

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
Issued: 2024-01-15
Replaces SDS: 2022-04-04



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

1.1. Product identifier

Trade name

Diphenylamine

CAS number

122-39-4

EC number

204-539-4

Index No.

612-026-00-5

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

Relevant identified uses

Research and development.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Acute toxicity, oral, hazard category 3
 Acute toxicity, dermal, hazard category 3
 Acute toxicity, inhalation, hazard category 3
 Specific Target Organ Toxicity — Repeated exposure, hazard category 2
 Hazardous to the aquatic environment — Acute hazard category 1
 Hazardous to the aquatic environment — Chronic hazard category 1

Hazard statements

H301, H311, H331, H373, H400, H410

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H301 Toxic if swallowed.
 H311 Toxic in contact with skin.
 H331 Toxic if inhaled.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H410 Very toxic to aquatic life with long lasting effects.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



Precautionary statements

P260 Do not breathe dust.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P284 wear respiratory protection.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P302 + P352 IF ON SKIN: Wash with plenty of water/.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P314 Get medical advice/attention if you feel unwell.
 P391 Collect spillage.
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
diphenylamine	122-39-4 204-539-4 01-2119488966-13 612-026-00-5	100%	Acute Tox. 3 - oral, Acute Tox. 3 - dermal, Acute Tox. 3 - inhalation, STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1	H301, H311, H331, H373, H400, H410 - -	-

Molecular weight

169.22

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



Inhalation

Toxic if inhaled. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact

In case of skin contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor. The casualty should be transferred to hospital for further treatment.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Information for doctors

No data available.

4.2. Most important symptoms and effects, both acute and delayed

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. See section 11 for more detailed information on health effects and symptoms.

Inhalation

Single exposure may cause the following adverse effects: Difficulty in breathing. Unconsciousness, possibly death.

Skin contact

Single exposure may cause the following adverse effects: Unconsciousness, possibly death.

Eye contact

Single exposure may cause the following adverse effects: Severe irritation. Unconsciousness, possibly death.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No special treatment requirement.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Toxic.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrous gases (NO_x).

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. Avoid dust formation. For personal protection, see section 8.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. This product is toxic. Keep containers tightly closed. Immediate first aid is necessary. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Do not reuse empty containers.

General hygiene

Observe good chemical hygiene practices. Remove contaminated clothing immediately and wash skin with soap and water. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store at room temperature. Store in a dry place. Store in a closed container.

Storage class : Toxic storage.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Source	Remark	Year
diphenylamine	122-39-4 204-539-4	- -	- 20	-	UK. EH40 WEL	-

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



Hand protection

Wear protective gloves.
 Recommended gloves: Nitrile.
 Glove Thickness: 0.11mm
 Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Solid

Colour

White / off-white.

Odour

No data available

Melting point / freezing point

50 - 54 °C

Boiling point or initial boiling point and boiling range

302 °C

Flammability

No data available

Lower and upper explosion limit

No data available

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



Flash point

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

pH

No data available

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

No data available

Vapour pressure

No data available

Density and/or relative density

1.16 g/cm³

Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

The following applies in general to flammable organic substances and mixtures: when finely distributed, the risk of a dust explosion may be assumed.

10.2. Chemical stability

Stable under normal temperature conditions. Stable under the prescribed storage conditions.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
Issued: 2024-01-15
Replaces SDS: 2022-04-04



10.3. Possibility of hazardous reactions

Violent reactions possible with:
Strong acids, oxidising agents

10.4. Conditions to avoid

Avoid dust formation. Avoid dust close to ignition sources.

10.5. Incompatible materials

There are no known reactivity hazards associated with this product.

10.6. Hazardous decomposition products

See section 5.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Sub- stance name CAS / EC no.	Value / Dose	Exposure route	Duration of expos- ure	Method / Guideline	Remarks
diphenylamine 122-39-4 / 204-539-4	100.1mg/kg	ATE (Oral)	-	ATE = Acute Toxicity Estimate.	(Expert judgement.) - EC 1272/2008
diphenylamine 122-39-4 / 204-539-4	300mg/kg	ATE (Dermal)	-	ATE = Acute Toxicity Estimate.	(Expert judgement.) - EC 1272/2008
diphenylamine 122-39-4 / 204-539-4	0.51 mg/l (dust/mist)	ATE (Inhalation)	4 hours	ATE = Acute Toxicity Estimate.	(Expert judgement.) - EC 1272/2008

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Exposure route	Species	Method / Guideline
diphenylamine 122-39-4 / 204-539-4	Negative.	Oral	Mouse	OECD Test Guideline 471

STOT-repeated exposure

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
Issued: 2024-01-15
Replaces SDS: 2022-04-04



Product / Substance name CAS / EC no.	Result
diphenylamine 122-39-4 / 204-539-4	May cause damage to organs through prolonged or repeated exposure. - Kidneys. - Liver. - Spleen.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
diphenylamine 122-39-4 / 204-539-4	LC50	2.2mg/l	48 hours	Oryzias latipes (Red killifish)
diphenylamine 122-39-4 / 204-539-4	LC50	3.79mg/l	96 hours	Pimephales promelas (Fat-head Minnow)

Acute algae toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
diphenylamine 122-39-4 / 204-539-4	EC50	2.17mg/l	72 hours	Pseudokirchneriella subcapitata

Acute crustacean toxicity

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
Issued: 2024-01-15
Replaces SDS: 2022-04-04



Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
diphenylamine 122-39-4 / 204-539-4	EC50	2mg/l	48 hours	Daphnia magna

12.2. Persistence and degradability

Persistence and degradability

Product / Substance name CAS / EC no.	Type of test	Duration	Result
diphenylamine 122-39-4 / 204-539-4	aerobic	28 days	26% - The product is not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential

Product / Substance name CAS / EC no.	Bioconcentration factor (BCF)	Species
diphenylamine 122-39-4 / 204-539-4	253	Cyprinus carpio (Common carp)

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Dispose of contents/container in accordance with local regulations.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



SECTION 14: Transport information

14.1. UN number

2811

14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

TOXIC SOLID, ORGANIC, N.O.S. (Diphenylamine)

IMDG proper shipping name

TOXIC SOLID, ORGANIC, N.O.S. (Diphenylamine)

IATA proper shipping name

Toxic solid, organic, n.o.s. (Diphenylamine)

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



6.1 Environmental hazard

IMDG



6.1 Environmental hazard

IATA



6.1 Environmental hazard

ADR / RID Class

6.1

ADR / RID Classification code

T2

ADR / RID hazard identification number

60

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
 Issued: 2024-01-15
 Replaces SDS: 2022-04-04



IMDG Class

6.1

IATA Class

6.1

ADN Class

6.1

ADN Class Code

T2

14.4. Packing group

ADR / RID / ADN: III

IMDG: III

IATA: III

14.5. Environmental hazards

IMDG EmS

F-A, S-A

14.6. Special precautions for user

Tunnel restriction code: E

Transport category: 2

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC08

SECTION 15: Regulatory information

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

EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

No data available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Diphenylamine

Version number: 2.0
Issued: 2024-01-15
Replaces SDS: 2022-04-04



SECTION 16: Other information

Phrase meaning

Acute Tox. 3 - oral - Acute toxicity, oral, hazard category 3

Acute Tox. 3 - dermal - Acute toxicity, dermal, hazard category 3

Acute Tox. 3 - inhalation - Acute toxicity, inhalation, hazard category 3

STOT RE 2 - Specific Target Organ Toxicity — Repeated exposure, hazard category 2

Aquatic Acute 1 - Hazardous to the aquatic environment — Acute hazard category 1

Aquatic Chronic 1 - Hazardous to the aquatic environment — Chronic hazard category 1

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.