acc. to Safe Work Australia - Code of Practice

Calcium carbide 7-20 mm, technical

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Replaces version of: 2023-01-31

Version: (GHS 2)

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

Product identifier 1.1

Identification of the substance **Calcium carbide** 7-20 mm, technical

Article number 6667 75-20-7 CAS number

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
2.12	Substance and mixture which, in contact with water, emits flammable gas	1	Water-react. 1	H260
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.8R	Specific target organ toxicity - single exposure (respirat- ory tract irritation)	3	STOT SE 3	H335

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For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

In contact with water releases flammable gases which may ignite spontaneously.

2.2 Label elements

Labelling

Signal word Danger

Pictograms

GHS02, GHS05, GHS07







Hazard statements

H260 In contact with water releases flammable gases, which may ignite spontan-

eously

H315 Causes skin irritation

H318 Causes serious eye damage H335 May cause respiratory irritation

Precautionary statements

Precautionary statements - prevention

P231+P232 Handle and store contents under inert gas. Protect from moisture

Precautionary statements - response

P302+P335+P334 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water or wrap in

wet bandages

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

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

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%.

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SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance Calcium carbide

Molecular formula C₂Ca

Molar mass 64.1 g/_{mol}

CAS No 75-20-7

Impurities/additives/constituents:

Name of substance	Identifier	Wt%
Calcium oxide	CAS No 1305-78-8	14 – 18

Remarks

For full text of abbreviations: see SECTION 16

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

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and 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

Risk of blindness, Risk of serious damage to eyes, Irritation, Cough, Dyspnoea

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! dry extinguishing powder, D-powder, dry sand

Unsuitable extinguishing media

water

5.2 Special hazards arising from the substance or mixture

Product may release hydrogen gas. Increased storage temperatures will accelerate this process. Water-reactive (in contact with water releases flammable gases). Non-combustible.

Hazardous combustion products

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

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 dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

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. Take up carefully when dry.

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.

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SECTION 7: Handling and storage

Precautions for safe handling

Provision of sufficient ventilation. Avoid dust formation.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

Conditions for safe storage, including any incompatibilities 7.2

Store in a dry place. Keep container tightly closed. Keep under inert gas.

Incompatible substances or mixtures

Observe hints for combined storage. Do not allow contact with water.

Evaporative conditions

Keep container tightly closed and in a well-ventilated place.

Protect against external exposure, such as

humidity, contact with air/oxygen

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)

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
AU	nuisance dusts		WES	10			i	WES

Notation

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

Inhalable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-

TWA

minute period (unless otherwise specified)
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)

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Relevant DNELs of components								
Name of sub- stance	CAS No	End- point	Threshol d level	Protection goal, route of exposure	Used in	Exposure time		
Calcium oxide	1305-78-8	DNEL	1 mg/m³	human, inhalat- ory	worker (industry)	chronic - local ef- fects		
Calcium oxide	1305-78-8	DNEL	4 mg/m³	human, inhalat- ory	worker (industry)	acute - local ef- fects		

Relevant PNECs of components

Name of sub- stance	CAS No	End- point	Threshol d level	Organism	Environmental compartment	Exposure time
Calcium oxide	1305-78-8	PNEC	0.37 ^{mg} / _l	aquatic organ- isms	freshwater	short-term (single instance)
Calcium oxide	1305-78-8	PNEC	0.24 ^{mg} / _l	aquatic organ- isms	marine water	short-term (single instance)
Calcium oxide	1305-78-8	PNEC	2.27 ^{mg} / _l	aquatic organ- isms	sewage treatment plant (STP)	short-term (single instance)
Calcium oxide	1305-78-8	PNEC	817.4 ^{mg} / kg	terrestrial organ- isms	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

>0,11 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). P2 (filters at least 94 % 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

Colour dark grey - dark brown

Odour characteristic

Melting point/freezing point 2,300 °C (ECHA)

Boiling point or initial boiling point and boiling not determined

range

Flammability substance which, in contact with water, emits

flammable gases (in accordance with GHS criter-

ia)

Lower and upper explosion limit not determined

Flash point not applicable

Auto-ignition temperature not determined

Decomposition temperature not relevant

pH (value) not applicable

Kinematic viscosity not relevant

Solubility(ies)

Water solubility (Hydrolysis)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0.37 (ECHA)

Vapour pressure not determined

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Density and/or relative density

2.22 g/cm3 at 20 °C Density

Relative vapour density Information on this property is not available.

 $800 - 900 \frac{\text{kg}}{\text{m}^3}$ **Bulk density**

Particle characteristics

Particle size 7 - 20 mm

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

There is no additional information. Other safety characteristics:

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance. Reactivity with water.

10.2 Chemical stability

Moisture-sensitive.

10.3 Possibility of hazardous reactions

Material reacts vigorously with water emitting flammable gases

10.4 Conditions to avoid

Protect from moisture.

10.5 Incompatible materials

copper, silver

Release of flammable materials with

Water

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 or in contact with skin.

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Acute toxicity							
Exposure route	Endpoint	Value	Species	Method	Source		
oral	LD50	>2,000 ^{mg} / _{kg}	rat		ECHA		
dermal	LD50	>2,500 ^{mg} / _{kg}	rabbit		ECHA		

Acute toxicity of components

Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Calcium oxide	1305-78-8	oral	LD50	>2,000 ^{mg} / _{kg}	rat

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

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

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

Data are not available.

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

Irritation to respiratory tract, cough, Dyspnoea

• If on skin

causes skin irritation

Other information

none

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

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	>50 ^{mg} / _l	fish	ECHA	96 h
EC50	4.62 ^{mg} / _l	aquatic invertebrates	ECHA	48 h
ErC50	46 ^{mg} / _l	algae	ECHA	72 h

Aquatic toxicity (acute) of components

Name of sub- stance	CAS No	Endpoint	Value	Species	Exposure time
Calcium oxide	1305-78-8	LC50	50.6 ^{mg} / _l	fish	96 h
Calcium oxide	1305-78-8	EC50	49.1 ^{mg} / _l	aquatic invertebrates	48 h
Calcium oxide	1305-78-8	ErC50	184.6 ^{mg} / _l	algae	72 h

Aquatic toxicity (chronic) of components

Name of sub- stance	CAS No	Endpoint	Value	Species	Exposure time
Calcium oxide	1305-78-8	LC50	53.1 ^{mg} / _l	aquatic invertebrates	14 d
Calcium oxide	1305-78-8	EC50	300.4 ^{mg} / _l	microorganisms	3 h

12.2 Persistence and degradability

Theoretical Oxygen Demand: $0.9984 \, ^{mg}/_{mg}$ Theoretical Carbon Dioxide: $1.373 \, ^{mg}/_{mg}$

Biodegradation

The substance is readily biodegradable.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0.37 (ECHA)

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

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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

H4.3 Substances or wastes which, in contact with water emit ammable gases

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.

SECTION 14: Transport information

14.1 UN number

UN 1402
IMDG-Code UN 1402
ICAO-TI UN 1402

14.2 UN proper shipping name

UN RTDGCALCIUM CARBIDEIMDG-CodeCALCIUM CARBIDEICAO-TICalcium carbide

14.3 Transport hazard class(es)

UN RTDG 4.3
IMDG-Code 4.3
ICAO-TI 4.3

14.4 Packing group

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UN RTDG I IMDG-Code I

ICAO-TI I

14.5 Environmental hazards non-environmentally hazardous acc. to the dan-

gerous goods regulations

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 1402
Class 4.3
Packing group I
Danger label(s) 4.3

Special provisions (SP) 951

UN RTDG

Excepted quantities (EQ)

ŪN RTDG

Limited quantities (LQ) 0

UN RTDG

Emergency Action Code 4W

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name CALCIUM CARBIDE

Particulars in the shipper's declaration UN1402, CALCIUM CARBIDE, 4.3, I

Marine pollutant Danger label(s) 4.3

Excepted quantities (EQ) E0
Limited quantities (LQ) 0

EmS $\underline{\mathsf{F-G}}$, S-N

Stowage category B

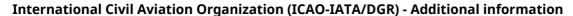
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Proper shipping name Calcium carbide

Particulars in the shipper's declaration UN1402, Calcium carbide, 4.3, I

Danger label(s) 4.3



Excepted quantities (EQ) E0

SECTION 15: Regulatory information

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
TR	CICR	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

Chemical Inventory and Control Regulation List of Existing and New Chemical Substances (CSCL-ENCS) Domestic Substances List (DSL) CICR CSCL-ENCS DSL

EC Substance Inventory (EINECS, ELINCS, NLP)
Inventory of Existing Chemical Substances Produced or Imported in China National Inventory of Chemical Substances

Korea Existing Chemicals Inventory

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Legend

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- relev- ant
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
15.1		National inventories: change in the listing (table)	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)
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
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
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

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Abbr.	Descriptions of used abbreviations
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
PNEC	Predicted No-Effect Concentration
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
H260	In contact with water releases flammable gases, which may ignite spontaneously.
H315	Causes skin irritation.
H318	Causes serious eye damage.
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.

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