

Safety Data Sheet

According to 1907/2006, article 31 as amended

Calcium carbide

Version number: GHS 3.0
Replaces version of: 2020-09-28 (GHS 2.2)

Revision: 2023-11-11

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

1.1 Product identifier

Identification of the substance / Tradenames	Calcium carbide / Norm vial Carbide vial
Registration number (REACH)	01-2119494719-18-0000
EC number	200-848-3
Index number in CLP Annex VI	006-004-00-9
CAS number	75-20-7

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

Relevant identified uses	Professional uses Laboratory and analytical use - Moisture measurement using the carbide method
Uses advised against	Fruit ripening.

1.3 Details of the supplier of the safety data sheet

Dr. Radtke CPM Chemical-Physical Measuringtechniques Ltd.
Lettenstrasse 6a, CH-6343 Rotkreuz

Distribution: EEA
Radtke Messtechnik Vertriebs GmbH
Schaanerstrasse 27, LI-9490 Vaduz
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1.4 Emergency telephone number

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Poison centre			
Country	Name	Postal code/city	Telephone
United Kingdom	Guy's & St Thomas' Poisons Unit	London	0870 243 2241
United Kingdom	National Poisons Information Service (Belfast Centre)	Belfast	0870 600 6266 (UK only)
United Kingdom	National Poisons Information Service (Cardiff Centre)	Cardiff	0870 600 6266 (UK only)
United Kingdom	Scottish Poisons Information Bureau	Edinburgh	0870 600 6266 (UK only)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	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 (respiratory tract irritation)	3	STOT SE 3	H335

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 according to Regulation (EC) No 1272/2008 (CLP)

- Signal word danger

- Pictograms

GHS02, GHS05, GHS07



- Hazard statements

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.

- Precautionary statements

P223 Do not allow contact with water.
P231+P232 Handle and store contents under inert gas. Protect from moisture.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of 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 powder extinguisher or sand to extinguish.
P402+P404 Store in a dry place. Store in a closed container.

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- Precautionary statements

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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	Calcium carbide
Identifiers	
REACH Reg. No	01-2119494719-18-0000
CAS No	75-20-7
EC No	200-848-3
Index No	006-004-00-9

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Self-protection of the first aider.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

Following skin contact

Brush off loose particles from skin. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Keep the eyelids open. Rinse preferably 3 minutes with DIPHOTERINE®, otherwise 15 minutes with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

Following ingestion

Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Vomiting. Nausea.

4.3 Indication of any immediate medical attention and special treatment needed

Do NOT induce vomiting. In case of the intake of large amounts, pump out stomach ensuring to avoid reinhalation.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

D-Powder, Dry sand

Unsuitable extinguishing media

Water jet, Foam, Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

On contact with water highly flammable and explosive acetylene is generated.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂), Calcium oxide

5.3 Advice for firefighters

If possible, remove containers from the danger zone. In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Chemical protective clothing, Wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Provision of sufficient ventilation. Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Removal of ignition sources. Protect from moisture.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

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.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area. Protect from moisture.

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

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation
Keep container tightly closed. Use local and general ventilation. Use only in well-ventilated areas. On contact with water highly flammable and explosive acetylene is generated.
- Specific notes/details
Dust deposits may accumulate on all deposition surfaces in a technical room.
- Handling of incompatible substances or mixtures
- Keep away from
Acids, Water, Store separately from oxidising and spontaneously flammable substances.

Advice on general occupational hygiene

Take off immediately all contaminated clothing. Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs. Do not breathe gas/vapour/spray. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres
Removal of dust deposits.
- Incompatible substances or mixtures
Do not allow contact with water.
- Do not mix with
Acids, Caustic solutions, Alcohols, Water
- Evaporative conditions
Keep container tightly closed and in a well-ventilated place.

Control of effects

Protect against external exposure, such as

- Humidity
- Ventilation requirements
Use local and general ventilation.
- Packaging compatibilities
Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
EU	calcium dihydroxide	1305-62-0	IOEL V		1		4			r	2017/164/EU
GB	dust		WEL		10					i	EH40/2005
GB	dust		WEL		4					r	EH40/2005
GB	calcium hydroxide	1305-62-0	WEL		5						EH40/2005
GB	calcium hydroxide	1305-62-0	WEL		1		4			r	EH40/2005

Notation

Ceiling-C

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

i

inhalable fraction

r

respirable fraction

STEL

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)

Human health values

Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	2 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	4 mg/m ³	human, inhalatory	worker (industry)	acute - local effects

Environmental values

Relevant PNECs and other threshold levels				
End-point	Threshold level	Organism	Environmental compartment	Exposure time
PNEC	4.62 µg/l	aquatic organisms	freshwater	short-term (single instance)
PNEC	0.462 µg/l	aquatic organisms	marine water	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

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Individual protection measures (personal protective equipment)

Personal protective equipment must comply with Regulation (EU) 425/2016. Other national regulations must be observed. The standards listed below are minimum standards. The user must check whether additional standards must be complied with.

Eye/face protection

Use safety goggles with side protection. (EN 166).



Skin protection

- Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. 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.



- Type of material

NBR: acrylonitrile-butadiene rubber

- Material thickness

> 0.4 mm

- Breakthrough times of the glove material

>480 minutes (permeation: level 6)

- Type of material

CR: chloroprene (chlorobutadiene) rubber

- Material thickness

> 0.6 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. Wash hands thoroughly after handling.

Respiratory protection

In case of dust formation: respiratory protection. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	solid
Colour	black
Odour	characteristic
Melting point/freezing point	2,300 °C at 1,013 hPa (ECHA)
Boiling point or initial boiling point and boiling range	not determined
Evaporation rate	not determined
Flammability	substance which, in contact with water, emits flammable gases (in accordance with GHS criteria)
Lower and upper explosion limit	not determined
Flash point	not applicable
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not applicable The products of hydrolysis have an alkaline reaction

Solubility(ies)

Water solubility	Hydrolysis in water
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Partition coefficient

Partition coefficient n-octanol/water (log value)	0.37 (ECHA)
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Vapour pressure	0 mmHg at 25 °C (ECHA)
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Density and/or relative density

Density	2.22 g/cm ³ at 20 °C (ECHA)
Relative vapour density	information on this property is not available

Particle characteristics	no data available
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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

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". It's a reactive substance. The mixture contains reactive substance(s). Reactivity with water.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

On contact with water highly flammable and explosive acetylene is generated.

10.4 Conditions to avoid

Protect from moisture. Store separately from oxidising and spontaneously flammable substances.

10.5 Incompatible materials

Water, Acids, Bases, Oxidisers, Silver, Copper

Release of flammable materials with:

Water

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity			
Exposure route	Endpoint	Value	Species
oral	LD50	>2,000 mg/kg	rat
dermal	LD50	>2,500 mg/kg	rabbit

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.

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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.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Aquatic toxicity (acute)			
Endpoint	Value	Species	Exposure time
LC50	>50 mg/l	fish	96 h
EC50	4.62 mg/l	aquatic invertebrates	48 h
ErC50	46 mg/l	algae	72 h
NOEC	50 mg/l	fish	96 h
LOEC	3.33 mg/l	aquatic invertebrates	48 h
growth rate (ErCx) 10%	12 mg/l	algae	72 h
growth (EbCx) 10%	2.7 mg/l	algae	72 h

Biodegradation

The study does not need to be conducted because the substance is inorganic. Hydrolysis in water.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	0.37
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12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

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

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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.

Waste treatment-relevant information

Recycling/reclamation of other inorganic materials.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Relevant provisions relating to waste

List of wastes

Disposal code numbers according to the European Waste Catalogue are defined according to origin of the waste. As this product is used in several branches of industry, no disposal code number can be specified by the manufacturer. The waste code number must be determined in consultation with the disposal company or the competent authority.

Remarks

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

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN	UN 1402
IMDG-Code	UN 1402
ICAO-TI	UN 1402

14.2 UN proper shipping name

ADR/RID/ADN	CALCIUM CARBIDE
IMDG-Code	CALCIUM CARBIDE
ICAO-TI	Calcium carbide

14.3 Transport hazard class(es)

ADR/RID/ADN	4.3
IMDG-Code	4.3
ICAO-TI	4.3

14.4 Packing group

ADR/RID/ADN	I
IMDG-Code	I
ICAO-TI	I

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

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14.6 Special precautions for user


Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments


The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations


Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Particulars in the transport document	UN1402, CALCIUM CARBIDE, 4.3, I, (B/E)
Classification code	W2
Danger label(s)	4.3
	
Excepted quantities (EQ)	E0
Limited quantities (LQ)	0
Transport category (TC)	1
Tunnel restriction code (TRC)	B/E
Hazard identification No	X423
Emergency Action Code	4W

International Maritime Dangerous Goods Code (IMDG) - Additional information

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	F-G, S-N
Stowage category	B

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

Particulars in the shipper's declaration	UN1402, Calcium carbide, 4.3, I
Danger label(s)	4.3
	
Excepted quantities (EQ)	E0

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SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)			
Name of substance	Name acc. to inventory	Restriction	No
Calcium carbide	flammable / pyrophoric	R40	40
Calcium carbide	substances in tattoo inks and permanent make-up	R75	75

Legend

R40

1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopie' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
'For professional users only'.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

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Legend

R75

1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
- (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
 - (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
 - (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
- (a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - (b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
- (a) the statement "Mixture for use in tattoos or permanent make-up";
 - (b) a reference number to uniquely identify the batch;
 - (c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
 - (d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
 - (e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
 - (f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
 - (g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.
- The information shall be clearly visible, easily legible and marked in a way that is indelible.
- The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.
- Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.
- Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.
8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.

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Legend

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

not listed

Seveso Directive

2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
O2	other hazards (Water-react., cat. 1)	100	500	59)

Notation

59) substances and mixtures which in contact with water emit flammable gases, category 1

Industrial Emissions Directive (IED)

VOC content	0 %
-------------	-----

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on persistent organic pollutants (POP)

Not listed.

National inventories

Country	Inventory	Status
EU	REACH Reg.	substance is listed
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed

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Country	Inventory	Status
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

AICS	Australian Inventory of Chemical Substances
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
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

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.2	Relevant identified uses: Laboratory and analytical use	Relevant identified uses: Professional uses Laboratory and analytical use - Moisture measurement using the carbide method	yes
1.2		Uses advised against: Fruit ripening.	yes
2.2		- Precautionary statements: change in the listing (table)	yes
4.1	General notes: Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.	General notes: Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Self-protection of the first aider.	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
4.1	Following skin contact: Brush off loose particles from skin. Rinse skin with water/shower. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.	Following skin contact: Brush off loose particles from skin. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.	yes
4.1	Following eye contact: Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.	Following eye contact: Keep the eyelids open. Rinse preferably 3 minutes with DIPHOTERINE®, otherwise 15 minutes with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.	yes
4.1	Following ingestion: Do NOT induce vomiting. Call a physician immediately.	Following ingestion: Rinse mouth. Do not induce vomiting. Call a physician immediately.	yes
4.2	Most important symptoms and effects, both acute and delayed: Symptoms and effects are not known to date.	Most important symptoms and effects, both acute and delayed: Vomiting. Nausea.	yes
4.3	Indication of any immediate medical attention and special treatment needed: none	Indication of any immediate medical attention and special treatment needed: Do NOT induce vomiting. In case of the intake of large amounts, pump out stomach ensuring to avoid reinhalation.	yes
5.2	Hazardous combustion products: Carbon monoxide (CO), Carbon dioxide (CO ₂)	Hazardous combustion products: Carbon monoxide (CO), Carbon dioxide (CO ₂), Calcium oxide	yes
5.3	Advice for firefighters: In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.	Advice for firefighters: If possible, remove containers from the danger zone. In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.	yes
6.1	For non-emergency personnel: Remove persons to safety. Provision of sufficient ventilation. Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Removal of ignition sources.	For non-emergency personnel: Remove persons to safety. Provision of sufficient ventilation. Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Removal of ignition sources. Protect from moisture.	yes
6.3	Other information relating to spills and releases: Place in appropriate containers for disposal. Ventilate affected area.	Other information relating to spills and releases: Place in appropriate containers for disposal. Ventilate affected area. Protect from moisture.	yes
7.1	- Measures to prevent fire as well as aerosol and dust generation: Keep container tightly closed. Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas.	- Measures to prevent fire as well as aerosol and dust generation: Keep container tightly closed. Use local and general ventilation. Use only in well-ventilated areas. On contact with water highly flammable and explosive acetylene is generated.	yes
8.1		Occupational exposure limit values (Workplace Exposure Limits): change in the listing (table)	yes
8.1		Human health values	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
8.1		Relevant DNELs and other threshold levels: change in the listing (table)	yes
8.1		Environmental values	yes
8.1		Relevant PNECs and other threshold levels: change in the listing (table)	yes
8.2	Individual protection measures (personal protective equipment)	Individual protection measures (personal protective equipment): Personal protective equipment must comply with Regulation (EU) 425/2016. Other national regulations must be observed. The standards listed below are minimum standards. The user must check whether additional standards must be complied with.	yes
8.2	Eye/face protection: Use safety goggle with side protection.	Eye/face protection: Use safety goggle with side protection. (EN 166).	yes
8.2		Material thickness: > 0.4 mm	yes
8.2		Breakthrough times of the glove material: >480 minutes (permeation: level 6)	yes
8.2		Type of material: CR: chloroprene (chlorobutadiene) rubber	yes
8.2		Material thickness: > 0.6 mm	yes
8.2		Breakthrough times of the glove material: >480 minutes (permeation: level 6)	yes
8.2	Respiratory protection: In case of dust formation: respiratory protection. Particulate filter device (EN 143).	Respiratory protection: In case of dust formation: respiratory protection. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).	yes
9.1	Appearance		yes
9.1	Colour: dark grey	Colour: black	yes
9.1	Other safety parameters		yes
9.1	Melting point/freezing point: 2,160 °C	Melting point/freezing point: 2,300 °C at 1,013 hPa (ECHA)	yes
9.1	Initial boiling point and boiling range: 2,300 °C	Boiling point or initial boiling point and boiling range: not determined	yes
9.1	Explosion limits of dust clouds: not determined		yes
9.1		Lower and upper explosion limit: not determined	yes
9.1		Decomposition temperature: not relevant	yes
9.1	pH (value): not applicable	pH (value): not applicable The products of hydrolysis have an alkaline reaction	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
9.1	Solubility(ies): not determined	Solubility(ies)	yes
9.1	Water solubility: material hydrolyses (half-life < 12 hours)	Water solubility: Hydrolysis in water	yes
9.1	- n-octanol/water (log KOW): this information is not available	Partition coefficient n-octanol/water (log value): 0.37 (ECHA)	yes
9.1	Vapour pressure: not determined	Vapour pressure: 0 mmHg at 25 °C (ECHA)	yes
9.1		Density and/or relative density	yes
9.1	Density: 2.22 g/cm ³	Density: 2.22 g/cm ³ at 20 °C (ECHA)	yes
9.1	Vapour density: this information is not available		yes
9.1	Viscosity: not relevant (solid matter)		yes
9.1	Explosive properties: none		yes
9.1	Oxidising properties: none		yes
9.1		Relative vapour density: information on this property is not available	yes
9.1		Particle characteristics: no data available	yes
9.2	other information: there is no additional information	Other information	yes
9.2		Information with regard to physical hazard classes: there is no additional information	yes
9.2		Other safety characteristics: there is no additional information	yes
11.1	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.	Acute toxicity: Shall not be classified as acutely toxic.	yes
11.2		Information on other hazards: There is no additional information.	yes
12.1		Aquatic toxicity (acute)	yes
12.1		Aquatic toxicity (acute): change in the listing (table)	yes
12.1		Biodegradation: The study does not need to be conducted be- cause the substance is inorganic. Hydrolysis in water.	yes
12.3		n-octanol/water (log KOW): 0.37	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
12.5	Results of PBT and vPvB assessment: Data are not available.	Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.	yes
12.7	Other adverse effects	Other adverse effects: Data are not available.	yes
14.1	UN number: 1402	UN number or ID number	yes
14.1		ADR/RID/ADN: UN 1402	yes
14.1		IMDG-Code: UN 1402	yes
14.1		ICAO-TI: UN 1402	yes
14.2	UN proper shipping name: CALCIUM CARBIDE	UN proper shipping name	yes
14.2		ADR/RID/ADN: CALCIUM CARBIDE	yes
14.2		IMDG-Code: CALCIUM CARBIDE	yes
14.2		ICAO-TI: Calcium carbide	yes
14.3	Class: 4.3 (substances which, in contact with water, emit flammable gases)		yes
14.3		ADR/RID/ADN: 4.3	yes
14.3		IMDG-Code: 4.3	yes
14.3		ICAO-TI: 4.3	yes
14.4	Packing group: I (substance presenting high danger)	Packing group	yes
14.4		ADR/RID/ADN: I	yes
14.4		IMDG-Code: I	yes
14.4		ICAO-TI: I	yes
14.7	UN number: 1402		yes
14.7	Proper shipping name: CALCIUM CARBIDE		yes
14.7	Class: 4.3		yes
14.7	Packing group: I		yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.7	UN number: 1402		yes
14.7	Proper shipping name: CALCIUM CARBIDE		yes
14.7	Class: 4.3		yes
14.7	Packing group: I		yes
14.7	Special provisions (SP): 951		yes
14.7	UN number: 1402		yes
14.7	Proper shipping name: Calcium carbide		yes
14.7	Class: 4.3		yes
14.7	Packing group: I		yes
15.1		Dangerous substances with restrictions (REACH, Annex XVII): change in the listing (table)	yes
15.1		Industrial Emissions Directive (IED)	yes
15.1		VOC content: 0 %	yes
15.1	Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD): not listed		yes
15.1		Regulation on persistent organic pollutants (POP): Not listed.	yes
16		Abbreviations and acronyms: change in the listing (table)	yes
16	Key literature references and sources for data: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU. Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	Key literature references and sources for data: Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU. Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).	yes

Abbreviations and acronyms

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Abbr.	Descriptions of used abbreviations
2017/164/EU	Commission Directive establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
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
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
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
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
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
LOEC	Lowest Observed Effect Concentration

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Abbr.	Descriptions of used abbreviations
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
SVHC	Substance of Very High Concern
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). 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 chapter 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.

Exposure Scenarios

Overview of exposure scenarios

ES#	Exposure scenario (ES) name
ES1 (PW)	Humidity analyzer

1. Exposure scenario 1: Widespread use by professional workers - Humidity analyzer

Sector of use: SU 19: Building and construction work; SU 24: Scientific research and development

Environment contributing scenario(s):		
CS 1	Humidity analyzer	ERC 9b, ERC 9a
Worker contributing scenario(s):		
CS 2	Loading and emptying the humidity analyzer	PROC 15

Further description of the use:

The calcium carbide test for determining moisture in subfloors and other concrete or plaster construction material is carried out using a 'carbide bomb' meter, which is a flask like device equipped with a pressure gauge. To perform the test a small sample of concrete is chiseled and crushed into a powder, weighed and placed into the flask. Calcium carbide (enclosed in a sealed glass vial) is added together with three or four steel balls and the vessel is sealed and shaken. The moisture within the sample reacts with the calcium carbide to produce acetylene gas and the pressure from this gas is measured on the pressure gauge.

1.1. Env CS 1: Humidity analyzer (ERC 9b, ERC 9a)

1.1.1. Conditions of use

Amount used, frequency and duration of use (or from service life)
<ul style="list-style-type: none"> Daily local widespread use amount: $\leq 5E-6$ tons/day <i>For use in humidity analyzers an amount of 5 g (5.0E-06 tons) is considered to be reasonable. Emissions are negligible anyway since the substance is enclosed in sealed glass vials for this use.</i> Percentage of EU tonnage used at regional scale: = 10 %
Conditions and measures related to biological sewage treatment plant
<ul style="list-style-type: none"> Biological STP: Standard [Effectiveness Water: 96.51%]
Conditions and measures related to external treatment of waste (including article waste)
<ul style="list-style-type: none"> Particular considerations on the waste treatment operations: No (low risk)

1.1.2. Releases

The local releases to the environment are reported in the following table. Note that the releases reported do not account for the removal in the modelled biological STP.

Table 1. Local releases to the environment

Release	Release estimation method	Explanations
Water	ERC	Release factor before on site RMM: 5% Release factor after on site RMM: 5% Local release rate: 2.5E-4 kg/day
Air	ERC	Release factor before on site RMM: 5% Release factor after on site RMM: 5%
Nonagricultural soil	ERC	Release factor after on site RMM: 5%

1.1.3. Exposure and risks for the environment and man via the environment

The exposure concentrations and risk characterization ratios (RCR) are reported in the following table. The exposure estimates have been obtained with EUSES 2.1.2 unless stated otherwise.

Table 2. Exposure concentrations and risks for the environment and man via the environment

Protection target	Exposure concentration	Risk quantification
Fresh water	Local PEC: 4.98E-7 mg/L	RCR < 0.01
Marine water	Local PEC: 4.38E-8 mg/L	RCR < 0.01

Risk characterization

Qualitative risk characterization (Sediment (freshwater), Sediment (marine water), Sewage Treatment Plant, Agricultural soil, Man via environment - Oral): - STP: In view of the operational conditions for current use (see above) any releases to wastewater are insignificant. Therefore, emissions to wastewater and risks to microorganisms in STPs are negligible. - Sediment will not be exposed to calcium carbide or any of its residues or degradation products due to its reactivity with water. The main degradation products acetylene and calcium hydroxide are either volatilized, or neutralized by the natural buffer capacity of environmental media, so that exposure of sediment is not expected. - Soil could potentially be exposed via deposition of airborne particles. However, in contact with air humidity calcium carbide will undergo rapid transformation to calcium hydroxide and acetylene. Acetylene is diluted in the atmosphere and subject to photo degradation. Calcium hydroxide, due to the very high surface area of particles, they will undergo quick transformation to CaCO₃ upon contact with CO₂. Thus, only CaCO₃ will be deposited in soil. CaCO₃ is of no environmental concern since being a ubiquitous constituent of any soil matrix. Therefore, any exposure of the terrestrial environment to calcium carbide can be excluded due to the substances' rapid transformation, and the relevant degradation products being of no environmental concern. - Man via environment: For the same reasons, exposure of humans to calcium carbide via the environment is considered to be irrelevant.

1.2. Worker CS 2: Loading and emptying the humidity analyzer (PROC 15)

Calcium carbide, enclosed in a sealed glass vial, is filled into the vessel together with three to four steel balls. Accordingly, any exposure of the operator to calcium carbide is excluded. Discharging the test materials from the flask might potentially entail skin contact to unreacted carbide, but the amount can be considered as irrelevant. Dust formation could, however, result in inhalation exposure. The amounts handled justify selection of PROC 15, which is related to small substance volumes handled (< 1 kg or 1 L).

1.2.1. Conditions of use

	Method
Product (article) characteristics	
• Physical form of the used product: Solid (material with no or very low dustiness)	TRA Workers 3.0
• Percentage (w/w) of substance in mixture/article: <= 100 %	TRA Workers 3.0
Amount used (or contained in articles), frequency and duration of use/exposure	
• Duration of activity: <= 0.25 h/day	TRA Workers 3.0
Technical and organizational conditions and measures	
• Occupational Health and Safety Management System: Basic	TRA Workers 3.0
• Local exhaust ventilation: No	TRA Workers 3.0
• Room ventilation: Basic (up to 3 ACH)	TRA Workers 3.0
Conditions and measures related to personal protection, hygiene and health evaluation	
• Respiratory protection: No	TRA Workers 3.0
• Face/eye protection: No	
Other conditions affecting workers' exposure	
• Skin surface potentially exposed: One hand face only (240 cm ²)	
• Operating temperature: <= 40 °C	TRA Workers 3.0
• Place of use: Indoor	TRA Workers 3.0

1.2.2. Exposure and risks for workers

The exposure concentrations and risk characterization ratios (RCR) are reported in the following table.

Table 3. Exposure concentrations and risks for workers

Route of exposure and type of effects	Exposure concentration	Risk quantification
Inhalation, local, long term	0.01 mg/m ³ (TRA Workers)	RCR < 0.01
Inhalation, local, acute	0.4 mg/m ³ (TRA Workers)	RCR = 0.1

Remarks on exposure dataset obtained with ECETOC TRA

The vapor pressure at operating temperature (40°C) used for the calculation is 2.63E-9 Pa.

Local exhaust ventilation effectiveness used by TRA: inhalation 0 %

Additional conditions of use related to the exposure estimate:

- Dermal protection: No

Risk characterization

Qualitative risk characterization (Dermal, local, long term, Dermal, local, acute, Eye, local):

Calcium carbide can be assumed to be irritating to the respiratory tract, the skin, and the eyes. Moderate hazards related to these effects are identified. Accordingly, adoption of the following risk management measures, as appropriate, ensures that risks arising from local effects are adequately controlled: PPE: Respiratory protection: - In case product dust is released: Dust protection mask in accordance with EN 149 FFP2.- In case product dust is released in high amounts: Dust protection mask in accordance with EN 149 FFP3.Skin and body protection: - Wear protective gloves made of nitrile rubber. - Suitable protective clothing in case dust is formed. Eye protection: Safety goggles. General hygiene measures: - Implement skin protection measures according to skin protection schedule; - Minimize number of staff exposed; - Segregation of the emitting process; - Effective contaminant extraction; - Good standard of general ventilation; - Minimization of manual phases; - Avoidance of contact with contaminated tools and objects; - Management/supervision in place to check that the RMMs in place are being used correctly and OCs followed; - Training for staff on good practice; - Good standard of personal hygiene. These measures are reflected in the exposure scenario, as appropriate, ensuring adequate control of risks from local effects.