

# Safety data sheet

acc. to Safe Work Australia - Code of Practice



## Undecanol $\geq 97\%$ , for synthesis

article number: **22H0**  
Version: **GHS 2.0 en**  
Replaces version of: 2023-07-12  
Version: (GHS 1)

date of compilation: 2023-07-12  
Revision: 2024-03-02

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

### 1.1 Product identifier

Identification of the substance **Undecanol  $\geq 97\%$ , for synthesis**  
Article number 22H0  
CAS number 112-42-5

### 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.

### 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
3.3	Serious eye damage/eye irritation	2A	Eye Irrit. 2A	H319

For full text of abbreviations: see SECTION 16

### 2.2 Label elements

**Labelling**

**Signal word**

**Warning**

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### Pictograms

GHS07



### Hazard statements

H319 Causes serious eye irritation

### Precautionary statements

#### **Precautionary statements - prevention**

P280 Wear eye protection/face protection

#### **Precautionary statements - response**

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337+P313 If eye irritation persists: Get medical advice/attention

## 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.

### **Endocrine disrupting properties**

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

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Name of substance	Undecanol
Molecular formula	$C_{11}H_{24}O$
Molar mass	172.3 g/mol
CAS No	112-42-5

## 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 all cases of doubt, or when symptoms persist, seek medical advice.

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### 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. Call a doctor if you feel unwell.

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

Irritation

### 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 (CO<sub>2</sub>)

#### 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: 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.

## SECTION 6: Accidental release measures

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



#### For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

### 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.

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### 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.

### 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 in a cool place.

### Incompatible substances or mixtures

Observe hints for combined storage.

### Consideration of other advice:

### Specific designs for storage rooms or vessels

Recommended storage temperature: 2 – 8 °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	313 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	140.9 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - local effects
DNEL	89 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
DNEL	190 µg/cm <sup>2</sup>	human, dermal	worker (industry)	chronic - local effects

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### Environmental values

Relevant PNECs and other threshold levels				
End-point	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	0.007 mg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0.001 mg/l	aquatic organisms	marine water	short-term (single instance)
PNEC	1.53 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
PNEC	0.153 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
PNEC	0.3 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

NBR (Nitrile 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.

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### Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of  $> 65\text{ }^{\circ}\text{C}$ , colour code: Brown).

### 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	$12.5\text{ }^{\circ}\text{C}$ at 1 atm (ECHA)
Boiling point or initial boiling point and boiling range	$247\text{ }^{\circ}\text{C}$ at 1,011 hPa (ECHA)
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	$39\text{ g/m}^3$ (LEL) / $0.5\text{ vol}\%$ (LEL)
Flash point	$108\text{ }^{\circ}\text{C}$ at 1,014 hPa (ECHA)
Auto-ignition temperature	$253\text{ }^{\circ}\text{C}$ at 1,014 hPa (auto-ignition temperature (liquids and gases))
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	$20.03\text{ mm}^2/\text{s}$ at $20\text{ }^{\circ}\text{C}$
Dynamic viscosity	$16.62\text{ cP}$ at $20\text{ }^{\circ}\text{C}$
<u>Solubility(ies)</u>	
Water solubility	$0.0063\text{ g/l}$ at $20\text{ }^{\circ}\text{C}$
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	4.8 (pH value: $\sim 7$ , $25\text{ }^{\circ}\text{C}$ ) (ECHA)
Soil organic carbon/water (log KOC)	4.12 (ECHA)
Vapour pressure	$<5\text{ Pa}$ at $20\text{ }^{\circ}\text{C}$
<u>Density and/or relative density</u>	
Density	$0.83\text{ g/cm}^3$ at $20\text{ }^{\circ}\text{C}$ (ECHA)

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Relative vapour density	Information on this property is not available.
Particle characteristics	not relevant (liquid)
<u>Other safety parameters</u>	
Oxidising properties	none
<b>9.2 Other information</b>	
Information with regard to physical hazard classes:	hazard classes acc. to GHS (physical hazards): not relevant
Other safety characteristics:	
Surface tension	31.8 mN/m (22.5 °C) (ECHA)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

#### **If heated**

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

### 10.4 Conditions to avoid

Keep away from heat.

### 10.5 Incompatible materials

There is no additional information.

### 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**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed, in contact with skin or if inhaled.

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Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	$>2,000 \text{ mg/kg}$	rat		ECHA
dermal	LD50	$>2,000 \text{ mg/kg}$	rat		ECHA

### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

### 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.

### 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

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

Data are not available.

#### • If in eyes

Causes serious eye irritation

#### • If inhaled

Data are not available.

#### • If on skin

Data are not available.

#### • Other information

none

## 11.2 Endocrine disrupting properties

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



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### 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	1.04 mg/l	fish	ECHA	96 h
LL50	300 mg/l	fish	ECHA	96 h
EC50	0.765 mg/l	aquatic invertebrates	ECHA	48 h
EL50	<1 mg/l	aquatic invertebrates	ECHA	48 h
ErC50	2.7 mg/l	algae	ECHA	96 h

Aquatic toxicity (chronic)				
Endpoint	Value	Species	Source	Exposure time
LC50	3.4 mg/l	fish	ECHA	120 h

#### 12.2 Persistence and degradability

Theoretical Oxygen Demand: 3.064 mg/mg  
Theoretical Carbon Dioxide: 2.809 mg/mg

Process of degradability		
Process	Degradation rate	Time
carbon dioxide generation	82.2 %	28 d
oxygen depletion	87 %	28 d

#### 12.3 Bioaccumulative potential

The substance fulfils the very bioaccumulative criterion.

n-octanol/water (log KOW)	4.8 (pH value: ~7, 25 °C) (ECHA)
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#### 12.4 Mobility in soil

The Organic Carbon normalised adsorption coefficient	4.12 (ECHA)
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#### 12.5 Results of PBT and vPvB assessment

Data are not available.

#### 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.

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## 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.

### 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.

## SECTION 14: Transport information

### 14.1 UN number

UN RTDG	UN 3082
IMDG-Code	UN 3082
ICAO-TI	UN 3082

### 14.2 UN proper shipping name

UN RTDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
IMDG-Code	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
ICAO-TI	Environmentally hazardous substance, liquid, n.o.s.
Technical name	Undecanol

### 14.3 Transport hazard class(es)

UN RTDG	9
IMDG-Code	9
ICAO-TI	9

### 14.4 Packing group

UN RTDG	III
IMDG-Code	III
ICAO-TI	III

### 14.5 Environmental hazards

hazardous to the aquatic environment

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### 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 information National regulations Additional information (UN RTDG)

UN number	3082
Class	9
Environmental hazards	Yes Hazardous to the aquatic environment
Packing group	III
Danger label(s)	9 Fish and tree



Special provisions (SP)	274, 331, 335, 375 UN RTDG
Excepted quantities (EQ)	E1 UN RTDG
Limited quantities (LQ)	5 L UN RTDG
Emergency Action Code	3Z

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

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Particulars in the shipper's declaration	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (Undecanol), 9, III
Marine pollutant	yes (hazardous to the aquatic environment), (Undecanol)
Danger label(s)	9, "Fish and tree"



Special provisions (SP)	274, 335, 969
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-A, S-F
Stowage category	A

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

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Particulars in the shipper's declaration	UN3082, Environmentally hazardous substance, liquid, n.o.s., (Undecanol), 9, III
Environmental hazards	YES (hazardous to the aquatic environment)
Danger label(s)	9, "Fish and tree"
Special provisions (SP)	A97, A158, A197, A215
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

## 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
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

#### Legend

AIIC Australian Inventory of Industrial Chemicals

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### Legend

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
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical 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.

## SECTION 16: Other information

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

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.3	Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ .	Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ .	yes

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	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
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	$\equiv$ 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
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

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Abbr.	Descriptions of used abbreviations
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)
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
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
H319	Causes serious eye 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.