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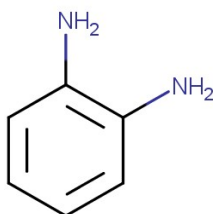
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1. General Statement

o-Phenylenediamine is aromatic diamine and is an important precursor to many heterocyclic compounds. Combustible substance, poorly flammable. Soluble in water. Acute or chronic health hazards result from the substance. The substance is hazardous to the aquatic environment.

2. Chemical identity

Name : o-phenylenediamine
CAS number(s) : 95-54-5
EC number : 202-430-6
Molecular formula : C₆H₈N₂
Structure :



3. Uses and Benefits

Manufacture of dyes, photographic developing agent, organic synthesis, laboratory reagent. Treatment with nitrous acid gives benzotriazole, a corrosion inhibitor. Condensation of substituted o-phenylenediamine with various diketones is used in the preparation of a variety of pharmaceuticals.

4. Physical / chemical properties

Property	Value
Physical state :	Solid
Colour :	Colourless to white. On exposure to air: yellow-brown.
Odour :	No data available
pH :	7 - 8 at 20 °C
Melting point	102.1 °C
Boiling point :	256 °C (1013 hPa)
Flash point :	156 °C
Density :	720 kg/m ³ (24 °C, Bulk density)
Solubility in Water:	Water: 3.9 g/100ml (20 °C)

GPS Safety Summary

o-phenylenediamine

CL-4: PUBLIC

5. Health Effects

Effect Assessment	Result
Acute toxicity (Oral / inhalation / dermal)	Toxic if swallowed, contact with skin or if inhaled.
Irritation / corrosion Skin / eye/ respiratory tract	Causes serious eye irritation.
Respiratory or skin sensitisation	May cause an allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	NA
Genotoxicity / Mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	Suspected of causing cancer.
Toxicity for reproduction	NA

6. Environmental Effects

Effect Assessment	Result
Aquatic toxicity	Yes
Fate and behavior	Result
Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

7. Exposure

Human health

The substance Suspected to cause cancer ,Suspected of causing genetic defects, cause eye irritation and also it may cause an allergic skin reaction. Breathing o-Phenylenediamine can irritate the nose and throat causing coughing and wheezing. The most likely route of human exposure (workers) is through skin.In industrial settings, ingestion is not an anticipated route of exposure. Workers may be exposed during (un)loading, mixing, sampling, analysis or maintenance operations and particularly in case of batch processes.The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

Careless handling or accidental spillage of the chemical could result in exposure to potentially hazardous levels of chemicals.the substance is handled in closed systems, and it is usual for operators to wear impervious suits and self-contained breathing apparatus for operations involving the transfer of dimethyl

GPS Safety Summary

o-phenylenediamine

CL-4: PUBLIC

sulfate, where there is the possibility of greater exposure. Industrial workers should ensure that they follow the advice found in the extended safety data sheet (SDS).

Environment

Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. Spillage shall be quickly collected in the event of an accidental release. More information about release measures and accidental release measures are available in the extended safety data sheet.

8. Risk Management Recommendations

Human health measures

Organizational	A basic standard of occupational hygiene is recommended. Ensure operatives are well informed of the hazards and trained to minimise exposures.Ensure regular inspection and maintenance of equipment and machines.Handle and store according to the indications of the Safety Data Sheet.	
Protection	Eye protection:	Face shield (EN 166). In case of dust production: protective goggles (EN 166)
	Skin and body protection:	Protective clothing (EN 14605 or EN 13034). In case of dust production: head/neck protection. In case of dust production: dustproof clothing (EN 13982)
	Respiratory protection:	High concentration or prolonged activity: self contained breathing apparatus.In the case of vapor formation: use a respirator with an approved filter
Engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.Ensure good ventilation of the work station.	
Environment protective measures		
Products must not be released into water without pre-treatment. Neutralize wastewater before release.		

9. First-aid measures

First-aid measures after inhalation : Remove the person to fresh air and keep them comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs, get medical advice /attention.

First-aid measures after eye contact : 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..

First-aid measures after ingestion : Rinse mouth. Call a physician immediately.

10. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

Unsuitable extinguishing media : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide -carbon dioxide)

Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Fight fire from a safe distance and protected location. Do not enter a fire area without proper protective equipment, including respiratory protection.

11. Accidental release measures

Protective equipment : Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Dust cloud production: dust-tight suit (EN 13982).

Environmental precautions: Avoid release to the environment.

For containment : Collect spillage..

12. Disposal consideration

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations : Remove waste in accordance with local and/or national regulations. Do not discharge into drains or the environment. Dispose of an authorized waste collection point. Hazardous waste shall not be mixed together with other waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

13. Handling and storage

Precautions for safe handling : Obtain special instructions before use. Do not handle it until all safety precautions have been read and understood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

14. Classification and Labeling

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H301 - Toxic if swallowed
H312+H332 - Harmful in contact with skin or if inhaled
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H341 - Suspected of causing genetic defects.
H351 - Suspected of causing cancer.
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US)

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust, fume, gas, mist, vapours, spray.
P264 - Wash hands, forearms and face 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 must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.

P301+P310 - If swallowed: Immediately call a poison center or 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.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P312 - Call a poison center or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice or attention.
P337+P313 - If eye irritation persists: Get medical advice or attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

GPS Safety Summary

o-phenylenediamine

CL-4: PUBLIC

15. Conclusion

o-phenylenediamine appears as colorless monoclinic crystals if pure. Used in manufacture of dyes, photography, organic synthesis. The substance Suspected to cause cancer ,Suspected of causing genetic defects, cause eye irritation and also it may cause an allergic skin reaction.Care should be taken to avoid releases of these products to sewage, drainage systems and water bodies. The exposure must be kept as minimum as possible by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

16. Contact Information within company

Manufacturer

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This GPS safety summary is intended to give general information about the health, safety and environmental and not intended to provide in-depth details. To obtain the most accurate and current information, consult the appropriate Safety Data Sheet (SDS) prior to use of the material named herein.