

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking 1.1 Product identifier

Name	PIA
Trade name	PIA
Name REACH	Isophthalic acid
Chemical name	Isophthalic acid
Chemical family	Acid. Organic.
CAS number	121-91-5
EC number	204-506-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Specific uses

Raw material.
Use as an intermediate.
Polymer processing
Additive for manufacture of PET, Raw material for certain polyesters
Use in laboratories
Uses in Coatings

1.3 Details of the supplier of the safety data sheet

Supplier	Indorama Ventures Xylenes & PTA LLC
Address	1401 Finley Island Road Decatur, Alabama 35601 USA
Email	SDS@ivxp.indorama.net
Telephone number	256-340-5200

1.4 Emergency telephone number 24h

1 (800) 424-9300 – CHEMTREC (USA)

SECTION 2: Hazards identification

Hazard Classification: OSHA Specified Hazards: Combustible dust

Warning label items:

Signal word WARNING!

Hazard statement(s) May form combustible dust concentrations in air.

Precautionary statements**Prevention** P210: Keep away from heat/sparks/open flames – No smoking

P243: Take precautionary measures against static discharge.

Disposal P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Hazard(s) not otherwise classified (HNOC):** None known

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SECTION 3: Composition/information on ingredients**Substance/Mixture** Mono-constituent substance**Description** 1.3 benzene dicarboxylic acid

Product/ingredient	Identifiers	Concentration
Isophthalic acid	CAS-No: 121-91-5 EC: 204-506-4	95-100%

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures****Eye contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses. Get medical attention if irritation occurs.**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.**Skin contact** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.**Ingestion** Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first aid responders No action shall be taken involving any personal risk without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact Exposure to airborne concentrations above recommended exposure limits may cause irritation of the eyes.

Inhalation Exposure to airborne concentrations above recommended exposure limits may cause irritation of nose, throat, and lungs

Skin contact No known significant effects or critical hazards

Over-exposure signs/symptoms

Eye Contact Adverse symptoms may include the following:
irritation
redness

Inhalation Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact No specific data

Ingestion No specific data

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable In case of fire, use water spray, foam, dry chemical or CO₂

Not suitable Do not use water jet

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: Fine dust clouds may form explosive mixtures with air.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Fire-fighting measures Shut off all ignition sources. Use self-contained breathing apparatus if respirable dust and/or fumes occur

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel."

6.2 Environmental precautions Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations Not available

Industrial sector specific solutions Not available

SECTION 8: Exposure controls/personal protective The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s)

8.1 Control parameters Occupational exposure limits

Product/ingredient name	Exposure limit values
Isophthalic acid – respirable dust	5 mg/m ³ US AIHA-WEELs (Workplace Environmental Exposure Level)
Isophthalic acid – total dust	10 mg/m ³ US AIHA-WEELs (Workplace Environmental Exposure Level)

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Derived effect levels – isophthalic acid

Type	Exposure	Value	Population	Effects
DNEL	Long term Dermal	25 mg/kg bw/day	Workers	Systemic
DNEL	Long term Inhalation	8.8 mg/m ³	Workers	Systemic
DNEL	Long term Dermal	12.5 mg/kg bw/day	Human via the environment	Systemic
DNEL	Long term Inhalation	2.2 mg/m ³	Human via the environment	Systemic
DNEL	Long term Oral	1.3 mg/kg bw/day	Human via the environment	Systemic

Predicted effect concentrations – isophthalic acid

Type	Compartment Detail	Value	Method Detail
PNEC	Fresh water	0.907 mg/l	Assessment Factors
PNEC	Marine	0.0907 mg/l	Assessment Factors
PNEC	Fresh water	9.07 mg/l	Assessment Factors
PNEC	Sewage Treatment Plant	16 mg/l	Assessment Factors
PNEC	Fresh water sediment	1,246 mg/kg	-
PNEC	Marine water sediment	0.1246 mg/kg	-
PNEC	Soil	1.69 mg/kg	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid, splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: recommended safety glasses.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): Recommended to wear protective gloves

Body protection

Recommended: Wear protective clothing. Wear protective gloves

Other skin protection

Suitable protective footwear

Respiratory protection

Avoid breathing dust. Wear face protection. If ventilation is inadequate, use respirator that will protect against dust/mist.

Environmental exposure controls Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: Physical and chemical properties

Physical state	Solid [Crystalline powder]
Color	White
Odor	Not perceptible
Odor threshold	Not available
pH	3.5
Melting point/freezing point	345° to 348°C
Initial boiling point and boiling	Not available
Flash point	Not applicable
Evaporation rate	Not available
Flammability (solid, gas)	Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shock and mechanical impacts, oxidizing materials, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture
Burning time	Not available
Burning rate	Not available
Upper/lower flammability or explosive limits	Not available
Vapor pressure	0.0000000032 kPa [room temperature]
Relative density	1.54
Density	1.53 g/cm ³ [25°C]
Solubility(ies)	Not available
Partition coefficient: n-octanol/water	1.76
Auto-ignition temperature	>650°C

Decomposition temperature Not available

Viscosity Not available

Explosive properties Non-explosive in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidizing materials, combustible materials, organic materials, metals, acids, alkalis and moisture

Oxidizing properties Not available

9.2 Other information

Heat of combustion -19.4 kJ/g

No additional information

SECTION 10: Stability and reactivity

10.1 Reactivity No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability The product is stable

10.3 Possibility of hazardous reaction Under normal conditions of storage and use, hazardous reaction will not occur

10.4 Conditions to avoid Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.

10.5 Incompatible materials Reactive or incompatible with the following materials: oxidizing materials

10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
isophthalic acid	LD50 Oral	Rat - Male, Female	>5000 mg/kg Fixed dose	-

Conclusion/Summary Non toxic

**Irritation/Corrosion
Conclusion/Summary**

Eyes Not classified
**Sensitization
Conclusion/Summary**

Skin Not classified

**Mutagenicity
Conclusion/Summary** Not available
**Carcinogenicity
Conclusion/Summary** Not available

**Reproductive toxicity
Conclusion/Summary** Not available

**Teratogenicity
Conclusion/Summary** Not available

Specific target organ toxicity (single exposure)
Not available

Specific target organ toxicity (repeated exposure)
Not available

Aspiration hazard
Not available

Information on the likely routes of exposure Routes of entry anticipated: Inhalation

Potential acute health effect

Eye contact Exposure to airborne concentrations above recommended exposure limits may cause irritation to the eyes

Inhalation Exposure to airborne concentrations above recommended exposure limits may cause irritation of the nose, throat and lungs

Skin contact No known significant effects or critical hazards

Ingestion No known significant effects or critical hazards

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
Respiratory tract irritation
Coughing

Skin contact No specific data

Ingestion No specific data

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available

Potential delayed effects Not available

Potential chronic health effects Not available
Conclusion/Summary Not available

General Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation
Carcinogenicity No known significant effects or critical hazards
Mutagenicity No known significant effects or critical hazards
Teratogenicity No known significant effects or critical hazards
Developmental effects No known significant effects or critical hazards
Fertility effects No known significant effects or critical hazards
Distribution Able to penetrate the blood-brain barrier
Metabolism Rapidly metabolized
Elimination Excreted via the urine

Other information Not available

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Isophthalic acid	Acute NOEC 20,1 mg/l Fixed dose	Crustaceans – Daphnia magna	40 hours Fixed dose

Conclusion/Summary Not available

12.2 Persistence and degradability

Conclusion/Summary Not available

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Isophthalic acid	1.76	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) Not available

Mobility Not available

12.5 Results of PBT and vPvB assessment

PBT No
P: not applicable. B: Not applicable. T: No.
vPvB vp: Not applicable. vB: Not applicable

12.6 Other adverse effects No known significant effects or critical hazards

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste.

Packaging

Methods of disposal The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No	No	No
Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Additional information	-	-	-

SECTION 15 Regulatory Information

15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture:

SARA 311-312 Hazard Classification(s):
fire hazard

US EPCRA (SARA Title III) Section 313 – Toxic Chemical List
None

OSHA: hazardous

TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

**International lists
National inventory**

Australia	This material is listed or exempted
Canada	This material is listed or exempted
China	This material is listed or exempted
Japan	This material is listed or exempted
Malaysia	This material is listed or exempted
New Zealand	This material is listed or exempted
Philippines	This material is listed or exempted
Republic of Korea	This material is listed or exempted
Taiwan	This material is listed or exempted

SECTION 16 Other Information

HMIS® Hazard Ratings: Health-1, Flammability – 1, Chemical Reactivity – 0

HMIS® are intended only for rapid, general identification of the specific hazard. To understand adequately the safe handling of this material, all the information contained in this SDS must be considered.

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