Activated carbon powder

article number: **5963** Version: **3.0 en** Replaces version of: 2021-04-16 Version: (2)

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

1.1 Product identifier

Activated carbon powder
5963
931-334-3
7440-44-0
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 **Website:** www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment sheet:

e-mail (competent person):

sicherheit@carlroth.de

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Service City Hospital	Dudley Rd	B187QH Birmingham	844 892 0111	

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
2.11	Self-heating substance and mixture	2	Self-heat. 2	H252

For full text of abbreviations: see SECTION 16

2.2 Label elements



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acc. to Regulation (EC) No. 1907/2006 (REACH)

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	Labelling	
	Signal word	Warning
	Pictograms	
	GHS02	
	Hazard stateme	ents
	H252	Self-heating in large quantities; may catch fire
	Precautionary s	tatements
	Precautionary s	tatements - prevention
	P235+P410	Keep cool. Protect from sunlight
	Precautionary s	tatements - storage
	P407 P413	Maintain air gap between stacks or pallets Store bulk masses greater than 10 kg/22 lbs at temperatures not exceeding 50 °C/122 °F
3	Other hazards	
	Results of PBT a	nd vPvB assessment
	According to the	results of its assessment, this substance is not a PBT or a vPvB.
	Endocrine disru	pting properties
	Does not contair	an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$.

3.1 Substances

Name of substance	Activated carbon
Molecular formula	С
Molar mass	12,01 ^g / _{mol}
CAS No	7440-44-0
EC No	931-334-3

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes Take off contaminated clothing.

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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.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

- **4.2 Most important symptoms and effects, both acute and delayed** Irritant effects
- **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, foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Self-heating: may catch fire.

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

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. Do not breathe dust.

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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.

Other information relating to spills and releases

Place in appropriate containers for disposal.

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

Provide adequate ventilation as well as local exhaustion at critical locations. Avoidance of ignition sources.

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.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C Maximum storage temperature: <50 °C

7.3 Specific end use(s)

No information available.

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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/ m ³]	Nota- tion	Source
GB	dust		WEL	10			i	EH40/2005
GB	dust		WEL	4			r	EH40/2005
GB	graphite	7440-44-0	WEL	10			i	EH40/2005
GB	graphite	7440-44-0	WEL	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 15minute 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	3 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects			
DNEL	1,84 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects			

Environmental values

Relevant	Relevant PNECs and other threshold levels					
End- point	Threshold level	Organism	Environmental com- partment	Exposure time		
PNEC	10 ^{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.

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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 consider-able 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

• 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). P1 (filters at least 80 % 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
Form	powder
Colour	black
Odour	odourless
Melting point/freezing point	>1.000 °C
Boiling point or initial boiling point and boiling range	not determined
Flammability	self-heating substance in accordance with GHS criteria



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	Lower and upper explosion limit	20 g/m³ (LEL)
	Flash point	not applicable
	Auto-ignition temperature	430 °C at 99,1 kPa (ECHA)
	Decomposition temperature	>500 °C
	pH (value)	not applicable
	Kinematic viscosity	not relevant
	Solubility(ies)	
	Water solubility	not determined
	Partition coefficient	
	Partition coefficient n-octanol/water (log value):	not relevant (inorganic)
	Vapour pressure	not determined
	Density and/or relative density	
	Density	2,31 ^g / _{cm³} at 20 °C (ECHA)
	Relative vapour density	Information on this property is not available.
	Particle characteristics	
	Particle size	20,9 µm
	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

Dust explosibility.

If heated

Risk of ignition. Danger of spontaneous combustion.

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

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10.4 Conditions to avoid

Keep away from heat. Decompostion takes place from temperatures above: >500 °C.

- **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.

Acute toxicity					
Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	>2.000 ^{mg} / _{kg}	rat		ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

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.



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• If in eyes

causes slight to moderate irritation

• If inhaled

Inhalation of dust may cause irritation of the respiratory system

• If on skin

Frequently or prolonged contact with skin may cause dermal irritation

• Other information

none

11.2 Endocrine disrupting properties

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

11.3 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.

12.2 Persistence and degradability

Theoretical Oxygen Demand: 2,664 ^{mg}/_{mg} Theoretical Carbon Dioxide: 3,664 ^{mg}/_{mg}

12.3 Bioaccumulative potential Data are not available.

12.4 Mobility in soil

Data are not available.

- **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 $\ge 0,1\%$.

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.



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Waste treatment of containers/packagings

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

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Properties of waste which render it hazardous

HP 3 flammable

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 or ID number

17.1		
	ADRRID	UN 1362
	IMDG-Code	UN 1362
	ICAO-TI	UN 1362
14.2	UN proper shipping name	
	ADRRID	CARBON, ACTIVATED
	IMDG-Code	CARBON, ACTIVATED
	ICAO-TI	Carbon, activated
14.3	Transport hazard class(es)	
	ADRRID	4.2
	IMDG-Code	4.2
	ICAO-TI	4.2
14.4	Packing group	
	ADRRID	III
	IMDG-Code	III
	ICAO-TI	III
14.5	Environmental hazards	non-environmentally hazardous acc. to the dan- gerous goods regulations
440		

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.

14.8 Information for each of the UN Model Regulations

Safety data sheet Safety data sheet acc. to Regulation (EC) No. 1907/2006 (REACH)

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Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additiona information	
Proper shipping name	CARBON, ACTIVATED
Particulars in the transport document	UN1362, CARBON, ACTIVATED, 4.2, III, (E)
Classification code	S2
Danger label(s)	4.2
Special provisions (SP)	646
Excepted quantities (EQ)	E1
Limited quantities (LQ)	0
Transport category (TC)	4
Tunnel restriction code (TRC)	E
Hazard identification No	40
Emergency Action Code	1Y
Regulations concerning the International Carria information	ge of Dangerous Goods by Rail (RID)Additional
Classification code	S2
Danger label(s)	4.2
Special provisions (SP)	646
Excepted quantities (EQ)	E1
Limited quantities (LQ)	0
Transport category (TC)	4
Hazard identification No	40
International Maritime Dangerous Goods Code (IMDG) - Additional information
Proper shipping name	CARBON, ACTIVATED
Particulars in the shipper's declaration	UN1362, CARBON, ACTIVATED, 4.2, III
Marine pollutant	-
Danger label(s)	4.2
Special provisions (SP)	223, 925
Excepted quantities (EQ)	E1
Limited quantities (LQ)	0
EmS	F-A, S-J

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Stowage category	A
International Civil Aviation Organization (ICAC	-IATA/DGR) - Additional information
Proper shipping name	Carbon, activated
Particulars in the shipper's declaration	UN1362, Carbon, activated, 4.2, III
Danger label(s)	4.2
Special provisions (SP)	A3
Excepted quantities (EQ)	E1

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)

Seveso Directive

2012	2012/18/EU (Seveso III)		
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the ap- plication of lower and upper-tier re- quirements	Notes
	not assigned		

Deco-Paint Directive

VOC content	0 %
VOC content	0 ^g /l

Industrial Emissions Directive (IED)

VOC content	0 %
VOC content	0 ^g / _l

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

Water Framework Directive (WFD)

not listed

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

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Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list not listed

Restrictions according to GB REACH, Annex 17

not 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
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 CICR Chemical Inventory and Control Regulation 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 NCI National Chemical Inventory NCI New Zealand Inventory of Chemicals PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS) 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.



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SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety relev- ant
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Warning		yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Proper shipping name: CARBON, ACTIVATED	yes
14.8		Particulars in the transport document: UN1362, CARBON, ACTIVATED, 4.2, III, (E)	yes
14.8		Regulations concerning the International Car- riage of Dangerous Goods by Rail (RID)Addition- al information	yes
14.8		Classification code: S2	yes
14.8		Danger label(s): 4.2	yes
14.8		Danger label(s): change in the listing (table)	yes
14.8		Special provisions (SP): 646	yes
14.8		Excepted quantities (EQ): E1	yes
14.8		Limited quantities (LQ): 0	yes
14.8		Transport category (TC): 4	yes
14.8		Hazard identification No: 40	yes
14.8		Proper shipping name: CARBON, ACTIVATED	yes
14.8		Particulars in the shipper's declaration: UN1362, CARBON, ACTIVATED, 4.2, III	yes
14.8		Proper shipping name: Carbon, activated	yes
14.8		Particulars in the shipper's declaration: UN1362, Carbon, activated, 4.2, III	yes
15.1	Restrictions according to REACH, Annex XVII: not listed		yes

Safety data sheet Safety data sheet acc. to Regulation (EC) No. 1907/2006 (REACH)

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Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
15.1	List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list: Not listed.		yes
15.1	VOC content: 0 % 0 ^g / _l	VOC content: 0 %	yes
15.1		VOC content: 0 ^g / _l	yes
15.1		Regulation on persistent organic pollutants (POP): not listed	yes
15.1		National regulations(GB)	yes
15.1		List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list: not listed	yes
15.1		Restrictions according to GB REACH, Annex 17: not listed	yes
15.1		Other information: Directive 94/33/EC on the protection of young people at work. Observe employment restric- tions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.	yes
15.1		National inventories: change in the listing (table)	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concern- ing the International Carriage of Dangerous Goods by Road)
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
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identi- fier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-li- cence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GB REACH	The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended)
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Na- tions

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Abbr.	Descriptions of used abbreviations
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
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regula- tions concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
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

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). 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
H252	Self-heating in large quantities; may catch fire.

Disclaimer

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