

SAFETY DATA SHEET

Issue Date 27-Nov-2025
Revision Number 2.04

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

Product identifier**Product Name** Phthalic Anhydride**Other means of identification****Product Code(s)** 161-02485**Recommended use of the chemical and restrictions on use****Recommended Use** For research use only.**Uses advised against** Seek expert judgment when using for purposes other than those recommended.**Details of the supplier of the safety data sheet****Manufacturer Address**

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2. HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture****Acute toxicity - Oral**

Category 4

Serious eye damage/eye irritation

Category 2A

Respiratory sensitization

Category 1

Skin sensitization

Category 1

Specific target organ toxicity (single exposure)

Category 3

Category 3 Respiratory irritation, Narcotic effects**Specific target organ toxicity (repeated exposure)**

Category 1

Category 1 respiratory system**Pictograms****Signal word**

Danger

Hazard statements

H319 - Causes serious eye irritation

H302 - Harmful if swallowed

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H317 - May cause an allergic skin reaction

H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

Wash face, hands and any exposed skin thoroughly after handling Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection In case of inadequate ventilation wear respiratory

protection Contaminated work clothing should not be allowed out of the workplace Do not breathe dust/fume/gas/mist/vapors/spray Use only outdoors or in a well-ventilated area

Precautionary statements-(Response)

Get medical advice/attention if you feel unwell

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of soap and water If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

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

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C₈H₄O₃

Chemical Name	Molecular weight	CAS RN	Weight-%
Phthalic anhydride	148.12	85-44-9	99.5 - 100.3

Impurities and/or Additives: Not applicable

4. FIRST AID MEASURES

First aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Water spray (fog). Carbon dioxide (CO₂). Foam. Extinguishing powder. Sand.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data**Sensitivity to Mechanical** none.**Impact****Sensitivity to Static Discharge** none.**Protective equipment and precautions 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, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment as required. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Avoid creating dust.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Avoid contact with strong oxidizing agents.

Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Store away from sunlight in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.

Packaging materials Polypropylene.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits Not applicable

Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
Phthalic anhydride 85-44-9	STEL: 0.005 mg/m ³ inhalable fraction and vapor TWA: 0.002 mg/m ³ inhalable fraction and vapor Skin	TWA: 2 ppm TWA: 12 mg/m ³ (vacated) TWA: 1 ppm (vacated) TWA: 6 mg/m ³	IDLH: 60 mg/m ³ TWA: 1 ppm TWA: 6 mg/m ³

Personal protective equipment

Respiratory protection	Dust mask (JIS T 8151)
Hand protection	chemical protective gloves (JIS T 8116)
Eye protection	protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection	Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Color	white
Appearance	crystals - crystalline powder or flakes

Odor

Pungent odor

pH

no data available

Melting point/freezing point

131 - 133 °C

Boiling point, initial boiling point and boiling range

284.5 °C

Flash point

152 °C

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits

Upper: 10.5 vol%

Lower: 1.7 vol%

Vapour pressure

no data available

Vapour density

5.1(Air=1)

Specific Gravity / Relative density

1.5

Solubilities

Ethanol : sparingly soluble . water : practically insoluble, or insoluble .

n-Octanol/water partition coefficient:(log Pow)

-0.69

Auto-ignition temperature:

270 °C

Decomposition temperature:

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Particle characteristics

no data available

10. STABILITY AND REACTIVITY

Stability

Chemical stability	Stable under recommended storage conditions.
Reactivity	no data available

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight, Moisture

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Phthalic anhydride	1,530 mg/kg (Rat)	> 10,000 mg/kg (Rabbit)	> 2.14 mg/L (Rat) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Phthalic anhydride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Phthalic anhydride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Phthalic anhydride	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Phthalic anhydride	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Phthalic anhydride	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Phthalic anhydride	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Phthalic anhydride	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Phthalic anhydride	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Phthalic anhydride	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Phthalic anhydride	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Phthalic anhydride	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Phthalic anhydride 85-44-9	N/A	LC50 : Oryzias latipes > 99 mg/L 96h	N/A	N/A

Persistence and degradability

Degree of decomposition: 85.2 % by BOD

Bioaccumulative potential

No information available

Mobility

no data available

Chemical Name	Partition coefficient
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Phthalic anhydride 85-44-9	1.6
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Mobility in soil No information available
Other Data No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of disposing contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID No UN2214
Proper shipping name: Phthalic anhydride
UN classification 8
Subsidiary hazard class
Packing group III
Marine pollutant Not applicable

IATA

UN/ID No UN2214
Proper shipping name: Phthalic anhydride
UN classification 8
Subsidiary hazard class
Packing group III
Environmentally Hazardous Substance Not applicable

IMDG

UN/ID No UN2214
Proper shipping name: Phthalic anhydride
UN classification 8
Subsidiary hazard class
Packing group III
Marine pollutant (Sea) Not applicable

15. REGULATORY INFORMATION

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS RN	Weight-%	SARA 313 - Threshold Values %
Phthalic anhydride - 85-44-9	85-44-9	99.5 - 100.3	1.0

SARA 311/312 Hazard Categories

Acute health hazard No
Chronic Health Hazard No
Fire hazard No

Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phthalic anhydride 85-44-9	5000 lb	N/A	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any chemicals regulated by Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phthalic anhydride 85-44-9	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration NumberNot applicable

16. OTHER INFORMATION

Issue Date 27-Nov-2025

Revision Note

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet