



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## **Activated carbon**

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

#### **1.1 Product identification**

Activated carbon

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

Relevant identified uses:  
Solid material for cleaning of gases

#### **1.3 Details of the supplier of the safety data sheet**

Giebel FilTec GmbH  
Carl-Zeiss-Str. 5  
DE-74626 Bretzfeld-Schwabbach  
Tel. +49 (0) 7946 944401-0  
Fax +49 (0) 7946 944401-29  
Email [info@giebel-adsorber.de](mailto:info@giebel-adsorber.de)

#### **1.4 Emergency telephone number**

+49 / 7946 / 9444010 (during normal business hours)  
+49 / 176 / 42554437 (outside normal business hours)

### **Section 2: Hazards Identification**

#### **2.1 Label elements**

**According to Regulation (EC) No 1272/2008 [CLP]**

The product does not require a hazard warning label in accordance with GHS criteria.

#### **2.2 Label elements**

**According to Directives (EG) No 1272/2008**

**Contains:** Activated Carbon - High Density Skeleton

**Hazard pictograms:** None

**Signal word:** None.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

**Hazard statements:** The substance does not meet the criteria for classification.

## Precautionary statements

**Prevention:** Observe good industrial hygiene practices.

**Response:** Wash hands after handling.

**Storage:** Store away from incompatible materials.

**Disposal:** Dispose of waste and residues in accordance with local authority requirements.

## Supplemental label information:

This material does not ignite easily; however, feasible precautions against dust explosion are recommended. Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, permanganate, etc., may result in fire. Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined spaces. Before workers enter such an area or vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed. Spent (or used) activated carbons may exhibit properties pertaining to the adsorbed components.

## 2.3 Other hazards

### According to Regulation (EG) No. 1272/2008

May form explosible dust-air mixture if dispersed.

Not a PBT or vPvB substance or mixture.

## Section 3: Composition/Information on Ingredients

### 3.1 Substances

Chemical nature

Synonyms: Adsorbents, Activated carbon

Carbonaceous adsorbent, carbon content > 85%

CAS number: 7440-44-0

EC number: 931-328-0

Hazardous ingredients (GHS) according to Regulation (EC) No. 1272/2008

No particular hazards known. In accordance with the leading statutory provisions there are no components which must get advised.

## Section 4: First-Aid Measures

### 4.1 Description of first aid measures

Remove contaminated clothing.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

If inhaled:

Keep patient calm, remove to fresh air.

On skin contact::

Wash thoroughly with soap and water

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:

Rinse mouth and then drink plenty of water.

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

Dusts may irritate the respiratory tract, skin and eyes. Coughing. Exposed individuals may experience eye tearing, redness, and discomfort.

## 4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Symptomatic treatment (decontamination, vital functions).

## Section 5: Fire-Fighting Measures

### 5.1 Extinguishing agent

#### Extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>). Apply extinguishing media carefully to avoid creating airborne dust. Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire

### 5.2 Special hazards arising from the substance or mixture

Material burns slowly without flame. Activated carbon which has been allowed to smolder for a long time in a confined space may accumulate carbon monoxide above its permissible exposure limit. Do not enter permitted confined space or enclosed area without proper PPE.

High concentrations of dust may form combustible dust concentrations in air.

Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, permanganate, etc., may result in fire.

During fire, hazardous combustion products are released that may include: Carbon oxides (CO<sub>x</sub>).



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## 5.3 Advice for fire-fighters

### Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

### Special fire fighting procedures

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

## Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials

## Section 6: Accidental Release Measures

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

#### For non-emergency personnel

Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

#### For emergency responders

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

### 6.2 Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

### 6.3 Methods and material for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). The product is immiscible with water and will sediment in water systems. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use.

Used or spent activated carbon may contain pollutants which require the material to be treated according to specific laws or local permits and may require the use of risk management measures when handling the product.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## 6.4 Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

## Section 7: Handling and Storage

### 7.1 Precautions for safe handling

Minimise dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Oxygen concentration should not fall below 19.5 % at sea level (pO<sub>2</sub> = 135 mmHg). Oxygen level alarms are advisable in enclosed storage areas/confined spaces containing wet activated carbon. Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep dry. Avoid high temperatures. Protect from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see section 10 of the SDS). Access to storage of wet activated carbon should be restricted. Oxygen level alarms are advisable in enclosed storage rooms containing wet activated carbon

### 7.3 Specific end use(s)

Adsorbent in liquid and gas or vapor phrases; carrier for catalysts

## Section 8: Exposure Controls/Personal Protection

### 8.1 Control parameters

Components with workplace-related Monitoring limits.

Ingredient:

Activated Carbon

Ingredients with workplace-related activated carbon to be monitored (85%):

AGW 3 \* 10 \*\* mg / m<sup>3</sup>

2 (II); \* respirable fraction \*\* respirable fraction; AGS DNEL values:

Workers in industry and work: 3 mg / m<sup>3</sup> (short-term and long-term)

Consumers: 0.5 mg / m<sup>3</sup> (short-term and long-term) PNEC values:

No harmful effect known



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Remark:

Senate Commission for exam of harmful substances from the DFG (MAK-Commission) Colloidal Amorphous Silica (7631-86-9) including fumed silica and in the wet process produced Silicic acid (Precipitated silicic acid, Silica gel). A risk of fetal damage does not need to be feared if the occupational exposure limit value and the biological limit value (BGW) are adhered to.

## 8.2 Exposure controls Personal protective equipment

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined spaces. Before workers enter such an area or vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed. Oxygen concentration should not fall below 19.5% at sea level ( $pO_2 = 135\text{mmHg}$ ). Oxygen level alarms are advisable in enclosed storage areas/confined spaces containing wet activated carbon.

### Individual protection measures, such as personal protective equipment

#### General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

#### Eye/face protection

Wear safety glasses with side shields (or goggles).

#### Skin protection

##### - Hand protection

Wear appropriate chemical resistant gloves such as Nitrile rubber; Butyl rubber.

##### - Other

Wear suitable protective clothing

#### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

#### Hygiene measures

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Environmental exposure controls

Environmental manager must be informed of all major releases.

## Section 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Form: Solid particles, from microns to millimeters in size

Colour: black

Odour: odourless

Odour threshold: not determined

pH value: Not available

Melting point: Not available

Boiling point: Not applicable

Flash point: Not available

Evaporation rate: not applicable

Flammability: Fine particles may form explosive mixtures with air

Lower explosion limit: Not available

Upper explosion limit: Not available

Vapour pressure: Not applicable

Relative vapour density (air): not applicable

Solubility(ies): insoluble

Partitioning coefficient n-octanol/water (log Kow): Not available

Self-ignition: not self-igniting

Thermal decomposition: not determined

Viscosity, dynamic: not applicable

Explosion hazard: not explosive

Fire promoting properties: not fire-propagating

Oxidising properties: Not oxidising.

### 9.2 Other information

Bulk density: 250-600 kg/m<sup>3</sup>

Molecular formula: C

Molecular weight: 12.01 g/mol



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Section 10: Stability and Reactivity

### 10.1 Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

### 10.2 Chemical stability

Material is stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Contact with strong oxidizers like chlorine, liquid oxygen, permanganate, ozone, may result in rapid combustion and possible explosion. Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined spaces. Before workers enter such an area or vessel containing activated carbon, the vessel's oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.

### 10.4 Conditions to avoid

Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimise dust generation and accumulation.

### 10.5 Incompatible materials

Keep away from strong oxidizing acids; other strong oxidants

### 10.6 Hazardous decomposition products

Thermal decomposition or combustion may produce: Carbon oxides.

## Section 11: Toxicological Information

### General information

Occupational exposure to the substance or mixture may cause adverse effects.

#### Information on likely routes of exposure Inhalation

Prolonged inhalation may be harmful. Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Pre-existing pulmonary disorders, such as emphysema, may possibly be aggravated by prolonged exposure to high concentrations of carbon

#### Skin contact

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

#### Eye contact

May irritate eyes.





# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Ingestion

May cause discomfort if swallowed. When large amounts are ingested orally, congestion may occur. However, ingestion is not likely to be a primary route of occupational exposure.

## Symptoms

Dusts may irritate the respiratory tract, skin and eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Coughing.

## 11.1 Information on toxicological effects

### Acute toxicity

Not expected to be acutely toxic.

Experimental/calculated data:

LD50 rat (oral): > 2000 mg/kg

The product has not been tested. The statement has been derived from products of a similar structure or composition

LC50 rat (by inhalation): > 2,07 mg/l 4 h

The product has not been tested. The statement has been derived from products of a similar structure or composition. An aerosol was tested.

LD50 rabbit (dermal): > 5000 mg/kg

The product has not been tested. The statement has been derived from products of a similar structure or composition

### Skin corrosion/irritation

May cause skin irritation.

Skin irritation: in vivo, rabbit, New Zealand White, semioclusive, shaved, 4 hours, not irritating (OECD Guideline 404).

### Serious eye damage/eye irritation

May cause eye irritation.

Eye irritation: in vivo, rabbit, New Zealand White, 24 hours, not irritating (OECD test guideline no. 405).

### Respiratory sensitisation

Due to partial or complete lack of data the classification is not possible.

### Skin sensitisation

Skin sensitisation: in vivo (LLNA), not sensitising. (OECD TG 429) This product is not expected to cause skin sensitisation.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Germ cell mutagenicity

In vitro gene mutation study in mammalian cells, mouse lymphoma L5178Y cells, with and without metabolic activation, results: negative (OECD Test Guideline No. 476).

## Carcinogenicity

Due to partial or complete lack of data the classification is not possible.

## Reproductive toxicity

Due to partial or complete lack of data the classification is not possible.

## Specific target organ toxicity single exposure

Due to partial or complete lack of data the classification is not possible.

## Specific target organ toxicity repeated exposure

Rats were exposed to steam-activated carbon by inhalation (whole body) for 7 hours/day, 5 days/week for a period of one year at a concentration of 8.12 mg/m<sup>3</sup>. Mortality and clinical signs were recorded, gross and microscopic examination of the lungs was performed. Chronic exposure of rats to steam-activated carbon dust at a concentration of 8.12 mg/m<sup>3</sup> causes local pulmonary effects, rather than systemic effects. No NOAEC or LOAEC could be established due to the limitations of the study design.

## Aspiration hazard

Due to the physical form of the product it is not an aspiration hazard.

## Mixture versus substance information

The product is a substance

## Other information

Excessive concentrations of activated carbon may reduce visibility, cause unpleasant deposits in the eye, ears, and nasal passages, or irritate the skin or mucous membranes by mechanical means. However, normal workplace exposure has not been determined to cause a significant health effect.

## Section 12: Ecological Information



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## 12.1 Toxicity

Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.

## 12.2 Persistence and degradability

The product is not biodegradable

## 12.3 Bioaccumulative potential

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

### Partition coefficient n-octanol/water (log Kow)

Not available.

### Bioconcentration factor (BCF)

Not available

## 12.4 Mobility in soil

The product is insoluble in water and will sediment in water systems.

## 12.5 Results of PBT and vPvB assessment

Not a PBT or vPvB substance or mixture.

## 12.6 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component..

## Section 13: Disposal Considerations

### 13.1 Waste treatment methods

#### Residual waste

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

#### Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## EU waste code

The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

## Disposal methods/information

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

## Special precautions

Dispose in accordance with all applicable regulations.

## Section 14: Transport Information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### AND

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

## Section 15: Regulatory Information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

## Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended**

Not listed.

## Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed

## Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

## Other regulations

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

## National regulations



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

Follow national regulation for work with chemical agents

## 15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out by the AC Consortium.

## Section 16: Other Information

### Abbreviations and acronyms

DNEL: Derived No Effect Level.

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50 Lethal concentration, 50 percent

LD50 Lethal dose, 50 percent

PBT: Persistent, bioaccumulative, toxic.

vPvB: Very Persistent and very Bioaccumulative

### References

Chemical safety report

### Information on evaluation method leading to the classification of mixture

Not applicable

### Full text of any H-statements not written out in full under Sections 2 to 15

None

### Training information

Follow training instructions when handling this material.



# Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Version 07.18  
Date: 19.07.2018  
Name: Activated-carbon

## Further information

Chemical safety report.

## Disclaimer

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. It relates specifically to the product designated and may not be valid for the product when used with any other materials or products or in a particular process.

High concentrations of organic compounds in a gas flow can produce a great heat of adsorption, which as the case may be cause a spontaneous ignition or hotspot in the activated carbon bed. Under certain conditions some chemical components can in contact with activated carbon oxidize, break down or polymerize. This can cause combustible conditions potentially.

The information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee, express or implied, is made as to its accuracy, reliability or completeness, It is the user's responsibility to review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with applicable hazard communication and GSA requirements. We do not accept responsibility for any loss or damage which may occur from the use of this information.