



### SAFETY DATA SHEET

**Product: PHTHALIC ANHYDRIDE**  
**Registration No: 01 – 2119457017 - 41 - 0010**

**Revision: 00**

**Date: 12 /28/2010**

**Pages: 1 /11**

#### 1- IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

##### Identification of the substance:

**Product name: PHTHALIC ANHYDRIDE**

**Use of the substance:**

1. Used as an Intermediate in the production of bulk, large-scale chemicals (including petroleum products),
2. Used as a Monomer in the manufacture of resins, rubbers and polymers.
3. Used as Laboratory reagent for manufacturing laboratory chemicals.
4. Manufacture of fine chemicals.
5. For industrial uses: uses of substances as such or in preparations.
6. Formulation of preparations and/or re-packaging (excluding alloys).

##### Supplier identification

**Company:** Thirumalai chemicals Limited  
**Address:** No-25B Sipcot Industrial Complex  
Ranipet - 632 403. Tamil Nadu, India  
**Telephone:** +91-4172-244441 / 244442 / 244446  
**Fax:** +91-4172-244308  
**Email:** [yuvaraj@mktg.thirumalaichemicals.com](mailto:yuvaraj@mktg.thirumalaichemicals.com)

#### 2- HAZARDS IDENTIFICATION

**Most important hazards:** Harmful if swallowed. Irritating to respiratory system and skin.  
Risk of serious eye damage.

##### Product effects

**Adverse human health effects:**

May cause burns to skin, eyes and gastrointestinal tract. May cause irritation to the respiratory tract and allergic reactions by inhalation and skin contact.



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**Environmental effects:** May cause damage to the environment due to acid pH.

**Physical and chemical hazards:** When in contact with water it forms Phthalic Acid. May produce acid smoke and fumes if burning.

**Specific hazards:** Not applicable.

**Main symptoms:** Skin and mucous membranes burns. Redness, tearing and eye pain. Cough, sore throat, difficulty breathing, nausea, burning sensation and abdominal pain.

**Classification of the chemical product:**

**Classification system adopted:** European Chemical Bureau – European Community: Directive 67/548/EEC (substances).

**Hazard Class and Category:** Acute toxicity (oral)  
Respiratory and skin sensitization  
Serious eye damage  
Respiratory and skin irritation

**Risk Phrases:** R22: Harmful if swallowed.  
R37/38: Irritating to respiratory system and skin.  
R41: Risk of serious damage to eyes.  
R42/43: May cause sensitization by inhalation and skin contact.

**Classification system adopted:** REGULATION (EC) No 1272/2008 of the European Parliament and of the Council, of 16 December 2008.

**Hazard Class and Category:** Acute toxicity (oral) - Category 4  
Specific target organ toxicity — Single exposure - Category 3, Respiratory tract irritation  
Skin irritation - Category 2  
Serious eye damage - Category 1  
Sensitization — Respiratory - Category 1  
Sensitization — Skin - Category 1

**Hazard statements:** 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



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**if inhaled**  
**H335: May cause respiratory irritation**

**3- COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Substance name:</b>	<b>PHTHALIC ANHYDRIDE</b>
<b>Chemical formula:</b>	<b>C<sub>8</sub>H<sub>4</sub>O<sub>3</sub></b>
<b>Synonym:</b>	<b>Anhydride of Phthalic Acid, Anhydride of Acid 1,2 Benzene Di-Carboxylic.</b>
<b>Concentration:</b>	<b>More than 99.8 % (w/w)</b>
<b>CAS Number:</b>	<b>85-44-9</b>
<b>EINECS number:</b>	<b>201-607-5</b>

**4- FIRST-AID MEASURES**

<b>Exposure routes</b>	
<b>Inhalation:</b>	<b>Remove to fresh air and keep at rest. Monitor respiratory function. If breathing is difficult, give oxygen. If necessary, give artificial respiration. Seek medical attention.</b>
<b>Skin contact:</b>	<b>Remove contaminated clothing and shoes. Wash with plenty of soap and water. Seek medical attention.</b>
<b>Eye contact:</b>	<b>Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.</b>
<b>Ingestion:</b>	<b>Rinse mouth of victim with plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical</b>



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**attention.**

**Protection of first-aiders and/or special notes to a physician:**

**Avoid contact with this product while helping the victim; keep the victim warmed. Symptomatic treatment should include above said notes.**

**5- FIRE-FIGHTING MEASURES**

**Flash point: 151Deg C**

**Auto ignition: 580 Deg C**

**Lower explosion limit: 1.7 % (V)**

**Upper explosion limit: 10.5 % (V)**

**Special Hazards: Combustible material. May form flammable/explosive Vapour air mixture.**

**Extinguishing agents: Carbon di oxide (CO2), Foam, dry powder, Sand for small fires.  
For larger fires use water jet or alcohol resistant foam.**

**Protective equipment: In case of fire use self contained breathing apparatus and chemical protective suit**

**6- ACCIDENTAL RELEASE MEASURES**

**Personal precautions: Remove ignition sources. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin and eyes.  
Use protective gloves, safety goggles and protective clothing.**

**Environmental precautions: Prevent from entering into watercourses, sewage and confined areas.**

**Cleaning up methods:**

**Collect with a clean shovel, put in clean and dry vessels and cover them. Remove them from the spilling area.**

**Appropriate containment techniques:**

**Neutralize traces of residues or very little spills that remained over the soil with sodium carbonate or bicarbonate and water, or alkaline substances.**

**Appropriate clean up**

**Discard any product, waste, container or wrapper available in an**



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**procedures:** appropriate manner as not to harm the environment, according to regulations, state and local.

**Inappropriate containment or clean up techniques:** Do not discard directly in the environment or the sewage network.

**7- HANDLING AND STORAGE**

**Appropriate technical measures for handling**

**Precautions for safe handling:**

Avoid inhalation, contact with skin and eyes. Do not handle near incompatible materials. Use proper personal protective equipment as indicated in Section 8.

**Hygiene measures:**

Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wash hands before eating, drinking, smoking or going to the toilet. Take off all contaminated clothing and wash before reuse.

**Appropriate technical measures for storage**

**Conditions for safe storage:**

Keep in original container, in a cool, dry, well ventilated place. Keep away from food. Store locked up. Keep out of reach of children. Avoid static electricity discharges.

**Conditions for safe storage:**

Solid: should be stored in covered area, signalized, well ventilated and protected from the sun and from ignition sources.

**Incompatible products:**

Alkaline materials, oxidizers and strong acids. Copper oxide, nitric acid and sulfuric acid, sodium nitrite.

**Packaging compatibilities**

**Recommended use:**

Milky polyethylene bags of 180 g/m<sup>2</sup>



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**8- EXPOSURE CONTROLS/PERSONAL PROTECTION**

Exposure limit values:	Substance	TLV – TWA (ACGIH)	REL – TWA (NIOSH)	PEL - TWA (OSHA)
		(ppm)	(ppm)	(ppm)
	Phthalic Anhydride	1	1	2

**Exposure controls:**

**Engineering controls measures:**

The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. It is recommended safety shower and eye bath available near work side. Compressed air lines used for respiratory protection should be provided with purifiers. Engineering controls are the most effective way of reducing product exposure.

**Personal protective equipment:**

**Eye/face protection:**

Protective safety goggles.

Protective clothing. Safety leather shoes with rubber impermeable sole.

**Skin/body protection:**

Latex or PVC gloves. Overalls of single canvas with long sleeves and hood.

**Respiratory protection:**

Full face piece respirator for organic vapors. In cases of high potential of exposure use a supplied-air respirator, full facepiece, operated in positive-pressure mode.

**Special precautions:**

Avoid wear contact lenses while using this product.

**Hygiene measures:**

Do not eat, drink or smoke while using this product. Wash hands before eating, drinking, smoking or going to the toilet. Take off all contaminated clothing and wash before reuse.



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**9- PHYSICAL AND CHEMICAL PROPERTIES**

**General information:**

**Physical state:** Flakes

**Colour:** White

**Odour:** Mild characteristic

**Important health, safety and environmental information:**

**Boiling point:** 284°C

**Flash point:** 152°C (closed cup)  
165°C (open cup)

**Vapour pressure:** 0.00052 mm Hg @ 25 °C

**Density:** 1.527 at 20°C

**Solubility in water (g/ltr):** 6.2 at 25°C

**Molecular weight** 148.12

**Vapour Density (air=1)** 5.1



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**Reactivity: Hydrolysis in water**

**Melting point: 131°C**

**Refraction index: 1.5744 at 155°C**

**10- STABILITY AND REACTIVITY**

**Stability: Stable under normal conditions of storage and handling. Polymerization will not occur.**

**Incompatible materials: Alkaline materials, oxidizers and strong acids. Copper oxide, nitric acid and sulfuric acid, sodium nitrite.**

**Hazardous decomposition products: Carbon dioxide and carbon monoxide. Reacts slowly with water to form Phthalic Acid.**

**11- TOXICOLOGICAL INFORMATION**

**Acute toxicity: LD<sub>50</sub> (oral, rats): 1530 mg/kg**

LC<sub>50</sub> (inhalation, rats): >210 mg/m<sup>3</sup>

LC<sub>50</sub> (dermal, rats): >10000mg/kg

**Skin corrosion/irritation: Slightly Irritating (PDII) : 1.5.**

**Serious eye damage/irritation: Irritating to eyes (Overall irritation score: 59.2)**

**Respiratory or skin sensitization: Sensitizing (stimulation index:3).**

**Germ cell mutagenicity: Not mutagenic**

**Carcinogenicity: Not listed as carcinogenic (IARC).**

**Reproductive toxicity: No Adverse effects (NOAEL, rat: 1000mg/kg).**

**Developmental toxicity: No Adverse effects.**



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**12- ECOLOGICAL INFORMATION**

**Ecotoxicity:**

**Fish:** Fresh water: PNEC: >99mg/L(short term toxicity)  
LOEC: 32 mg/L (long term toxicity)

**Daphnia:** EC50 (48h): > 640 mg/L (short term toxicity)  
NOEC (21 days): 16mg/L (long term toxicity)

**Algae:** NOEC (72h): >= 100mg/L

**Persistence/degradability:** Not Persistent

**Bioaccumulative potential:** Bioaccumulation is not expected (BCF=5)

**13- DISPOSAL CONSIDERATION**

**Recommended methods for safe and environmentally preferred disposal**

Disposal methods:

Prior to implementing land disposal of waste residue (including waste sludge), consult local legislation for adequate disposal methods. Empty containers can retain product residues and shall be disposed in accordance with the provisions proposed for the product.

**14- TRANSPORT INFORMATION**

**Solid**

**International regulations**

<b>Road transport ADR/RID</b>	<b>Class:</b> NA	<b>Number letter:</b> NA
	<b>Warning sign:</b> NA	<b>UN No:</b> NA
<b>Maritime transport IMDG</b>	<b>Class:</b> NA	<b>UN No:</b> NA
	<b>EmS number:</b> NA	<b>Packaging group:</b> NA
<b>Air transport ICAO/IATA</b>	<b>Class:</b> NA	<b>UN No:</b> NA
		<b>Packaging group:</b> NA



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**15-REGULATORY INFORMATION**

**Regulatory: REGULATION (EC) No 1907/2006 of the European Parliament and of the Council, of 18 December 2006 and in accordance with other local and national regulations.**

**Labelling: Health, Safety and Environmental information**

**Hazard classes: Acute toxicity (oral) hazard category 4: Skin irritation hazard category 2: Skin sensitization hazard category 1: Specific target organ toxicity single exposure hazard category 3 (Respiratory tract irritation): Serious eye damage, hazard category 1: Respiratory sensitization hazard category 1**

**Hazard Pictograms:**



**GHS07**



**GHS05**



**GHS08**

**Signal word:**

**Danger.**

**Hazard statements:**

**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**



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**Precautionary statements: P261: Avoid breathing dust/fume/gas/mist/vapours/spray.**  
**P264: Wash hands thoroughly after handling.**  
**P270: Do not eat, drink or smoke when using this product.**  
**P271: Use only outdoors or in a well-ventilated area.**  
**P272: Contaminated work clothing should not be allowed out of the workplace.**  
**P280: Wear protective gloves/protective clothing/eye protection/face protection.**  
**P285: In case of inadequate ventilation wear respiratory protection. P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.**  
**P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.**  
**P304 + P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**  
**P310: Immediately call a POISON CENTER or doctor/physician. P330: Rinse mouth.**  
**P332 + P313: If skin irritation occurs: Get medical advice/attention. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.**  
**P342+ P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.**  
**P362: Take off contaminated clothing and wash before reuse. P363: Wash contaminated clothing before reuse.**  
**P403 + P233: Store in a well-ventilated place. Keep container tightly closed.**  
**P405: Store locked up.**  
**P501: Dispose of contents/container to ...(in accordance to local legislation)**

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## **16. Other Information**

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The information provided in this safety data sheet is given in good faith and is correct to the best of our knowledge and information at the date of publication. It is designed only as guidance for safe handling, storage, transportation, use and disposal. No warranty is expressed (or) implied.