of the company/undertaking.

1.1 Product identifiers

Product name	Phthalic Anhydride
Product Number	PSR50107
Brand	PureSynth research chemicals
CAS No.	85-44-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Standard

1.3 Details of the supplier of the safety data sheet

Company **PureSynth Research Chemicals GmbH.**

64683 Einhausen Marie-Curie-StraBe. 3, Germany

1.4 Emergency telephone number

Worldwide Helpline No.: 1800-8908-260

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Acute toxicity, Category 4 H302: Harmful if swallowed.
Skin irritation, Category 2 H315: Causes skin irritation.
Serious eye damage, Category 1 H318: Causes serious eye damage.
Respiratory sensitisation, Category 1 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, Category 3, Respiratory system H335: May cause respiratory irritation.

2.2 Label elements

Pictogram

Signal word Danger

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements	none

Other hazards: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition / information on ingredients

3.1 Substances

Common names & Synonyms	Mol. formula	CAS number
phthalic acid anhydride	$C_8H_4O_3$	85-44-9
Component	**Classification**	**Concentration**
phthalic acid anhydride	No data available	>= 90 - <= 100

SECTION 4: First aid measures

Description of first aid measures

General advice	First aiders need to protect themselves. Show this 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. Immediately call in ophthalmologist. Remove contact lenses.
If swallowed	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
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
Indication of any immediate medical attention and special treatment needed	No data available

SECTION 5: Fire fighting measures

Extinguishing media

Suitable extinguishing media	Carbon dioxide (CO2), Dry powder
Unsuitable extinguishing media	Foam, Water
Special hazards arising from the substance or mixture	Combustible. May not get in touch with: Water Caution! in contact with water product releases: Organic acids Vapours 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. Hazardous combustion products: Carbon oxides
Advice for fire-fighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Environmental precautions	Do not let product enter drains.
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.
Reference to other sections	For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling	Advice on safe handling- Keep workplace dry. Do not allow product to come into contact with water. 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.
Conditions for safe storage, including any incompatibilities	Storage conditions- Tightly closed. Dry. Keep locked up or in an area accessible only to qualified or authorised persons. Storage stability- Recommended storage temperature: Room Temperature Storage class- (TRGS 510): 8A: Combustible, corrosive hazardous materials
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

Control parameters	Occupational Exposure Limits
Exposure controls	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). Tightly fitting safety goggles.
Skin protection	Protective clothing
Body Protection	Protective clothing Hand Protection: Material : Nitrile rubber Break through time : 480 min Glove thickness : 0.11 mm Protective index : Full contact Material : Nitrile rubber Break through time : 480 min Glove thickness : 0.11 mm Protective index : Splash contact
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. Recommended Filter type: : Filter A-(P2) The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.
Control of environmental exposure	Do not let product enter drains.

SECTION 9: Physical and chemical properties

Appearance	Form: Solid Colour: Colourless
Odour	No data available
pH - Value	2 (20 °C) Concentration: 6 g/l
Density	1.53 g/cm3 (20 °C)
Boiling Point	284 °C (1.013 hPa)
Melting Point	131.6 °C
Solubility in water	16.400 g/l (20 °C) soluble
Flash point	152 °C
Vapour pressure	0.001 hPa (26,6 °C)
Auto -ignition temperature	570 °C
Vapour density	No data available
Flammability (solid, gas)	No data available
Evaporation rate	No data available
Partition coefficient: n- octanol / water	log Pow: 1.6 Bioaccumulation is not expected.
Viscosity	Viscosity, dynamic : 1.125 mPa.s (155 °C) Viscosity, kinematic : No data available
Explosive properties	Not classified as explosive.
Upper / lower flammability or explosive limits	Upper flammability limit- 10.4 %(V) Lower flammability limit- 1.7 %(V)
Oxidizing properties	None
Other safety information:	Oxidizing properties: None Self-ignition: 580 °C Surface tension: 32.7 mN/m, 180 °C

SECTION 10: Stability and reactivity

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.
Chemical stability	The product is chemically stable under standard ambient conditions (room temperature).
Possibility of hazardous reactions	Violent reactions possible with: Strong acids, Organic acids, strong reducing agents, alkali hydroxides, Alcohols, Air Exothermic reaction with: Water, metals (in the presence of atmospheric oxygen and/or moisture) Risk of explosion with: metallic oxides, Oxidizing agents, Nitric acid, glycerol
Condition to avoid	Strong heating.
Incompatible materials	No data available
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11: Toxicological information

Acute toxicity	LD50 Oral - Rat - male - 1530 mg/kg Remarks: (ECHA) Acute toxicity estimate Oral - 1530 mg/kg (ATE value derived from LD50/LC50 value)

	LC50 Inhalation - Rat - male and female - 4 h - > 2.14 mg/l - aerosol (OECD Test Guideline 403) LD50 Dermal - Rabbit - > 3160 mg/kg Remarks: (ECHA)
Skin corrosion/irritation	Skin - Rabbit Result: Irritating to skin. - 24 h Remarks: (ECHA)
Serious eye damage/eye irritation	Eyes - Rabbit Result: Causes serious eye damage. - 7 d Remarks: (ECHA)
Respiratory or skin sensitization	Maximisation Test - Guinea pig Result: positive (OECD Test Guideline 406) in vivo assay - Guinea pig Result: positive Remarks: (ECHA)
Germ cell mutagenicity	Test Type: Ames test Test system: Escherichia coli/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 lung 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 ovary cells Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: sister chromatid exchange assay Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: Intraperitoneal Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	Inhalation - May cause respiratory irritation. - Respiratory Tract.
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Repeated dose toxicity - Rat - male and female - Oral - 105 Weeks - No observed adverse effect level - 500 mg/kg Remarks: (ECHA)

Prolonged or repeated exposure can cause:, Liver injury may occur., Kidney injury may occur., 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.
Decomposition of the substance with tissue moisture.
Systemic effects: gastric pain, Nausea, Vomiting, Headache
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

Toxicity

Toxicity to fish	LC50 (Oryzias latipes): > 99 mg/l End point: mortality Exposure time: 96 h Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)): 71 mg/l End point: Immobilization Exposure time: 48 h Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae/aquatic plants	ErC50 (Pseudokirchneriella subcapitata): 68 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	EC50 (activated sludge): > 1000 mg/l Exposure time: 3 h Method: ISO 8192 EC50 (Pseudomonas putida): 213 mg/l Exposure time: 16 h Method: ISO 10712
Toxicity to fish (Chronic toxicity)	NOEC: 10 mg/l Exposure time: 60 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: semi-static test Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	EC50: 42 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: Reproduction Test Method: OECD Test Guideline 211 GLP: yes NOEC: 16 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: Reproduction Test Method: OECD Test Guideline 211 GLP: yes
Persistence and degradability	Biodegradability: Test Type: Biotic/Aerobic Inoculum: activated sludge Concentration: 100 mg/l Result: Readily biodegradable. Biodegradation: 85 % Exposure time: 14 d Method: OECD Test Guideline 301 GLP: yes
Bio accumulative potential	Partition coefficient: n-octanol/water:

	log Pow: 1.6 Remarks: Bioaccumulation is not expected
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine disrupting properties	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Other adverse effects	Additional ecological information: Discharge into the environment must be avoided. Harmful effect due to pH shift. Biological effects

SECTION 13: Disposal considerations

Waste treatment methods products	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.

SECTION 14: Transport information

	UN no.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR / RID	UN 2214	PHTHALIC ANHYDRIDE	8	III	No
IMDG	UN 2214	PHTHALIC ANHYDRIDE	8	III	No
IATA	UN 2214	Phthalic anhydride	8	III	No

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	:	Not applicable

Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

The information in this SDS 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. The user must be determined suitability of this information for his application.