

## SAFETY DATA SHEET

Preparation Date: 09/01/2015

Revision Date: 09/01/2015

Revision Number: G1

### 1. IDENTIFICATION

**Product identifier**

**Product code:** P1140  
**Product Name:** PHTHALIC ANHYDRIDE, REAGENT, ACS

**Other means of identification**

**Synonyms:** 1,2-Benzenedicarboxylic anhydride  
 PAN  
 Phthalic acid anhydride

**CAS #:** 85-44-9  
**RTECS #** TI3150000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** Manufacture of plastics. Manufacture of resins. Dyes. In pharmaceuticals. In fungicides.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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
Combustible dust	

**Label elements**

## Danger

### Hazard statements

Causes serious eye damage  
Harmful if swallowed  
Causes skin irritation  
May cause respiratory irritation  
May cause an allergic skin reaction  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May form combustible dust concentrations in air



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

Not available

### Precautionary Statements - Prevention

Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Keep container closed and grounded  
Prevent dust accumulations to minimize explosion hazard  
Do not eat, drink or smoke when using this product  
Wear respiratory protection  
Wear eye/face protection  
Wear protective gloves  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wash face, hands and any exposed skin thoroughly after handling  
Contaminated work clothing should not be allowed out of the workplace

### Precautionary Statements - Response

*Specific treatment (see .? on this label)*

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 ON SKIN: Wash with plenty of soap and water  
Take off contaminated clothing and wash before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

### Precautionary Statements - Storage

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

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Phthalic Anhydride 85-44-9	85-44-9	100	*

## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

#### **Eye Contact:**

Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

### Most important symptoms and effects, both acute and delayed

#### **Symptoms**

Causes serious eye damage. Causes skin irritation. Harmful if swallowed. May cause respiratory irritation. May cause allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause corneal injury. May cause blindness. Skin contact can produce inflammation and blistering. Burning sensation of the respiratory tract. Coughing and wheezing. Severely over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering and itching. Skin contact may result in redness, pain, inflammation, itching, scaling. It may cause dermatitis.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to Physician:**

Treat symptomatically

### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

## 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### **Suitable Extinguishing Media:**

Dry chemical. Carbon dioxide (CO<sub>2</sub>). Foam.

#### **Unsuitable Extinguishing Media:**

Water.

## Specific hazards arising from the chemical

### **Hazardous Combustion Products:**

Carbon oxides

### **Specific hazards:**

May be combustible at high temperatures  
When heated to decomposition it emits toxic fumes  
During processing, dust may form explosive mixture in air.

## Special Protective Actions for Firefighters

### **Specific Methods:**

No information available.

### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## **6. ACCIDENTAL RELEASE MEASURES**

### Personal precautions, protective equipment and emergency procedures

#### **Personal Precautions:**

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid dust formation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition. All equipment used when handling the product must be grounded.

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

#### **Methods for containment**

Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

#### **Methods for cleaning up**

Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

## **7. HANDLING AND STORAGE**

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Avoid dust formation. Remove all sources of ignition. Keep away from incompatible materials.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe vapours/dust. Do not ingest. Do not smoke. Keep away from heat and sources of ignition. During processing, dust may form explosive mixture in air. Handle in accordance with good industrial hygiene and safety practice. Use only in well-ventilated areas.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Moisture sensitive. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store away from incompatible materials. Store in a segregated and approved area.

#### **Incompatible Materials:**

Oxidizing agents. Nitric acid. Sodium Nitrite. Copper.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### National occupational exposure limits

##### United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Phthalic Anhydride 85-44-9	2 ppm TWA 12 mg/m <sup>3</sup> TWA	= 6 mg/m <sup>3</sup> TWA	= 1 ppm TWA	None

##### Canada

Components	Alberta	British Columbia	Ontario	Quebec
Phthalic Anhydride 85-44-9	= 1 ppm TWA = 6.1 mg/m <sup>3</sup> TWA	= 1 ppm TWA	1 ppm TWA	1 ppm TWAEV 6.1 mg/m <sup>3</sup> TWAEV

##### Australia and Mexico

Components	Australia	Mexico
Phthalic Anhydride 85-44-9	6.1 mg/m <sup>3</sup> TWA 1 ppm TWA	= 1 ppm TWA = 6 mg/m <sup>3</sup> TWA

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

**Eye protection:** Face-shield

**Skin and body protection:** Chemical resistant protective suit. Gloves. Boots.

**Respiratory protection:** Wear respirator with dust filter. Be sure to use an approved/certified respirator or equivalent..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Physical state:</b> Solid.	<b>Appearance:</b> Crystals.	<b>Color:</b> White.
<b>Odor:</b> Characteristic. Acrid. Choking .	<b>Taste</b> No information available	<b>Molecular/Formula weight:</b> 148.11
<b>Formula:</b> C8H4O3	<b>Flammability:</b> May form combustible (explosive) dust-air mixtures May be combustible in high temperatures	<b>Flash point (°C):</b> 151.7°C 165°C
<b>Flashpoint (°C/°F):</b> 151.7°C/ 305°F 165°C/ 329°F	<b>Flash Point Tested according to:</b> Closed cup Open cup	<b>Autoignition Temperature (°C/°F):</b> 570°C/ 1058°F
<b>Lower Explosion Limit (%):</b> 1.7%	<b>Upper Explosion Limit (%):</b> 10.4%	<b>pH:</b> No information available
<b>Melting point/range(°C/°F):</b> 131°C/ 267.8°F	<b>Boiling point/range(°C/°F):</b> 295°C/ 563°F	<b>Bulk density:</b> No information available
<b>Decomposition temperature(°C/°F):</b> No information available	<b>Density (g/cm3):</b> No information available	<b>Specific gravity:</b> 1.53
<b>Vapor pressure @ 20°C (kPa):</b> No information available	<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 6.6
<b>VOC content (g/L):</b> No information available	<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available
<b>Viscosity:</b> No information available	<b>Miscibility:</b> No information available	<b>Solubility:</b> Very slightly soluble in cold water Very slightly soluble in diethyl ether

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents  
Reactive with nitric acid  
Reactive with sodium nitrite and copper oxide

### Chemical stability

**Stability:** Moisture Sensitive. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials. Exposure to moisture. Exposure to moist air.

**Incompatible Materials:** Oxidizing agents. Nitric acid. Sodium Nitrite. Copper.

**Hazardous decomposition products:** Carbon oxides.

### Other Information

**Corrosivity:** Non-corrosive in presence of glass.

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Principal Routes of Exposure:

Skin. Eyes. Inhalation. Ingestion.

### Acute Toxicity

#### Component Information

*Phthalic Anhydride - 85-44-9*

**LD50/oral/rat** = 1530 mg/kg Oral LD50 Rat

**LD50/oral/mouse** = 1500 mg/kg

**LD50/dermal/rat** = No information available

**LD50/dermal/rabbit** = 10 g/kg Dermal LD50 Rabbit

**LC50/inhalation/rat** = 210 mg/m<sup>3</sup> Inhalation LC50 Rat 1 h

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** = No information available

#### Product Information

**LD50/oral/rat** =

**VALUE- Acute Tox Oral** = 1530mg/kg

**LD50/oral/mouse** =

**Value - Acute Tox Oral** = 1500mg/kg

**LD50/dermal/rabbit**

**VALUE-Acute Tox Dermal** = 10000mg/kg

**LD50/dermal/rat**

**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**

**VALUE-Vapor** = No information available

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = 210mg/m<sup>3</sup> (1-hr)

**LC50/Inhalation/mouse**

**VALUE-Vapor** = No information available

**VALUE - Gas** = No information available

**VALUE - Dust/Mist** = No information available

### Symptoms

#### **Skin Contact:**

May cause severe irritation and possible burns. May cause allergic skin reaction. If the skin is moist the irritant effects will be due to hydrolysis of phthalic acid.

#### **Eye Contact:**

Corrosive. Causes severe irritation and burns. May cause conjunctivitis. May cause corneal damage.

#### **Inhalation**

Causes severe respiratory tract irritation with possible chemical burns to the respiratory tract. May cause asthmatic attacks due to allergic sensitization of respiratory tract. May also affect respiration, and liver. Symptoms may include Rhinorrhea, bloody nasal discharge, hoarseness of voice, cough, bronchospasm.

**Ingestion** Causes severe digestive tract irritation with possible burns. May cause severe and permanent damage to the digestive tract. May cause perforation of the digestive tract.

**Aspiration hazard** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Skin: Prolonged or repeated skin contact may cause allergic skin reaction..

**Sensitization:** No information available

**Mutagenic Effects:** May affect genetic material

**Carcinogenic effects:** Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Phthalic Anhydride	Not listed	A4 Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

**Reproductive toxicity** No data is available

**Reproductive Effects:** May cause adverse reproductive effects based on animal data

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available

**STOT - repeated exposure** No information available

**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

**Mobility:** No information available

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**



### 13. DISPOSAL CONSIDERATIONS

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Phthalic Anhydride	None	None	None	U190

### 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:**  
**Packing Group:** III  
**ERG No:** 156  
**Marine Pollutant:** No data available  
**DOT RQ (lbs):** No information available  
**Symbol(s):** R5

**TDG (Canada)**

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available

**ADR**

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

**IMO / IMDG**

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available  
**EMS:** F-A  
**MFAG:** No information available  
**Maximum Quantity:** No information available

## 14. TRANSPORT INFORMATION

### RID

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Classification Code:** No information available  
**Description:** No information available

### ICAO

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Description:** No information available

### IATA

**UN-No:** UN2214  
**Proper Shipping Name:** Phthalic anhydride  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG Code:** 8L  
**Description:** No information available

## 15. REGULATORY INFORMATION

### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Phthalic Anhydride</i>	Present T	Present KE-21147	Present	Present (3)-1344	Present	Present	Present 201-607-5

### U.S. Regulations

#### *Phthalic Anhydride*

**Massachusetts RTK:** Present  
**New Jersey RTK Hazardous Substance List:** 1535  
**New Jersey (EHS) List:** 1535 500 lb TPQ  
**New Jersey - Discharge Prevention - List of Hazardous Substances:** Present  
**Pennsylvania RTK:** Environmental hazard  
**Pennsylvania RTK - Environmental Hazard List:** Present  
**Pennsylvania RTK - Special Hazardous Substances:** Present  
**Minnesota - Hazardous Substance List:** Present  
**New York Release Reporting - List of Hazardous Substances:**  
 = 1 lb RQ  
**Louisiana Reportable Quantity List for Pollutants:** Listed  
**California Directors List of Hazardous Substances:** Present

#### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Phthalic Anhydride	Not Listed	Not Listed	Not Listed	Not Listed

#### CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Phthalic Anhydride	= 5000 lb final RQ	None	None	None	1.0 % de minimis concentration

#### U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Phthalic Anhydride	Not Applicable	Not Applicable

#### Canada

##### WHMIS hazard class:

D2A Very toxic materials

D2B Toxic materials

##### Phthalic Anhydride

D2A D2B

##### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Phthalic Anhydride	0.1 %

#### Inventory

Components	Canada (DSL)	Canada (NDSL)
Phthalic Anhydride	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Phthalic Anhydride	Not listed	Not listed

#### EU Classification

##### R-phrases

R22 - Harmful if swallowed.

R41 - Risk of serious damage to eyes.

R37/38 - Irritating to respiratory system and skin.

**S -phrase(s)**

S 2 - Keep out of the reach of children.

S23 - Do not breathe gas/fumes/vapor/spray.

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S46 - If swallowed, seek medical advice immediately and show this container or label.

S24/25 - Avoid contact with skin and eyes.

S37/39 - Wear suitable gloves and eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases
Phthalic Anhydride	Xn; R22 Xi; R37/38-41 R42/43	No information	S2 S23 S24/25 S26 S37/39 S46

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Xn - Harmful.

Xi - Irritant.

**16. OTHER INFORMATION**

## 16. OTHER INFORMATION

**Preparation Date:** 09/01/2015  
**Revision Date:** 09/01/2015  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**