ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

Diphenylamine

Revision Date:2026-03-20 Revision Number:1

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

Product identifier

Product name	: Diphenylamine
CBnumber	: CB7852949
CAS	: 122-39-4
EINECS Number	: 204-539-4
Synonyms	: DFA;Diphenylamine p.a.

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

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P314 Get medical advice/attention if you feel unwell.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

Hazard statements

H410 Very toxic to aquatic life with long lasting effects

H373 May cause damage to organs through prolonged or repeated exposure

SECTION 3: Composition/information on ingredients

Substance

Product name	: Diphenylamine
Synonyms	: DFA;Diphenylamine p.a.
CAS	: 122-39-4
EC number	: 204-539-4
MF	: C12H11N
MW	: 169.22

SECTION 4: First aid measures

Description of first aid measures

General information

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

After eye contact

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.

Information for doctor

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

Special hazards arising from the substance or mixture

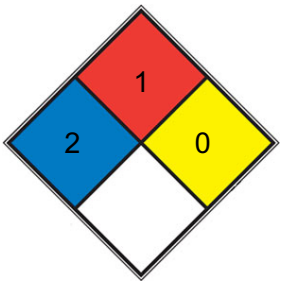
No further relevant information available.

Advice for firefighters

Protective equipment

Mouth respiratory protective device.

NFPA 704



■	HEALTH	2	Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. diethyl ether, ammonium phosphate, iodine)
■	FIRE	1	Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. mineral oil, ammonia)
■	REACT	0	Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,N2)
□	SPEC. HAZ.		

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Not required.

Environmental precautions

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1

30 mg/m³

PAC-2

180 mg/m³

PAC-3

220 mg/m³

SECTION 7: Handling and storage

Handling

Precautions for safe handling

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Information about protection against explosions and fires

Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Storage

Store in accordance with information listed on the product insert.

Requirements to be met by storerooms and receptacles

No special requirements.

Information about storage in one common storage facility

Not required.

Further information about storage conditions

Keep receptacle tightly sealed.

Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems

No further data; see section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

122-39-4 Diphenylamine	
REL	Long-term value: 10 mg/m³
TLV	Long-term value: 10 mg/m³ A4

Additional information

The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment

General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Breathing equipment

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection

Tightly sealed goggles

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Appearance

Physical State

Solid

Color

tan

Odor

Characteristic

Structural Formula

C12H11N

Molecular Weight

169.2 g/mol

Odor Threshold

Not determined.

pH

Not applicable.

Change in condition

Melting point/Melting range

Undetermined.

Boiling point/Boiling range

302 °C(lit.)

Flash point

307 °F

Flammability

Product is not flammable.

Decomposition temperature

Not determined.

Ignition temperature

Not determined.

Danger of explosion

Product does not present an explosion hazard.

Explosion limits

Lower: Not determined.

Upper: Not determined.

Vapor Pressure

0 hPa

Density

1.16

Relative Density

1.16

Vapor Density

5.82 (vs air)

Evaporation Rate

Not applicable.

Solubility in / Miscibility with

alcohol: passes test

Water at 25 °C (77 °F)

0.2 g/l

Partition coefficient (n-octanol/water)

Not determined.

Viscosity

Dynamic

Not applicable.

Kinematic

Not applicable.

SOLUBILITY

Chloroform: Slightly Soluble; Methanol: Slightly Soluble

Water solubility

Slightly soluble. 0.03 g/100 mL

No information available

Dielectric constant

3.3（11℃）

SECTION 10: Stability and reactivity

Reactivity

No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided

No decomposition if used according to specifications.

Possibility of hazardous reactions

No dangerous reactions known.

Conditions to avoid

No further relevant information available.

Incompatible materials

strong oxidizing agents, strong acids

Hazardous decomposition products

carbon dioxide, carbon monoxide, nitrogen oxides

SECTION 11: Toxicological information

RTECS Number

JJ7800000

Information on toxicological effects

Acute toxicity

LD/LC50 values that are relevant for classification:

Route	Endpoint	Value
Oral	LD50	1,120 mg/kg (rat)

Primary irritant effect

on the skin

No irritant effect.

on the eye

Irritating effect.

Sensitization

No sensitizing effects known.

Additional toxicological information

Carcinogenic categories

IARC (International Agency for Research on Cancer)

2B

NTP (National Toxicology Program)

Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

SECTION 12: Ecological information

Toxicity

Aquatic toxicity

No further relevant information available.

Persistence and degradability

No further relevant information available.

Behavior in environmental systems

Bioaccumulative potential

No further relevant information available.

Mobility in soil

No further relevant information available.

Ecotoxical effects

Remark

Very toxic for fish

Additional ecological information

General notes

Water hazard class 3 (Assessment by list): extremely hazardous for water

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

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Results of PBT and vPvB assessment

PBT

Not applicable.

vPvB

Not applicable.

PBT:

Not applicable.

vPvB:

Not applicable.

Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations

Waste treatment methods

Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings

Recommendation

Disposal must be made according to official regulations.

SECTION 14: Transport information

UN-Number

DOT, IMDG, IATA UN2811

UN proper shipping name

DOT Toxic solids, organic, n.o.s. (Diphenylamine)

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

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

Transport hazard class(es)

DOT

Class: 6.1 Toxic substances

Label: 6.1

IMDG

Class: 6.1 Toxic substances

Label: 6.1

IATA

Class: 6.1 Toxic substances

Label: 6.1

Packing group

DOT, IMDG, IATA II

Environmental hazards

Environmentally hazardous substance, solid

Marine pollutant

Symbol (fish and tree)

Special precautions for user

Warning: Toxic substances

Hazard identification number (Kemler code)

60

EMS Number

F-A,S-A

Stowage Category

B

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information

DOT:

Quantity limitations

On passenger aircraft/rail: 25 kg

On cargo aircraft only: 100 kg

IMDG:

Limited quantities (LQ)

500 g

Excepted quantities (EQ)

Code: E4

Maximum net quantity per inner packaging: 1 g

Maximum net quantity per outer packaging: 500 g

IATA:

Remarks

When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of

E1, E2, E4, or E5, this item meets the De Minimis

Quantities exemption, per IATA 2.6.10.

Therefore packaging does not have to be labeled as

Dangerous Goods/Excepted Quantity.

UN "Model Regulation"

UN 2811 TOXIC SOLID, ORGANIC, N.O.S.

(DIPHENYLAMINE), 6.1, II, ENVIRONMENTALLY

HAZARDOUS

SECTION 15: Regulatory information

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

No further relevant information available.

Sara

Section 355 (extremely hazardous substances):	Substance is not listed.
Section 313 (Specific toxic chemical listings):	Substance is listed.
TSCA (Toxic Substances Control Act):	ACTIVE
Hazardous Air Pollutants:	Substance is not listed.

Proposition 65

Chemicals known to cause cancer:	Substance is not listed.
Chemicals known to cause reproductive toxicity for females:	Substance is not listed.
Chemicals known to cause reproductive toxicity for males:	Substance is not listed.
Chemicals known to cause developmental toxicity:	Substance is not listed.

Chemicals known to cause cancer

Substance is not listed.

Chemicals known to cause reproductive toxicity for females

Substance is not listed.

Chemicals known to cause reproductive toxicity for males

Substance is not listed.

Chemicals known to cause developmental toxicity

Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency):	Substance is not listed.

TLV (Threshold Limit Value)

A4

NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Disclaimer:
The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.