



Safety Data Sheet

Product Identifier: PHTHALIC ANHYDRIDE - FLAKE

SDS ID: 00227844

* * *Section 1 - IDENTIFICATION* * *

Product Identifier: PHTHALIC ANHYDRIDE - FLAKE

Synonyms

PHTHALIC ANHYDRIDE SOLID

Chemical Family

aromatic, carboxylic, anhydrides

Recommended Use

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

Restrictions on Use

None known.

Manufacturer Information

KOPPERS INC.

436 Seventh Avenue

Pittsburgh, PA 15219-1800

Mfg Contact: 412-227-2001 (SDS Requests: 866-852-5239)

CHEMTREC: 800-424-9300 (Outside USA: +1 703-527-3887)

Emergencies: (Medical in USA): 877-737-9047

Emergencies: (Medical Outside of USA): 651-632-9269

Email: naorgmsds@koppers.com

* * *Section 2 - HAZARD(S) IDENTIFICATION* * *

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

Symbol(s)



Signal Word

DANGER

Hazard Statement(s)

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

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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 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

CAS	Component	Percent (weight)
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

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.

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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 - FIRE-FIGHTING 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.

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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.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	Appearance:	white flake
Color:	white	Physical Form:	flake
Odor:	acid 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:	C6-H4-(C-O)2-O
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

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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 1 h; 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

Invitro Genotoxicity: Negative

Carcinogenicity (Product)

See applicable component information.

Component 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).

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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

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

PHTHALIC ANHYDRIDE (85-44-9)

RCRA: waste number U190

Disposal of Contaminated Packaging

Dispose in accordance with all applicable 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#	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.

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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	US	DSL	NDSL
PHTHALIC ANHYDRIDE	85-44-9	Yes	Yes	No

U.S. Inventory (TSCA)

Listed on inventory.

Canada Inventory

Listed on DSL.

Section 16 - OTHER INFORMATION

NFPA Ratings: Health= 3 Fire= 1 Reactivity= 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Review date

1/19/2015

Summary of Changes

Updated: 1/19/2015

Multiple changes due to format (GHS) update.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ANSI - American National Standards Institute; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EPA - Environmental Protection Agency; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LC50 - Lethal Concentration, 50%; LD50 - Lethal Dose, 50%; LEL - Lower Explosive Limit; LMPE-CT - Maximum Permissible Short Time Exposure Limit (Mexico); LMPE-PPT - Maximum Permissible Time-Weighted Average Exposure Limit (Mexico); LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; NDSL - Non-Domestic Substances List; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States; WHMIS - Workplace Hazardous Materials Information System

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Other Information

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 thereon.

End of Sheet 00227844