SAFETY DATA SHEET

p-Phenylenediamine

Quzhou Fangda Chemical Industry Co., Ltd.

SDS

- **According to GHS (Sixth RevisedEdition)**

Section1 Product and CompanyIdentification

> ProductIdentifier

Product Name	p-Phenylenediamine
Synonyms	-
CAS No.	106-50-3
EC No.	203-404-7
Molecular Formula	C6H8N2

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Quzhou Fangda Chemical Industry Co., Ltd.
Application Address	NO.7 NANSHAN ROAD,QUZHOU,ZHEJIANG CHINA
Applicant Post Code	324000
Manufacturer Name	Quzhou Fangda Chemical Industry Co., Ltd.
Manufacturer Address	No.7 Nanshan Road,Quzhou,Zhejiang,China
Manufacturer Post Code	324000

Section2 HazardsIdentification

Hazard class and label elements of the product according to GHS (the sixth revised edition):

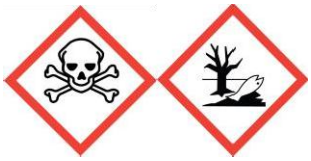
> GHS HazardClass

Acute Toxicity – Oral	Category 3

Acute Toxicity – Dermal	Category 3
Sensitization – Skin	Category 1
Eye Damage/Irritation	Category 2A
Acute Toxicity – Inhalation	Category 3
Hazardous To The AquaticEnvironment – Short-Term(Acute) Hazard	Category 1
Hazardous To The Aquatic Environment – Long-Term (Chronic) Hazard	Category 1

> GHS LabelElements

Pictogram



Signal Word **Danger**

> HazardStatements

H301	Toxic if swallowed
H311	Toxic in contact with skin
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H331	Toxic if inhaled
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

> PrecautionaryStatements

Prevention

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash ... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowedoutof theworkplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response

P312	Call a POISON CENTER/doctor,if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.

P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

Section3 Composition/Information onIngredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
p-Phenylenediamine	99.9	106-50-3	203-404-7

Section4 First AidMeasures

> Description of First Aid Measures

General Advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of First-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute andDelayed

1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of Any Immediate Medical Attention and Special TreatmentNeeded

1 Treat symptomatically.

2 Symptoms may be delayed.

Section5 Fire FightingMeasures

> ExtinguishingMedia

Suitable Extinguishing Media	Dry chemical, carbon dioxide or alcohol-resistant foam.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter or spread fire.

> Specific Hazards Arising from the Substance orMixture

1 May emit poisonous fumes on fire.

2 Containers may explode when heated.

3 Fire exposed containers may vent contents through pressure relief valves.

4 May expansion or decompose explosively when heated or involved in fire.

> Advice forFirefighters

1 As in any fire, wear self-contained breathingapparatus (MSHA/NIOSH approved orequivalent)and full protectivegear.
2 Fight fire from a safe distance, with adequate cover.
3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section6 Accidental ReleaseMeasure

> Personal Precautions, Protective Equipment and EmergencyProcedures

1 Ensure adequate ventilation. Remove all sources of ignition.
2 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> EnvironmentalPrecautions

1 Prevent further leakage or spillage if safe to do so.
2 Discharge into the environment must be avoided.

> Methods and Materials for Containment and CleaningUp

1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section7 Handling andStorage

> Precautions forHandling

1 Handling is performed in a well ventilated place.
2 Wear suitable protective equipment.
3 Avoid contact with skin and eyes.
4 Keep away from heat/sparks/open flames/ hot surfaces.
5 Take precautionary measures against static discharges.

> Precautions forStorage

1 Keep containers tightly closed.
2 Keep containers in a dry, cool and well-ventilated place.
3 Keep away from heat/sparks/open flames/ hot surfaces.
4 Store away from incompatible materials and foodstuff containers.

Section8 Exposure Controls/PersonalProtection

> ControlParameters

Occupational Exposure Limit Values

Component	Country/Region	Limit Value - Eight Hours	Limit Value - Short Term

		ppm	mg/m³	ppm	mg/m³
p-Phenylenediamine 106-50-3	USA - OSHA	-	0.1	-	-
	South Korea	-	0.1	-	-
	Ireland	-	0.1	-	-
	Germany (AGS)	-	0.1	-	0.2
	Denmark	-	0.1	-	0.2
	Australia	-	0.1	-	-

Biological Limit Values
No information available
Monitoring Methods

1. EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2. GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air（Series standard）.

> EngineeringControls

1. Ensure adequate ventilation, especially in confined areas.
2. Ensure that eyewash stations and safety showers are close to the workstation location.
3. Use explosion-proof electrical/ventilating/lighting/equipment.
4. Set up emergency exit and necessary risk-elimination area.

> Personal ProtectionEquipment

Eye Protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand Protection	Wear protective gloves（such as butyl rubber），passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

Section9 Physical and ChemicalProperties

Appearance: Light red solid particles
Odor: No information available
Odor Threshold: No information available
pH: No information available
Melting Point/Freezing Point (℃): 139~147
Initial Boiling Point and Boiling Range (℃): 267
Flash Point (℃)(Closed Cup): Not applicable
Evaporation Rate: Not applicable
Flammability: No information available
Upper/lower explosive limits[%(v/v)]: Upper limit: No information available; Lower limit: 1.5
Vapor Pressure (MPa): Not applicable
Vapor Density (g/mL): Not applicable
Relative Density (g/cm³): 1.1
Solubility: Partly miscible with water
n-Octanol/Water Partition Coefficient: No information available
Auto-Ignition Temperature(℃): 400
Decomposition Temperature (℃): No information available
Kinematic Viscosity (mm²/s): Not applicable
Particle characteristics: No information available

Section10 Stability andReactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions. 。
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	No information available。
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	No information available
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section11 ToxicologicalInformation

> AcuteToxicity

Component	CAS No.	LD_{50}(Oral)	LD_{50}(Dermal)	LC_{50}(Inhalation, 4h)
p-Phenylenediamine	106-50-3	80mg/kg(Rat)	No information available	0.92.mg/L(Rat)

> SkinCorrosion/Irritation

No information available

> Serious EyeDamage/Irritation

Causes serious eye irritation(Category 2A)(p-Phenylenediamine)

> SkinSensitization

May cause an allergic skin reaction(Category 1)(p-Phenylenediamine)

> RespiratorySensitization

No information available

> Germ CellMutagenicity

No information available

> Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	106-50-3	p-Phenylenediamine	Category 3	Not Listed

> ReproductiveToxicity

No information available

> Reproductive Toxicity(Additional)

No information available

> STOT-SingleExposure

No information available

> STOT-RepeatedExposure

No informationavailable

> AspirationHazard

No informationavailable

Section12 EcologicalInformation

> Acute AquaticToxicity

Component	CAS No.	Fish	Crustaceans	Algae
p-Phenylenediamine	106-50-3	LC_{50}: 0.066mg/L (96h)(Fish)	EC_{50}: 0.33mg/L (48h)	ErC_{50}: 0.18mg/L (72h)

> Chronic AquaticToxicity

Component	CAS No.	Fish	Crustaceans	Algae
p-Phenylenediamine	106-50-3	No information available	NOEC: 0.043mg/L	NOEC: 0.01mg/L

> Others

Persistence and Degradability No information available

Bioaccumulative Potential No information available

Mobility in Soil No information available

Results of PBT and vPvB Assessment p-Phenylenediamine does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Section13 DisposalConsiderations

Waste Chemicals If medical advice is needed, have product container or label at hand.

Contaminated Packaging Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.

Disposal Recommendations Refer to section 13.1and 13.2.

Section14 TransportInformation

Transporting Label

Marine pollutant	
UN Number	1673
UN Proper Shipping Name	PHENYLENEDIAMINES (p-)
Transport Hazard Class	6.1
Transport Subsidiary Hazard Class	None
Packing Group	Ⅲ

Section15 RegulatoryInformation

> International ChemicalInventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
p-Phenylenediamine	√	√	√	√	√	√	√	√	√

【EINECS】 European Inventory of Existing Commercial Chemical Substances.
【TSCA】 United States Toxic Substances Control ActInventory.
【DSL】 Canadian Domestic SubstancesList.
【 IECSC 】 China Inventory of Existing Chemical Substances.
【 NZIoC 】 New Zealand Inventory of Chemicals.
【 PICCS 】 Philippines Inventory of Chemicals and Chemical Substances.
【KECI】 Existing and Evaluated ChemicalSubstances.
【AICS】 Australia Inventory of ChemicalSubstances.
【ENCS】 Existing And New ChemicalSubstances.

Section16 AdditionalInformation

Creation Date	2022/12/28
Revision Date	2022/12/28

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 6th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user’ s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.