

Section 1. Product and Company Identification

Product Name Phthalic Anhydride
CAS Number 85-44-9

Parchem - fine & specialty chemicals
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Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture
Classification in accordance with 29 CFR 1910.1200

Combustible dust
Acute Toxicity (Oral), Category 4
Skin Corrosion / Irritation, Category 2
Eye Damage / Irritation, Category 1
Respiratory sensitizer, Category 1
Skin sensitizer, Category 1
Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory system)

GHS Label Elements

Pictograms:



Signal word: DANGER

Hazard and precautionary statements

Hazard Statements

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



Precautionary Statements

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 soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. 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 in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified: None known.

Section 3. Composition / Information on Ingredients

Common Name Phthalic Anhydride
CAS Number 85-44-9

COMPONENT	CAS NUMBER	CONCENTRATION
Phthalic Anhydride	85-44-9	> 99.7%
Phthalamide	85-41-6	< 0.2%
Phthalic Acid	88-99-3	< 0.1%
Benzoic Acid	65-85-0	< 0.05%
Maleic Anhydride	108-31-6	< 0.05%

Section 4. First Aid Measures

Description of Necessary 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 immediate 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 Immediate Medical Attention and Special Treatment Needed, if Necessary: Treat symptomatically and supportively.

Section 5. Firefighting Measures

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

Unsuitable Extinguishing Media: None known.

Specific Hazards Arising from the Chemical: 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

Combustion Products: Oxides of carbon

Contact with water or moisture: Phthalic acid

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.

Sensitivity to Mechanical Impact: None known.

Sensitivity to Static Discharge: Yes (dust)

Section 6. 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 Up: 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 7. 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 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. 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 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. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Keep container tightly closed. Store locked up. Keep separated from incompatible substances.

Incompatibilities: amines, bases, metal oxides, metals, oxidizing materials, combustible materials

Section 8. Exposure Controls / Personal Protection

Component Exposure Limits

Phthalic Anhydride (85-44-9)

OSHA (US): 2 ppm TWA; 12 mg/m³ TWA

ACGIH: 1 ppm TWA

dermal sensitizer; respiratory sensitizer

Maleic Anhydride (108-31-6)

OSHA (US): 0.25 ppm TWA; 1 mg/m³ TWA

ACGIH: 0.01 mg/m³ TWA (inhalable fraction and vapor)

dermal sensitizer; respiratory sensitizer

IDLH: 60 mg/m³

Appropriate 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, and 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

Eyes/Face Protection: 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.
Glove Recommendations: Wear appropriate gloves.
Protective Materials: Rubber

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.

Section 9. Physical and Chemical Properties

Physical State: Solid
Appearance: White flake
Color: White
Physical Form: Flake
Odor: Acrid odor
Odor Threshold: 0.32 - 0.72 mg/m³
pH: 1.37 - 1.94 @ 95°C
pH Solution: 2 - 15 g/L
Freezing / Melting Point: 131°C
Boiling Point: 284°C
Flash Point: 151°C (CC)
Decomposition Temperature: Not available
Evaporation Rate: Not available
Lower Explosive Limit: 1.7%
Upper Explosive Limit: 10.4%
Vapor Pressure: 0.001 mmHg @ 30°C
Vapor Density: 5.1
Bulk Density: 1.53 lbs/gal
Specific Gravity (water=1): 1.527 @ 4°C
Water Solubility: 0.62% @ 20°C insoluble at room temperature
Log Kow: Not available
Coefficient of Water/Oil Dist: Not applicable
Autoignition Temp.: 570 °C
Viscosity: 6.4 mPa.s @ 197°C
Sublimation: 295 °C
Volatility: Not available
Molecular Weight: 148.12
Molecular Formula: C₈H₄(CO)₂O
Flammability (solid, gas): Not flammable

Other Property Information

Explosive dust properties:
Minimum explosive concentration 30 g/m³
Minimum ignition temperature 650°C
Maximum explosion pressure 6.6 bar

Maximum rate of pressure rise 613 bar
Kst (explosion constant) value 166 bar/m/s

Solvent Solubility

Soluble: Alcohol, carbon disulfide

Slightly Soluble: Ether

Section 10. 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.

Incompatible Materials: Amines, bases, metal oxides, metals, oxidizing materials, combustible materials

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, phthalic acid

Hazardous Decomposition

Combustion Products: Oxides of carbon

Contact with water or moisture: Phthalic acid

Section 11. Toxicological Information

Acute Toxicity (Component)

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)

Dermal LD50 - Rabbit: >10 g/kg

Inhalation LC50 - Rat: > 210 mg/m³ 1h

Oral LD50 - Rat: 1530 mg/kg

Information on Likely Routes of Exposure

Inhalation: Irritation, allergic reactions

Ingestion: Harmful if swallowed

Skin Contact: Irritation, allergic reactions

Eye Contact: Burns

Immediate Effects: Harmful if swallowed, respiratory tract irritation, skin irritation, eye burns, allergic reactions

Delayed Effects: Allergic reactions

Medical Conditions Aggravated by Exposure: Skin disorders, immune system disorders or allergies

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.

Germ Cell Mutagenicity

In vitro Genotoxicity: Negative

Carcinogenicity

Phthalic Anhydride (85-44-9)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Reproductive Toxicity: No data available.

Specific Target Organ Toxicity - Single Exposure: respiratory system

Specific Target Organ Toxicity - Repeated Exposure: No data available.

Aspiration Hazard: Not expected to be an aspiration hazard.

Section 12. Ecological Information

Component Analysis - Aquatic Toxicity: Data may be available for the product or its components (if applicable, see below).

Persistence and Degradability: Relatively non-persistent in the environment.

Bioaccumulation Potential: Accumulates very little in the bodies of living organisms.

Mobility: Not expected to leach through the soil or the sediment.

Other Adverse Effects: Not appreciably volatile from water.

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

US DOT Information: No Classification assigned.

Component Marine Pollutants: This material does not contain any chemicals listed on the Hazardous Materials Table required by US DOT to be identified as a marine pollutant.

TDG Information: No Classification assigned.

IATA Information: No classification assigned.

Section 15. Regulatory Information

U.S. Federal Regulations: This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Phthalic Anhydride (85-44-9)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ; 2270 kg final RQ



SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)

Acute Health: Yes

Chronic Health: Yes

Fire: No

Pressure: No

Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS Number	CA	MA	MN	NJ	PA
Phthalic Anhydride	85-44-9	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

Canadian Regulations: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

WHMIS Classification: D2A, D2B.

WHMIS Ingredient Disclosure List: The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Phthalic Anhydride (85-44-9): 0.1 %

Component Analysis - Inventory

Component	CAS Number	US	DSL	NDSL
Phthalic Anhydride	85-44-9	Yes	Yes	No

U.S. Inventory (TSCA): Listed on inventory.

Canada Inventory: Listed on DSL.

NFPA Rating

Health: 3

Flammability: 1

Reactivity: 1

Section 16. Other Information

Disclaimer: The above information 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. It does not represent any guarantee of the properties of the product.

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