

# MATERIAL SAFETY DATA SHEET

MSDS No. 02-01

According to Regulation ( EC )no.1907/2006 EEC,  
REACH



## PHTHALIC ANHYDRIDE SOLID (FLAKES) With less than 0.05% Maleic anhydride

Revision: 3 Last up date: July 16, 2008 Issued date: January 05, 2004 pag.1 / 8

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

#### 1.1. Identification of the substance/preparation

Trade Name	<b>Phthalic anhydride solid (flakes) with less than 0.05% Maleic anhydride</b>
Chemical Name	Phthalic anhydride
Family	Anhydrides of aromatic acids
Common Synonyms	1,3 Isobenzofurandione ;1,2 benzendicarboxylic acid anhydride; phthalic acid anhydride
Chemical Formula	C <sub>8</sub> H <sub>4</sub> O <sub>3</sub>
Molecular Weight	148.12

#### 1.2. Uses of the substance/preparation

Raw material for plasticizers, dyes, paints and alkyl resin manufacturing.

#### 1.3. Company/undertaking identification

**OLTCHIM S.A.**

Address	1 Uzinei Street, 240050 - R@mnicu V@lcea, Romania
Telephone	+40/250/701200
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1.4. Emergency telephone number +40 / 0250/738141

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**2. HAZARDS IDENTIFICATION****EC Classification according to Directive 67/548/CEE, Annex I:** Xn; R 22, Xi; R 37/38-41  
R 42/43

Harmful if swallowed.

Irritating to respiratory system/skin.

**Health effects:** May cause severe irritations with possible burns to digestive tract, respiratory tract, eyes and skin. May cause allergic skin or respiratory reaction.**Environmental effects:** This product is readily biodegradable. No bioaccumulation is to be expected. No ecological problems are to be expected when the product is handled and used with due care and attention.**Emergency Overview:** Causes burns to any area of contact due to water reaction when phthalic acid is formed. Dust of phthalic anhydride may form combustible concentration in air.**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Hazardous Components / Constituents	Concentration %, wt.	CAS No.	EINECS No.	Annex I Index No.	Hazard Symbol	R Phrases
Phthalic Anhydride	99.7	85-44-9	201-607-5	607-009-00-4	Xn Xi	R 22 R 37/38 R 41 R 42/43
Maleic Anhydride	< 0,05	108-31-6	203-571-6			

**4. FIRST - AID MEASURES*****Seek medical attention immediately in all cases of exposure!*****Inhalation:** Inhalation of dust will produce irritation to respiratory tract, characterized by burning, sneezing and coughing.

Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Do not use mouth- to-mouth resuscitation. Call a physician.

**Skin contact:** Hazardous in case of skin contact (corrosive, permeate the skin). Skin contact can produce inflammation and blistering. In case of contact remove any contaminated clothing. Wash skin with soap or mild detergent and plenty of water for at least 15 minutes. Wash clothes before reuse. Get medical attention.**Eyes contact:** Eye contact can result in corneal damage or blindness. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.**Ingestion:** Product ingestion cause irritations and possible burning to mouth, throat and stomach.

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If swallowed do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention.

**Note to physician:** Treat symptomatically and supportively.

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## 5. FIRE - FIGHTING MEASURES

**Suitable extinguishing media:** Water spray, dry chemical, carbon dioxide and foam.

**Unsuitable extinguishing media:** Water jet or foam may cause frothing.

**Exposure hazards:** Combustible. Phthalic anhydride dust it is possible to form explosive mixture with air. Slightly flammable to flammable in presence of heat.

**Protection of fire-fighters:** The fire fighters should wear full protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

**Hazardous combustion products:** Carbon dioxide and carbon monoxide may form by combustion. In contact with hot water may form phthalic acid.

**Other information:** Do not get water inside containers/bags. Water spray or fog carefully applied to surface of the burning material can be used to extinguish the fire. Use water spray to prevent dust formation, absorb heat, keep containers cool and protect fire-exposed materials. Cool containers with flooding quantities of water until well after fire is out. Use water spray to flush spills from ignition source.

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## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Keep unnecessary and unprotected personnel away from entering. Remove all sources of ignition. Ventilate area of leak or spill. Wear self-contained breathing apparatus and full protective clothing.

**Environmental precaution:** Prevent from contamination the ground and surface area by isolating the hazard area. Contain and recover when possible. Keep closed container and dispose to all applicable federal, state, or local environment regulation.

**Methods of cleaning up:** Do not touch spilled material. Remove all ignition sources (heat, sparks and flames). Use non-sparking tools and equipment. Prevent material from entering sewers or confined spaces. For solid material spills, avoid generation dust. Contain spills and solution with earth, sand or absorbent material which does not react with spilled material. Shovel material into suitable, covered, labeled containers. Flush area with water. *Do not get water inside containers!*

## 7. HANDLING AND STORAGE

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**Handling:** Isolate from any sources of heat or ignition. NO SMOKING! Protect against moisture. It is also a combustible dust and so is a dust explosion hazard. Protect against physical damage. Use non-sparking tools and equipment. All ignition sources are prohibited in area where phthalic anhydride is handled. Never add water to this product. Empty containers pose a fire risk, evaporate the residual under a fume hood.

**Storage:** Solid phthalic anhydride is stored in a cool, dry and well ventilated area. Keep container tightly closed. Avoid water contact.

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## 8 . EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure limits:** PEL (OSHA ) (permissible exposure limit): 2 ppm (12 mg/m<sup>3</sup>)  
TLV (ACGIH) (threshold limit value): 1 ppm (6.1 mg/m<sup>3</sup>)

**Engineering control:** A system of local and/ or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

### Personal protective equipment

**Respiratory protection:** Protective respiratory equipment should be selected specifically for working place. Up to 30 mg/m<sup>3</sup> use dust and mist respirator. Up to 60 mg/m<sup>3</sup> use dust and mist respirator except single-use and quarter-mask respirator, full-face piece respirator with high-efficiency particulate filter, powered air-purifying respirator with dust and mist filter. In case of emergency situation (unknown concentrations) use positive pressure full-face piece.

**Hand protection:** Wear rubber and neoprene gloves.

**Eye / Face protection:** Use chemical safety goggles and/or a full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin protection:** Wear impervious protective clothing, including boots, gloves, lab coat apron or coveralls as appropriate, to prevent skin contact.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General information

Appearance	thin white flakes
Odor	characteristic choking odor

### Important health, safety and environmental information

Boiling point	284°C
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Specific density	1.53 g/cm <sup>3</sup>
Bulk density	500-700 kg/m <sup>3</sup>
Vapor pressure 20 °C	0.01mbar
Vapor density (air=1)	5.1
Solubility in water	6 g/l (forming phthalic acid)
Partition coefficient (log K <sub>ow</sub> )	0.73
Flash point	152°C (close cup)
Explosive properties	explosive under open flame explosion limits in air % by volume : lel-1.7; uel-10.5
<b>Other information</b>	
Melting point	131-133°C
Auto ignition temperature	580°C

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**11. STABILITY AND REACTIVITY**

**Chemical stability:** Stable under normal conditions of use and storage. Heat will contribute to instability. In molten state it should be covered with inert gas.

**Conditions to avoid:** Heat, flame, ignition sources, dusting, moisture and incompatibles.

**Materials to avoid:** Strong acids, strong bases, strong oxidizing agents, strong reducing agents, amines, ammonia, coatings, plastics, water.

**Hazardous decomposition products:** Carbon dioxide and carbon monoxide may form when heated to decomposition. Slowly reacts with water to form phthalic acid.

**Hazardous polymerization:** Will not occur.

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**11. TOXICOLOGICAL INFORMATION****Animal toxicity data :**

LD <sub>50</sub> /oral -rat	1530 mg /kg
LD <sub>50</sub> /dermal-rabbit	>10 g/kg
LD <sub>50</sub> /inhalation- rat	>210 mg /m <sup>3</sup> /1-hour
LD <sub>50</sub> /i.p.-mouse	165 mg/kg

**Acute toxicity**

**Inhalation:** Dust or fumes can cause irritation of the nose throat and respiratory tract. Symptoms of exposure may include runny nose, coughing and nose bleeds, depending on severity of exposure. Severe over-exposure can produce lung damage, choking unconsciousness or death.

**Skin contact:** Hazardous in case of skin contact (corrosive, permeator). The amount of tissue damage depends on length of contact. Skin contact can produce inflammation, irritations and

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possible burning. Skin inflammation is characterized by itching scaling, reddening, or, occasionally, blistering.

**Eye contact:** Cause irritations and possible burning. Inflammation of the eye is characterized by redness, watering and itching.

**Ingestion:** Cause irritations and possible burning to mouth, throat and stomach.

**Chronic effects:** Chronic exposure by inhalation or skin contact can cause allergic sensitization causes liver and kidney effects in laboratory animals. Is not classified as a human carcinogen.

**CMR effects:**

**Carcinogenity:** Not classifiable as carcinogenetic by IARC.

**Mutagenicity:** No information

**Toxicity for Reproduction:** No information

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## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Fish	<i>Brachydanio rerio</i>	LC <sub>50</sub> = 561mg/l/7 days
	<i>Leuciscus idus</i>	LC <sub>50</sub> = 313 mg/l/48 hours
	<i>Leuciscus idus</i>	LC <sub>100</sub> = 360 mg/l/48 hours
Bacteria	<i>Activated sludge</i>	EC <sub>50</sub> >1000 mg/l/3h

**Mobility:** When release to moist soil or water, this material is expected to hydrolyze. In water the half-life is less than 1 day. When released into the air, this material is expected to have a half-life of greater than 30 days.

**Persistence and degradability:** Readily biodegradable (99%/ 14 days). The product degradation are less toxic than the product itself.

**Bioaccumulative potential:** No bioaccumulation is to be expected (log Kow<1).

**PBT assessment:** Not applicable.

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## 13. DISPOSAL CONSIDERATIONS

**Waste treatment:** Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Any disposal practice must be in compliance with all local and national law and regulations. Do not dump into any sewers, on the ground, or into any body of water.

**Packaging treatment:** The empty packaging must be destroying according with all local, regional and national regulations.

## 14. TRANSPORT INFORMATION

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Solid Phthalic Anhydride with maleic anhydride content less than 0.05% is not regulated for any mode of transportation.

**15. REGULATORY INFORMATION**

Phthalic anhydride is classified and labeled under Directive 67/548/EC, Annex I. This product is listed on EINECS.

<b>Classification</b>	EC Index No. 607-009-00-4 Xn; R 22 Xi; R 37/38-41 R 42/43
<b>EC labeling</b>	
EC label name	Phthalic anhydride with less than 0.05% maleic anhydride
EC number	201-607-5
Hazard Symbol	Xn Harmful
R Phrases	R22 Harmful if swallowed. R 37/38 Irritating to respiratory system/skin. R41 Risk of serious damage to the eyes. R42/43 May cause sensitization by inhalation/skin contact.
S Phrases	S23 Do not breath vapor. S24/25 Avoid contact with skin/eyes. S26 In case of contact with eyes, rinse immediately with plenty with water and seek medical advice. S37/39 Wear suitable gloves/eye-face protection. S46 If swallowed, seek medical advice immediately and show this container or label.

**16. OTHER INFORMATION****List of relevant R-phrases (see chapter 3)**

R22	Harmful if swallowed.
R 37/38	Irritating to respiratory system/skin.
R41	Risk of serious damage to the eyes.
R42/43	May cause sensitization skin contact.

**Precautions to be taken in handling and storing:** Keep well ventilated the areas where phthalic anhydride is stored and handled. Do not breathe dust. Keep container closed. Avoid dust cloud in presence of an ignition source.

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**Work hygienic practices:** Avoid direct contact of substance with skin/eyes. Avoid the exposure of personnel with dermatological, liver affections.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

**Interdictions:** Do not drink or eat in working area.

Do not smoke in or near working area.

The use of open flame in working areas is prohibited.

**MSDS Revisions:** This Material Safety Data Sheet is made in accordance to Regulation (EC) no.1907/2006 REACH and will replace the previous version 2 date March 05, 2006.

**Revised information:**

TÜV mark for Quality-Environmental Integrated System was replaced with the new one, remitted by TÜV Management GmbH.

**Uses and Restrictions:** Advice in this document relates only to product as originally supplied. Other derivative chemicals will have different properties and hazard.

Chemical intermediate for organic synthesis.

Sources of key data uses to compile the data sheet:

EC Directive 67/548/EC resp. 99/45/EC as amended in each case.

EC Directive 2001/58/EC as amended in each case.

EC Directive 2000/39/EC as amended in each case.

National Threshold Limit Values of corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

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*This MSDS has been elaborated in accordance with Regulation (EC) No.1907/2006 REACH. The information contained here in is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.*

*This MSDS cannot cover all possible situations which the user may experience during handling and processing. Each aspect of the user's operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained within this MSDS should be provided to the user's employees or customers.*