

# Safety data sheet Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Diphenylamine ≥99 %, p.a., ACS

article number: **9865**  
Version: **GHS 3.0 en**  
Replaces version of: 2022-02-07  
Version: (GHS 2)

date of compilation: 2016-10-24  
Revision: 2022-10-10

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

### 1.1 Product identifier

Identification of the substance **Diphenylamine ≥99 %, p.a., ACS**  
Article number 9865  
CAS number 122-39-4

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

Relevant identified uses: Laboratory chemical  
Laboratory and analytical use  
Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0  
**Telefax:** +49 (0) 721 - 56 06 149  
**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)  
**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

**e-mail (competent person):** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification acc. to GHS

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
3.1O	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.1D	Acute toxicity (dermal)	3	Acute Tox. 3	H311
3.1I	Acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.9	Specific target organ toxicity - repeated exposure	2	STOT RE 2	H373

For full text of abbreviations: see SECTION 16

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### The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure.

## 2.2 Label elements

### Labelling

#### Signal word

**Danger**

#### Pictograms

GHS06, GHS08



#### Hazard statements

H302	Harmful if swallowed
H311+H331	Toxic in contact with skin or if inhaled
H373	May cause damage to organs (spleen, liver, kidney) through prolonged or repeated exposure

#### Precautionary statements

##### Precautionary statements - prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray
P280	Wear protective gloves/protective clothing

##### Precautionary statements - response

P302+P352	IF ON SKIN: Wash with plenty of soap and water
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P311	Call a POISON CENTER or doctor/physician

##### Precautionary statements - storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed
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##### Precautionary statements - disposal

P501	Dispose of contents/container to industrial combustion plant
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## 2.3 Other hazards

### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	Diphenylamine
Molecular formula	$C_{12}H_{11}N$
Molar mass	169.2 $g/mol$
CAS No	122-39-4

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures



##### General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

##### Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

##### Following skin contact

After contact with skin, wash immediately with plenty of water.

##### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

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

Irritant effects, Cough, Dyspnoea, Cardiac arrhythmias, Vomiting

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

none

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media



##### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings  
water, foam, dry extinguishing powder, ABC-powder

##### Unsuitable extinguishing media

water jet

#### 5.2 Special hazards arising from the substance or mixture

Combustible.

##### Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures



##### For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

#### 6.2 Environmental precautions

Keep away from drains, surface and ground water.

#### 6.3 Methods and material for containment and cleaning up

##### Advice on how to contain a spill

Covering of drains. Take up mechanically.

##### Advice on how to clean up a spill

Take up mechanically. Control of dust.

##### Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Provision of sufficient ventilation. Use extractor hood (laboratory). Handle and open container with care. Avoid dust formation. Clear contaminated areas thoroughly.

##### Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

##### Advice on general occupational hygiene

Thorough skin-cleansing after handling the product.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

##### Incompatible substances or mixtures

Observe hints for combined storage.

##### Protect against external exposure, such as

high temperatures, UV-radiation/sunlight

##### Consideration of other advice:

Store locked up.

##### Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

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### Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [mg/m <sup>3</sup> ]	STEL [mg/m <sup>3</sup> ]	Ceiling-C [mg/m <sup>3</sup> ]	Notation	Source
AU	diphenylamine	122-39-4	WES	10				WES

#### Notation

Ceiling-C  
STEL

Ceiling value is a limit value above which exposure should not occur

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection.

##### Skin protection



##### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

##### • type of material

NBR (Nitrile rubber)

##### • material thickness

>0,11 mm

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- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

### Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P3 (filters at least 99,95 % of airborne particles, colour code: White).

### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	solid
Form	powder
Colour	cream
Odour	faintly perceptible
Melting point/freezing point	50 – 54 °C
Boiling point or initial boiling point and boiling range	300 – 302 °C
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	153 °C (c.c.)
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not applicable
Kinematic viscosity	not relevant
<u>Solubility(ies)</u>	
Water solubility	(practically insoluble)
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	3.5 (TOXNET) (exp. Lit.)
Vapour pressure	1.33 hPa at 108 °C

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### Density and/or relative density

Density 1.16 g/cm<sup>3</sup> at 20 °C  
Relative vapour density information on this property is not available

Particle characteristics No data available.

### Other safety parameters

Oxidising properties none

## 9.2 Other information

Information with regard to physical hazard classes: hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

**Violent reaction with:** strong oxidiser, Strong acid

### 10.4 Conditions to avoid

UV-radiation/sunlight. Keep away from heat.

### 10.5 Incompatible materials

aluminium, copper, zinc

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Classification acc. to GHS**

#### Acute toxicity

Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	600 mg/kg	rat		ECHA

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### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

### Carcinogenicity

Shall not be classified as carcinogenic.

### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

### Specific target organ toxicity - repeated exposure

May cause damage to organs (spleen, liver, kidney) through prolonged or repeated exposure.

Hazard category	Target organ	Exposure route
2	spleen	if exposed
2	liver	if exposed
2	kidney	if exposed

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

Data are not available.

#### • If in eyes

causes slight to moderate irritation

#### • If inhaled

irritant effects, cough, Dyspnoea

#### • If on skin

Frequently or prolonged contact with skin may cause dermal irritation, risk of absorption via the skin

#### • Other information

Other adverse effects: Liver and kidney damage, Headache, Blood pressure drop, Cardiac arrhythmias, Spasms

## 11.2 Endocrine disrupting properties

Not listed.



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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute)				
Endpoint	Value	Species	Source	Exposure time
EC50	2 mg/l	aquatic invertebrates	ECHA	48 h
ErC50	2.17 mg/l	algae	ECHA	72 h

### Biodegradation

Data are not available.

### 12.2 Process of degradability

Theoretical Oxygen Demand with nitrification: 2.978 mg/mg

Theoretical Oxygen Demand: 2.647 mg/mg

Theoretical Carbon Dioxide: 3.121 mg/mg

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	3.5 (TOXNET) (Exp. Lit.)
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### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Endocrine disrupting properties

Not listed.

### 12.7 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

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### Relevant provisions relating to waste(Basel Convention)

#### Properties of waste which render it hazardous

H6.1 Poisonous (Acute)  
H11 Toxic (Delayed or chronic)

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

### 14.1 UN number

UN RTDG	UN 2811
IMDG-Code	UN 2811
ICAO-TI	UN 2811

### 14.2 UN proper shipping name

UN RTDG	TOXIC SOLID, ORGANIC, N.O.S.
IMDG-Code	TOXIC SOLID, ORGANIC, N.O.S.
ICAO-TI	Toxic solid, organic, n.o.s.
Technical name	Diphenylamine >=99 %, p.a., ACS

### 14.3 Transport hazard class(es)

UN RTDG	6.1
IMDG-Code	6.1
ICAO-TI	6.1

### 14.4 Packing group

UN RTDG	III
IMDG-Code	III
ICAO-TI	III

### 14.5 Environmental hazards

hazardous to the aquatic environment

### 14.6 Special precautions for user

There is no additional information.

### 14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

#### Transport informationNational regulationsAdditional information(UN RTDG)

UN number	2811
Class	6.1
Environmental hazards	Yes Hazardous to the aquatic environment
Packing group	III

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### Danger label(s)

6.1  
Fish and tree



### Special provisions (SP)

223, 274  
UN RTDG

### Excepted quantities (EQ)

E1  
UN RTDG

### Limited quantities (LQ)

5 kg  
UN RTDG

### International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name

TOXIC SOLID, ORGANIC, N.O.S.

Particulars in the shipper's declaration

UN2811, TOXIC SOLID, ORGANIC, N.O.S., (Diphenylamine  $\geq 99$  %, p.a., ACS), 6.1, III, MARINE POLLUTANT

Marine pollutant

yes (hazardous to the aquatic environment)

Danger label(s)

6.1, "Fish and tree"



Special provisions (SP)

223, 274

Excepted quantities (EQ)

E1

Limited quantities (LQ)

5 kg

EmS

F-A, S-A

Stowage category

A

### International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name

Toxic solid, organic, n.o.s.

Particulars in the shipper's declaration

UN2811, Toxic solid, organic, n.o.s., (Diphenylamine  $\geq 99$  %, p.a., ACS), 6.1, III

Environmental hazards

yes (hazardous to the aquatic environment)

Danger label(s)

6.1



Special provisions (SP)

A3, A5

Excepted quantities (EQ)

E1

Limited quantities (LQ)

10 kg

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### SECTION 15: Regulatory information

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

There is no additional information.

##### National regulations(Australia)

##### Australian Inventory of Chemical Substances(AICS)

Substance is listed.

##### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

##### National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
JP	ISHA-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

##### Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

#### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

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### SECTION 16: Other information

#### Indication of changes (revised safety data sheet)

Alignment to regulation: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

Restructuring: section 9, section 14

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1		Classification acc. to GHS: change in the listing (table)	yes
2.1		The most important adverse physicochemical, human health and environmental effects: Delayed or immediate effects can be expected after short or long-term exposure.	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger		yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3	Other hazards: There is no additional information.	Other hazards	yes
2.3		Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes

#### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations

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Abbr.	Descriptions of used abbreviations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
STEL	Short-term exposure limit
TWA	Time-weighted average
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative
WES	Safe Work Australia: Workplace exposure standards for airborne contaminants

### Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H373	May cause damage to organs (spleen, liver, kidney) through prolonged or repeated exposure.

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.