acc. to Safe Work Australia - Code of Practice

Revision: 2024-03-02

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82 Version: GHS 3.0 en

Replaces version of: 2021-05-04

Version: (GHS 2)

date of compilation: 2020-09-03

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

Product identifier 1.1

Identification of the substance 1,2-Dichlorobenzene D4, 99 Atom%D

Article number **HN82**

CAS number 2199-69-1

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 private purposes (household).

Food, drink and animal feedingstuffs.

Details of the supplier of the safety data sheet 1.3

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 Website: www.carlroth.de

sheet:

e-mail (competent person):

sicherheit@carlroth.de

1.4 **Emergency telephone number**

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

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	4	Flam. Liq. 4	H227
3.10	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2A	Eye Irrit. 2A	H319
3.8R	Specific target organ toxicity - single exposure (respirat- ory tract irritation)	3	STOT SE 3	H335

Page 1 / 14 Australia (en)

acc. to Safe Work Australia - Code of Practice

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1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

Signal word Warning

Pictograms

GHS07



Hazard statements

H227	Combustible liquid
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Precautionary statements

Precautionary statements - prevention

P210	Keep away from	heat/sparks/open 1	flames/hot surfaces No	smoking

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P280 Wear protective gloves

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of soap and 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

P312 Call a POISON CENTER or doctor/physician if you feel unwell

P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

Precautionary statements - storage

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

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant

2.3 Other hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

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

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0.1\%$.

Australia (en) Page 2 / 14

acc. to Safe Work Australia - Code of Practice

ROTH

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance 1,2-Dichlorobenzene D4

Molecular formula $C_6D_4Cl_2$ Molar mass $151 \, {}^g\!I_{mol}$ CAS No 2199-69-1

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor. Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Irritation, Headache, Vertigo, Cough, Dyspnoea

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 spray, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

Australia (en) Page 3 / 14

acc. to Safe Work Australia - Code of Practice

ROTH

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air

Hazardous combustion products

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen halides (HX)

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.

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 vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

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.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Australia (en) Page 4 / 14

acc. to Safe Work Australia - Code of Practice

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82



Take precautionary measures against static discharge.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ventilation requirements

Use local and general ventilation.

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)

This information is not available.

Human health values

Relevant DNELs and other threshold levels					
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time	
DNEL	4.2 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects	
DNEL	21 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects	
DNEL	1.2 mg/kg bw/ day	human, dermal	worker (industry)	chronic - systemic effects	
DNEL	6 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects	

Environmental values

Relevant	Relevant PNECs and other threshold levels					
End- point	Threshold level	Organism	Environmental com- partment	Exposure time		
PNEC	0.004 ^{mg} / _l	aquatic organisms	freshwater	short-term (single instance)		
PNEC	0 ^{mg} / _l	aquatic organisms	marine water	short-term (single instance)		
PNEC	4.7 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)		

Australia (en) Page 5 / 14

acc. to Safe Work Australia - Code of Practice



1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Relevant PNECs and other threshold levels

End- point	Threshold level	Organism	Environmental com- partment	Exposure time
PNEC	0.177 ^{mg} / _{kg}	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0.018 ^{mg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
PNEC	0.033 ^{mg} / _{kg}	terrestrial organisms	soil	short-term (single instance)

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. 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

FKM (fluoro rubber)

material thickness

≥0,4 mm

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: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Australia (en) Page 6 / 14

acc. to Safe Work Australia - Code of Practice

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

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 liquid

Colour colourless

Odour characteristic

Melting point/freezing point -17.03 °C (ECHA)

Boiling point or initial boiling point and boiling

range

180.5 °C at 1,013 hPa (ECHA)

Flammability flammable liquid in accordance with GHS criteria

Lower and upper explosion limit 2.2 vol% (LEL) - 12 vol% (UEL)

Flash point 66 °C (ECHA)
Auto-ignition temperature 640 °C (ECHA)
Decomposition temperature not relevant
pH (value) not determined
Kinematic viscosity not determined

Solubility(ies)

Water solubility (practically insoluble)

Partition coefficient

Partition coefficient n-octanol/water (log value): 3.433 (25 °C) (ECHA)

Soil organic carbon/water (log KOC) 2.647 (ECHA)

Vapour pressure 1.33 hPa at 20 °C

Density and/or relative density

Density $\sim 1.34 \, {}^{9}/_{cm^3}$ at 20 $^{\circ}$ C

Relative vapour density 5.1 (air = 1)

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

classes:

Australia (en) Page 7 / 14

acc. to Safe Work Australia - Code of Practice



1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Other safety characteristics:

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance. Risk of ignition.

If heated

Risk of ignition. Vapours may form explosive mixtures with air.

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, Alkali metals, Alkaline earth metal, Nitric acid, Sulphuric acid

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from heat.

10.5 Incompatible materials

different plastics, Rubber articles, Light metals, aluminium, 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.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2,000 ^{mg} / _{kg}	rat		ECHA

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

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.

Australia (en) Page 8 / 14

acc. to Safe Work Australia - Code of Practice

ROTH

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

vomiting, presenting an aspiration hazard

• If in eyes

Causes serious eye irritation

If inhaled

vertigo, headache, Irritation to respiratory tract, cough, Dyspnoea

• If on skin

causes skin irritation

Other information

Other adverse effects: Liver and kidney damage

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0.1\%$.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute)						
Endpoint	Value	Species	Source	Exposure time		
LC50	1.58 ^{mg} / _l	fish	ECHA	96 h		
EC50	0.66 ^{mg} / _l	aquatic invertebrates	ECHA	48 h		
ErC50	2.2 ^{mg} / _l	algae	ECHA	96 h		

Endpoint Value Species Source time EC50 0.55 mg/_| aquatic invertebrates ECHA 14 d

12.2 Persistence and degradability

Theoretical Oxygen Demand: 1.165 mg/mg

Australia (en) Page 9 / 14

acc. to Safe Work Australia - Code of Practice



1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Theoretical Carbon Dioxide: 1.748 mg/mg

Process of degradability

Process	Degradation rate	Time
biotic/abiotic	58 %	20 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	3.433 (25 °C) (ECHA)
BCF	150 – 230 (ECHA)

12.4 Mobility in soil

The Organic Carbon normalised adsorption coefficient	2.647 (ECHA)
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12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

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. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

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. Non-contaminated packages may be recycled.

Australia (en) Page 10 / 14

acc. to Safe Work Australia - Code of Practice

ROTH

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

SECTION 14: Transport information

14.1 UN number

UN 1591
IMDG-Code UN 1591
ICAO-TI UN 1591

14.2 UN proper shipping name

UN RTDGo-DICHLOROBENZENEIMDG-Codeo-DICHLOROBENZENEICAO-TIo-Dichlorobenzene

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 1591
Class 6.1
Environmental hazards Yes

Hazardous to the aquatic environment

Packing group III

Danger label(s) 6.1

Fish and tree



Special provisions (SP) 279 UN RTDG

Excepted quantities (EQ) E1

UN RTDG

Australia (en) Page 11 / 14

acc. to Safe Work Australia - Code of Practice

1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Limited quantities (LQ) 5 L

UN RTDG

Emergency Action Code 27

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name o-DICHLOROBENZENE

Particulars in the shipper's declaration UN1591, o-DICHLOROBENZENE, 6.1, III, MARINE

POLLUTANT

YES (hazardous to the aquatic environment)

Marine pollutant yes (hazardous to the aquatic environment)

Danger label(s) 6.1, "Fish and tree"



Special provisions (SP) 279 **E**1 Excepted quantities (EQ) Limited quantities (LQ) 5 L

EmS F-A, S-A

Stowage category

10 - Liquid halogenated hydrocarbons Segregation group

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

Proper shipping name o-Dichlorobenzene

Particulars in the shipper's declaration UN1591, o-Dichlorobenzene, 6.1, III **Environmental hazards**

6.1 Danger label(s)



Special provisions (SP) A113 Excepted quantities (EQ) E1 Limited quantities (LQ) 2 L

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture There is no additional information.

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.

Australia (en) Page 12 / 14

acc. to Safe Work Australia - Code of Practice



1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

National inventories

Country	Inventory	Status
EU	ECSI	substance is listed
JP	CSCL-ENCS	substance is listed
NZ	NZIoC	substance is listed
TW	TCSI	substance is listed

Legend

CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
NZIOC New Zealand Inventory of Chemicals
TCSI Taiwan Chemical Substance Inventory

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Emergency Action Code: 2Z	yes
15.1		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.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations	
BCF	BCF Bioconcentration factor	
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)	
DGR	Dangerous Goods Regulations (see IATA/DGR)	
DNEL	IEL Derived No-Effect Level	
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	
ED Endocrine disruptor		
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	

Australia (en) Page 13 / 14

acc. to Safe Work Australia - Code of Practice



1,2-Dichlorobenzene D4, 99 Atom%D

article number: HN82

Abbr.	Descriptions of used abbreviations
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
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
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
UEL	Upper explosion limit (UEL)
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

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	
H227	Combustible liquid.	
H302	Harmful if swallowed.	
H315	Causes skin irritation.	
H319	Causes serious eye irritation.	
H335 May cause respiratory irritation.		

Disclaimer

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

Australia (en) Page 14 / 14