SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product name : 4,4'-Diaminodiphenyl Ether
CAS No. : 101-80-4

Manufacturer or supplier's details

Company : Heynova (Shanghai) New Material Technology CO., Ltd
Address : Building 3, No. 690 Bibo Road, Pudong New Area, Shanghai, China

Telephone : +86-178-2110-2608
E-mail address : info@heynovachem.com

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance : Solid form
Color : white - yellow

Toxic if swallowed, in contact with skin or if inhaled. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs (Blood) through prolonged or repeated exposure. May cause damage to organs (Thyroid, Liver, Kidney, Testes) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

GHS Classification

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 3

Skin sensitization : Category 1

Germ cell mutagenicity : Category 1B

Carcinogenicity : Category 1B

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure : Category 1 (Blood)

Specific target organ toxicity - repeated exposure : Category 2 (Thyroid, Liver, Kidney, Testes)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H301 + H311 + H331 Toxic if swallowed, in contact with skin or if inhaled.
H317 May cause an allergic skin reaction.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs (Blood) through prolonged or repeated exposure.
H373 May cause damage to organs (Thyroid, Liver, Kidney, Testes) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P264 Wash skin 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 allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of water.Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Not classified based on available information.

Health hazards

Toxic if swallowed. Toxic if inhaled. Toxic in contact with skin. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. May cause damage to organs through prolonged or repeated exposure.

Environmental hazards

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

Chemical name	CAS RN	Concentration (% w/w)
4,4'-Diaminodiphenyl Ether	101-80-4	>= 98 -<= 100

4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor/ physician.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off with soap and plenty of water.
Immediately call a POISON CENTER or doctor/ physician.

In case of eye contact : Rinse with plenty of water.
If easy to do, remove contact lens, if worn.
Immediately call a POISON CENTER or doctor/ physician.

If swallowed : Immediately call a POISON CENTER or doctor/ physician.
Rinse mouth.

Most important symptoms and effects, both acute and delayed : None known.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry powder, Foam, Water spray, Carbon dioxide (CO2)

Specific hazards during fire fighting : No information available.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Immediately evacuate personnel to safe areas.
Remove undamaged containers from fire area if it is safe to do so.

Special protective equipment for fire-fighters : Use personal protective equipment.

ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear suitable protective equipment.
Keep people away from and upwind of spill/leak.
Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

Environmental precautions : Should not be released into the environment.

Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.

6. HANDLING AND STORAGE

Handling

Technical measures	:	Prevent dispersion of dust.
Local/Total ventilation	:	Ensure adequate ventilation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Use a local exhaust ventilation.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Wash hands and face thoroughly after handling.
Avoidance of contact	:	Oxidizing agents

Storage

Conditions for safe storage	:	Keep container tightly closed. Store in a cool and shaded area. Keep in a well-ventilated place. Store locked up.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection	:	Dustproof gas mask Self-contained breathing apparatus
Eye/face protection	:	Safety glasses Safety goggles Face-shield
Skin and body protection	:	Impervious protective clothing
Hand protection	:	Impervious gloves

*Use personal protective equipment(PPE) approved under appropriate government standards and follow local and national regulations.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	solid
Color	:	white - yellow
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	192 °C
Boiling point/boiling range	:	No data available

Flash point	:	No data available
Evaporation rate	:	No data available
Flammability	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	90 hPa (20 °C)
Solubility(ies)		
Water solubility	:	0.048 g/l insoluble (20 °C)
Solubility in other solvents	:	soluble Solvent: Acetone insoluble Solvent: Benzene insoluble Solvent: Ethanol
Partition coefficient: n-octanol/water (log value)	:	1.36
Autoignition temperature	:	490 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Molecular weight	:	200.24 g/mol

8. STABILITY AND REACTIVITY

Reactivity	:	No data available
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None under normal processing.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	Carbon monoxide, Carbon dioxide (CO2), Nitrogen oxides (NOx)

9. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Assessment: The component/mixture is toxic after single ingestion.
Acute inhalation toxicity	:	Assessment: The component/mixture is toxic after short term inhalation.
Acute dermal toxicity	:	Assessment: The component/mixture is toxic after single contact with skin.

Components:

4,4'-Diaminodiphenyl Ether:

Acute oral toxicity	:	Assessment: The component/mixture is toxic after single ingestion.
Acute inhalation toxicity	:	Assessment: The component/mixture is toxic after short term inhalation.
Acute dermal toxicity	:	Assessment: The component/mixture is toxic after single contact with skin.
Skin corrosion/irritation	:	No information available.
Serious eye damage/eye irritation	:	No information available.

Respiratory or skin sensitization

Product:

Assessment	:	May cause sensitization by skin contact.

Components:

4,4'-Diaminodiphenyl Ether:

Assessment	:	May cause sensitization by skin contact.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment	:	Presumed to induce heritable mutations in the germ cells of humans.

Components:

4,4'-Diaminodiphenyl Ether:

Germ cell mutagenicity - Assessment	:	Presumed to induce heritable mutations in the germ cells of humans.

Carcinogenicity

Product:

Carcinogenicity - Assessment	:	Presumed to have carcinogenic potential for humans

Components:

4,4'-Diaminodiphenyl Ether:

Carcinogenicity - Assessment	:	Presumed to have carcinogenic potential for humans

Reproductive toxicity

Product:

Reproductive toxicity - Assessment	:	Suspected human reproductive toxicant

Components:

4,4'-Diaminodiphenyl Ether:

Reproductive toxicity - Assessment	:	Suspected human reproductive toxicant
STOT-single exposure	:	No information available.

STOT-repeated exposure

Product:

Target Organs	:	Blood
Assessment	:	Causes damage to organs through prolonged or repeated exposure.
Target Organs	:	Thyroid, Liver, Kidney, Testes
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Components:

4,4'-Diaminodiphenyl Ether:

Target Organs	:	Blood
Assessment	:	Causes damage to organs through prolonged or repeated exposure.
Target Organs	:	Thyroid, Liver, Kidney, Testes
Assessment	:	May cause damage to organs through prolonged or repeated exposure.
Repeated dose toxicity	:	No information available.
Aspiration toxicity	:	No information available.
RTECS No.	:	BY7900000 (4,4'-Diaminodiphenyl Ether)

10. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Components:

4,4'-Diaminodiphenyl Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 22 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.92 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Scenedesmus capricornutum (fresh water algae)): 7.9 mg/l Exposure time: 72 h NOEC (Scenedesmus capricornutum (fresh water algae)): < 3.75 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 5 mg/l Exposure time: 7 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 0.018 mg/l Exposure time: 7 d

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.

Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Persistence and degradability

No data available

Bioaccumulative potential

Components:

4,4'-Diaminodiphenyl Ether:

Partition coefficient: n-octanol/water (log value)	:	1.36

Mobility in soil

Components:

4,4'-Diaminodiphenyl Ether:

Distribution among environmental compartments	:	Koc: 315

Other adverse effects

No data available

11. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Disposal in accordance with local and national regulations. Entrust disposal to a licensed waste disposal company.
Contaminated packaging	:	Disposal in accordance with local and national regulations. Before disposal of used container, remove contents completely.

12. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 2811
Proper shipping name	:	Toxic solid, organic, n.o.s.
Class	:	6.1
Packing group	:	III

IMDG-Code

UN number	:	UN 2811
Proper shipping name	:	TOXIC SOLID, ORGANIC, N.O.S.
Class	:	6.1
Packing group	:	III
EmS Code	:	F-A, S-A

Domestic regulation

GB 6944/12268

UN number	:	UN 2811
Proper shipping name	:	TOXIC SOLID, ORGANIC, N.O.S.
Class	:	6.1
Packing group	:	III

13. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	None of the components of this product are on the Canadian DSL, but all are on the NDSL 4,4'-Diaminodiphenyl Ether
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

14. OTHER INFORMATION

Revision Date	:	2025/02/15
Date format	:	yyyy/mm/dd

Disclaimer

This SDS was prepared sincerely based on the information obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. The products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling operations, sufficient care should be taken, in addition to the safety measures suitable for the given situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.