



PACHEM GLOBAL PVT LTD

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Laboratory & Quality control	Material Safety Data Sheet	Document #	PACHEM/QCL/PA/MSDS
Material Name	PHTHALIC ANHYDRIDE (FLAKE)	Prepare by: LAB INCHARGE	Issue date: 17-7-2021 Revision: 1.0

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

MATERIAL NAME

PHTHALIC ANHYDRIDE - FLAKE

SYNONYMS

PHTHALIC ANHYDRIDE SOLID

CHEMICAL FAMILY

Aromatic, Carboxylic, Anhydrides

PRODUCT USE

Used in the manufacture of plasticizers, polyester and alkyd resins, dye intermediates, food preservatives, pharmaceuticals, insect repellants and perfume fixatives.

RESTRICTIONS ON USE

None known.

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

PACHEM Global (Pvt) Limited
Plot#25, Phase 1, M-3 Industrial City
Faisalabad, PAKISTAN.

CLASSIFICATION IN ACCORDANCE WITH PARAGRAPH (D) OF 29 CFR 1910.1200.

- Combustible Dust
- Acute Toxicity - Oral - Category 4 Skin Corrosion/Irritation - Category 2
- Serious Eye Damage/Eye Irritation Category 1 Respiratory Sensitization - Category 1
- Skin Sensitization - Category 1
- Specific target organ toxicity - Single exposure - Category 3 (respiratory system.)

GHS LABEL ELEMENTS SYMBOL (S)



SIGNAL WORD

- Danger

HAZARD STATEMENT(S)

- May form combustible dust concentration in air. Harmful if swallowed.
- Cause Skin Irritation.
- Causes serious eye damage.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.



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- May cause respiratory irritation.

PRECAUTIONARY STATEMENT(S) PREVENTION

- Avoid breathing dust.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product. Wear protective gloves and eye/face protection.
- Wear respiratory protection.
- Contaminated work clothing should not be allowed out of the workplace. Use only outdoors or in a well-ventilated area.

RESPONSE

- **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. **IF ON SKIN:** Wash with plenty of water.
- If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
- **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor/physician.
- **IF SWALLOWED:** Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

STORAGE

- Store in a well-ventilated place. Keep container tightly closed. Store locked up.

DISPOSAL

- Dispose of contents/container in accordance with local/regional/national/international regulations.

OTHER HAZARDS

- None known.

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Compound Name	Percent
85-44-9	Phthalic Anhydride	>99.7
85-41-6	Phthalimide	<0.2
88-99-3	Phthalic Acid	<0.1
65-85-0	Benzoic Acid	<0.05
108-31-6	Maleic Anhydride	<0.05



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SECTION 3 - FIRST AID MEASURES

INHALATION

- If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN

- Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

EYES

- Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

INGESTION

- Do NOT induce vomiting. If a large amount is swallowed, get medical attention. Never make an unconscious person vomit or drink fluids. If vomiting occurs, keep head lower than hips to help prevent aspiration. Rinse mouth.

MOST IMPORTANT SYMPTOMS/EFFECTS ACUTE

- Harmful if swallowed, respiratory tract irritation, skin irritation, eye burns, allergic reactions

DELAYED

- Allergic Reactions

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

- Treat symptomatically and supportively.

SECTION 4 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA SUITABLE EXTINGUISHING MEDIA

- carbon dioxide, regular dry chemical, dry sand, alcohol-resistant foam, water spray, fog or mist

UNSUITABLE EXTINGUISHING MEDIA

- None known.

SPECIAL HAZARDS ARISING FROM THE CHEMICAL



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- Dust/air mixtures may ignite or explode. Minimum dust concentration required is 0.015 oz/ft³. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

HAZARDOUS COMBUSTION PRODUCTS

- Oxides of carbon; Release of phthalic acid in contact with water.

FIRE FIGHTING MEASURES

- Move container from fire area if it can be done without risk. Use extinguishing agents appropriate for surrounding fire. Large fires: flood with fine water spray. Directly spraying water or foam onto hot burning product may cause frothing. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Keep unnecessary people away, isolate hazard area and deny entry.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

- Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

SECTION 5- ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

- Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING

- Do not touch spilled material. Stop leak, if possible, without personal risk. If sweeping of a contaminated area is necessary, use a dust suppressant agent. Collect spill using a vacuum cleaner with a HEPA filter or wet and scoop up dry spills. Avoid sweeping spilled dry material. Eliminate ignition sources including sources of electrical, static or frictional sparks. Collect spilled material in appropriate container for disposal. Do not get water directly on material. In Canada, report releases to provincial authorities, municipal authorities, or both, as required. If this product is spilled or leaked into the environment, the CERCLA (40 CFR 302.4) reportable quantity is 5000 pounds, and requires National Response Center notification.

SECTION 6- HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

- Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear suitable protective gloves and eye/face protection. Wear respiratory



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protection. Contaminated work clothing must not be allowed out of the workplace. Use only outdoors or in a well-ventilated area. Use methods to minimize dust. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- Store in a well-ventilated place. Keep container tightly closed. Store locked up.
- Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store in a cool, dry place. Avoid contact with water or moisture. Avoid heat, flames, sparks and other sources of ignition.
- Keep separated from incompatible substances.

INCOMPATIBLE MATERIALS

- Amines, bases, metal oxides, metals, oxidizing materials, combustible materials

SECTION 7- EXPOSURE CONTROLS / PERSONAL PROTECTION

COMPONENT EXPOSURE LIMITS

Phthalic anhydride	85-44-9
ACGIH:	0.002 mg/m ³ TWA inhalable fraction and vapor
	0.005 mg/m ³ STEL inhalable fraction and vapor
	Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA (US):	2 ppm TWA ; 12 mg/m ³ TWA
Maleic anhydride	108-31-6
ACGIH:	0.01 mg/m ³ TWA inhalable fraction and vapor
OSHA (US):	0.25 ppm TWA ; 1 mg/m ³ TWA

ACGIH - THRESHOLD LIMIT VALUES - BIOLOGICAL EXPOSURE INDICES (BEI)

- There are no biological limit values for any of this product's components.

ENGINEERING CONTROLS

- Ensure adequate ventilation. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, a processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Ensure compliance with applicable exposure limits.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT EYE/FACE PROTECTION

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- ANSI Z87.1-1989 approved safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

SKIN PROTECTION

- Wear appropriate clothing.

RESPIRATORY PROTECTION

- If the applicable TLVs and/or PELs are exceeded, use canister or cartridge respirators, which are MSHA/NIOSH- approved, with high-efficiency particulate filters.

GLOVE RECOMMENDATIONS

- Wear appropriate gloves. Protective Materials Rubber

SECTION 8- PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white flake	Physical State	solid
Odor	acid odor	Color	white
Odor Threshold	0.32 - 0.72mg/m ³	pH	1.37 - 1.94 at 95 °C
pH Solution	2 - 15 g/L	Melting Point	131 °C
Boiling Point	284 °C	Boiling Point Range	Not available
Freezing point	Not available	Evaporation Rate	Not available
Flammability (solid, gas)	Not flammable	Autoignition Temperature	570 °C
Flash Point	151 °C Closed Cup	Lower Explosive Limit	1.7 %
Decomposition temperature	Not available	Upper Explosive Limit	10.4 %
Vapor Pressure	0.001 mmHg @ 30 °C	Vapor Density (air=1)	5.1
Specific Gravity (water=1)	1.527 at 4 °C	Water Solubility	0.62 % @ 20 °C (Room temperature, Insoluble)
Partition coefficient: n-octanol/water	Not available	Viscosity	6.4 mPa.s 197 °C



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Kinematic viscosity	Not available	Solubility (Other)	Not available
Bulk Density	1.53 lb/gal	Density	Not available
KSt-value (bar x m/s)	166 bar/m/s	Physical Form	flake
Sublimation	295 °C	Molecular Formula	C6-H4-(C-O)2-O
Molecular Weight	148.12	Minimum Explosive Concentration	30 g/m ³
Minimum Ignition Temperature	650 °C	Maximum explosion pressure	6.6 bar
Maximum Rate of Pressure Rise	613 bar		

SOLVENT SOLUBILITY SOLUBLE

- alcohol, carbon disulfide

SLIGHTLY SOLUBLE

- ether

SECTION 9- STABILITY AND REACTIVITY**CHEMICAL STABILITY**

- May decompose on contact with water or moist air.

POSSIBILITY OF HAZARDOUS REACTIONS

- Will not polymerize.

CONDITIONS TO AVOID

- Avoid accumulation of airborne dusts. Avoid contact with water or moisture. Keep out of water supplies and sewers.



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- amines, bases, metal oxides, metals, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION PRODUCTS

- Carbon monoxide, carbon dioxide. Release of phthalic acid in contact with water.

SECTION 10- TOXICOLOGICAL INFORMATION**INFORMATION ON LIKELY ROUTES OF EXPOSURE INHALATION**

- irritation, allergic reactions

SKIN CONTACT

- irritation, allergic reactions

EYE CONTACT

- burns

INGESTION

- Harmful if swallowed

ACUTE AND CHRONIC TOXICITY COMPONENT ANALYSIS - LD50/LC50

- The components of this material have been reviewed in various sources and the following selected endpoints are published
- **Phthalic anhydride (85-44-9)** Oral LD50
- Rat 1530 mg/kg Dermal LD50
- Rabbit >10 g/kg
- Inhalation LC50 Rat >210 mg/m³ 1 h

PRODUCT TOXICITY DATA ACUTE TOXICITY ESTIMATE

Oral	1528.09 mg/kg
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IMMEDIATE EFFECTS

- Harmful if swallowed, respiratory tract irritation, skin irritation, eye burns, allergic reactions



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DELAYED EFFECTS

- allergic reactions

IRRITATION/CORROSIVITY DATA

- respiratory tract irritation, skin irritation, eye burns

RESPIRATORY SENSITIZATION

- Component data indicate the substance is sensitizing.

DERMAL SENSITIZATION

- Component data indicate the substance is sensitizing.

Phthalic anhydride	85-44-9
ACGIH:	A4 - Not Classifiable as a Human Carcinogen

Germ Cell Mutagenicity

- invitro genotoxicity:
negative.

TUMORIGENIC DATA

- No data available

REPRODUCTIVE TOXICITY

- No data available.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE

- No data available.

Aspiration Hazard

- Not expected to be an aspiration hazard.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

- Skin disorders, immune system disorders or allergies



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Component Analysis - Aquatic Toxicity

- No LOLI ecotoxicity data are available for this product's components.

PERSISTENCE AND DEGRADABILITY

- Relatively non-persistent in the environment.

BIOACCUMULATIVE POTENTIAL

- Accumulates very little in the bodies of living organisms.

MOBILITY

- Not expected to leach through the soil or the sediment.

SECTION 11- ECOLOGICAL INFORMATION

COMPONENT ANALYSIS - AQUATIC TOXICITY

- No LOLI ecotoxicity data are available for this product's components.

PERSISTENCE AND DEGRADABILITY

- Relatively non-persistent in the environment.

BIOACCUMULATIVE POTENTIAL

- Accumulates very little in the bodies of living organisms.

MOBILITY

- Not expected to leach through the soil or the sediment.

DISCLAIMER:

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereo

