

1: Identification of substance / mixture

1. Product Identifier

Substance

Product Name **1,2-Phenylenediamine**
Product Code 094521
CAS Number 95-54-5
Other Names OPD
1,2-Diaminobenzene
o-Phenylenediamine

IUPAC

MFCD Number MFCD00007721

EC/EINECS

REACH Number

Index-No

2. Relevant identified uses of the substance or mixture and uses advised against

Research and Development

3. Details of the supplier of the safety data sheet

Fluorochem Ltd
Unit 14, Graphite Way
Hadfield
Derbyshire
SK13 1QH
UK

Telephone: +44(0)1457 860111
Fax: +44(0)1457 892799
Email: sds@fluorochem.co.uk



4. Emergency telephone number

+44(0)7855 268577 -

2. Hazards Identification

1. Classification of the substance or mixture

H301	Acute Tox. 3	
H312	Acute Tox. 4	
H317	Skin Sens. 1	
H319	Eye Irrit. 2	
H332	Acute Tox. 4	
H341	Muta. 2	
H351	Carc. 2	
H400	Aquatic Acute 1	
H410	Aquatic Chronic 1	

2. Label elements

Signal Word **Danger**



Hazard Statements

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects ..
H351	Suspected of causing cancer ..
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Phrases

P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P391	Collect spillage.
P501	Dispose of contents/container to local regulations

3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

3. Composition / Information on Ingredients

1. Substances

Product Name	Hazards	Concentration
1,2-Phenylenediamine		
CAS Number: 95-54-5	H301, H312, H317, H319, H332, H341, H351, H400, H410 Acute Tox. 3, Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 1, Carc. 2, Eye Irrit. 2, Muta. 2, Skin Sens. 1	<=100%

4. First Aid Measures

1. Description of first aid measures

<i>Skin Contact</i>	P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
<i>Eye Contact</i>	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse opened eye for several minutes under running water.
<i>Ingestion</i>	P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
<i>Inhalation</i>	P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

2. Most important symptoms and effects

There may be irritation and redness.

3. Indication of any immediate medical attention

No additional measures required

5. Firefighting measures

1. Extinguishing Media

<i>Suitable</i>	Carbon dioxide. Dry chemical powder.
<i>Unsuitable</i>	no data

2. Special Hazards arising from the substance or mixture

In combustion toxic fumes may form.

3. Advice for Fire Fighters

Wear self-contained breathing apparatus.
 Wear protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures

1. Personal Precautions

Do not attempt to take action without suitable protective clothing – see section 8 of SDS.
 Remove all incompatible materials as outlined in section 10 of SDS.

2. Environmental Precautions

Do not discharge into drains or rivers.
Contain the spillage using bunding.

3. Methods & Materials

P391: Collect spillage.
Mix with sand or vermiculite.
Transfer to a closable, labelled salvage container for disposal by an appropriate method.

4. Preventing the occurrence of secondary hazards.

No Special Measures Required

7. Handling and Storage

1. Personal Precautions

<i>Safe Handling</i>	Ensure there is sufficient ventilation of the area. P273: Avoid release to the environment.
<i>Protection against explosions and fires</i>	P202: Do not handle until all safety precautions have been read and understood. P363: Wash contaminated clothing before reuse.

2. Conditions for safe storage, including any incompatibilities

<i>Managing Storage Risks</i>	Store in cool, well ventilated area. Keep container tightly closed.
<i>Storage Controls</i>	No special requirements
<i>Maintaining Integrity</i>	Keep in tightly closed container in cool area away from direct sunlight or heat sources.
<i>Other advice</i>	no further information available

3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

8. Exposure Controls/Personal Protection

1. Control Parameters

No Data Available

2. Exposure Controls

<i>General protective and hygiene measures</i>	P280: Wear protective gloves/protective clothing/eye protection/face protection. Wash hands during breaks and at the end of handling the material Immediately remove any contaminated clothing
<i>Engineering measures</i>	P271: Use only outdoors or in a well-ventilated area.
<i>Eye / Face Protection</i>	Safety Glasses with side-shields.
<i>Hand protection</i>	Protective gloves.
<i>Respiratory protection</i>	P261: Avoid breathing dust/fume/gas/mist/vapours/spray. Use breathing protection with high concentrations
<i>Skin protection</i>	Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practice. Wash and dry hands. Protective clothing.
<i>Other personal protection advice</i>	no data

9. Physical and Chemical Properties

1. Physical and Chemical Properties

Appearance	Solid
Odour	No Data Available
Odour threshold	No Data Available
PH	No Data Available
Melting point / Freezing point	100-102°C
Initial boiling point and boiling range	256-258°C
Flash point	No Data Available
Evaporation rate	No Data Available
Flammability(solid,gas)	No Data Available
Upper/lower flammability or explosive limits	No Data Available
Vapour pressure	No Data Available
Vapour density	No Data Available
Relative density	1.030
Solubility(ies):	No Data Available
Partition coefficient: n-octanol/water	No Data Available
Auto-ignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	No Data Available
Oxidising properties	No Data Available

2. Other Information

No additional information available

10. Stability and Reactivity

1. Reactivity

no unusual reactivity

2. Stability

Stable under normal conditions.

3. Possibility of Hazardous Reactions

no hazardous reactions known

4. Conditions to Avoid

no specific conditions to avoid

5. Incompatible Materials

Oxidising agents.

6. Hazardous Decomposition Products

In combustion emits toxic fumes.

In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

In combustion emits toxic fumes of nitrogen oxides.

11. Toxicology information

1. Information

Acute Toxicity

Oral LD50 (rat) 510mg/kg

Remarks: Autonomic Nervous System: Other (direct) parasympathomimetic. Behavioral: Convulsions or effect on seizure threshold. Behavioral: Muscle weakness.

Oral LD50 (mouse) 366mg/kg

Inhalation LC50 (rat) 4h - 3.4mg/l

Skin corrosion/irritation

irritant for skin and mucous membranes

Serious eye

Damage/irritation

Causes serious eye irritation.

<i>Respiratory or skin sensitisation</i>	May cause an allergic skin reaction
<i>Germ Cell mutagenicity</i>	In vitro tests showed mutagenic effects Genotoxicity in vitro - rat - Liver Unscheduled DNA synthesis Genotoxicity in vitro - Human - lymphocyte DNA damage Genotoxicity in vitro - Human - HeLa cell DNA inhibition Genotoxicity in vitro - Human - Lymphocyte Sister chromatid exchange Genotoxicity in vitro - mouse - Oral DNA inhibition Genotoxicity in vitro - mouse - Oral Micronucleus test
<i>Carcinogenicity</i>	Limited evidence of carcinogenicity in animal studies.
<i>Reproductive toxicity</i>	not known
<i>STOT-single exposure</i>	May cause damage to organs
<i>STOT-repeated exposure</i>	not known
<i>Aspiration hazard</i>	not known

2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

12. Ecological Information

1. Toxicity

Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (water flea) - 1.4mg/l - 48h

2. Persistence and degradability

not known

3. Bio-Accumulative Potential

not known

4. Mobility and Soil

not known

5. Results of PBT & vPvB assessment

not known

6. Other adverse effects

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

13. Disposal Considerations

1. Waste Treatment Methods

Disposal Operations

Disposal of Packaging Disposal must be made according to official regulations.

14. Transport Information

Air (ICAO)

- UN Number:** 1673
- Shipping Name:** PHENYLENEDIAMINES (o-, m-, p-)
- Transport hazard class(es):** : 6.1 Sub Class :



- 4. **Packing group:** III
- 5. **Environmental hazards:**
- 6. **Special Precautions for user:**
- 7. **Transport in bulk:**

Road (ADR)

- 1. **UN Number:** 1673
- 2. **Shipping Name:** PHENYLENEDIAMINES (o-, m-, p-)
- 3. **Transport hazard class(es):** : 6 Sub Class :



- 4. **Packing group:** III
- 5. **Environmental hazards:**
- 6. **Special Precautions for user:**
- 7. **Transport in bulk:**

Sea (IMDG)

- 1. **UN Number:** 1673
- 2. **Shipping Name:** PHENYLENEDIAMINES (o-, m-, p-)
- 3. **Transport hazard class(es):** : 6.1 Sub Class :



- 4. **Packing group:** III
- 5. **Environmental hazards:**
- 6. **Special Precautions for user:**
- 7. **Transport in bulk:** IBCINS: IBC08
IBCPPROV: B3

TANKPROV: TP33

15. Safety, health, environmental and national regulations

1. Safety, health, environmental and national regulations:

product is not subject to any additional regulations or provisions

2. Safety Assessment

No Chemical Safety Assessment

16. Other Information

1. Other Information:

ADR: Accord Europeen sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)
RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association
ICAO:International Civil Aviation Organization
ICAO-TI: Technical Instructions by the ICAO
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS:Chemical Abstracts Service

2. Associated risk phrases according to European directive 67/548/EEC

3. Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this material safety data sheet, or in combination with any other product or process, is the responsibility of the user.