Safety Data Sheet (SDS) — Powdered Activated Carbon

Identification of the substance/mixture and of the company/undertaking

1.1Product identifier

Substance name: Powdered Activated Carbon
EC No.: 931-334-3
CAS No.: 7440-44-0

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

Recommended uses: Laboratory chemical; laboratory and analytical use
Uses advised against: Private use (household use); food, beverages and animal feed

1.3 Details of the supplier of the safety data sheet

Company: Henan CarbonFresh Activated Carbon Co., Ltd.
Website: https://www.carbonfreshcn.com/
Email: info@carbonfreshcn.com
Telephone: (+86) 155-3801-7198
Address: Innovation Park · Enterprise Headquarters Base, High-tech Zone, Zhengzhou, Henan Province, China

Hazards identification

2.1 Classification of the substance or mixture (according to Regulation (EC) No 1272/2008 (CLP)

Self-heating substances and mixtures — Category 2 (Self-heat. 2)
Hazard statement code: H252 (Self-heating in large quantities; may catch fire)

2.2 Label elements (according to CLP)

Signal word: Warning
Hazard pictogram: GHS02 (Flame)
Hazard statement: H252 — Self-heating in large quantities; may catch fire
Precautionary statements:
P235 + P410: Keep cool. Protect from sunlight.
Storage-related: P407: Maintain an air gap between stacks or pallets. P413: Bulk material greater than 10 kg (22 lb) should be stored at temperatures not exceeding 50 °C (122 °F).
Labelling for packages with contents not exceeding 125 mL:
Signal word: Warning
Hazard pictogram: same as above
For packages with contents not exceeding 10 mL:
Signal word / hazard pictogram / hazard statement / precautionary statements: Not required

2.3 Other hazards

PBT / vPvB assessment result: This substance is not PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative).
Endocrine disrupting properties: Does not contain endocrine disruptors at concentrations ≥ 0.1%.

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Composition/information on ingredients

3.1 Substance

Name: Activated carbon
Molecular formula: C
Molar mass: 12.01 g/mol
CAS No.: 7440-44-0
EC No.: 931-334-3

First aid measures

4.1 Description of first aid measures

General: Remove contaminated clothing.
Inhalation: Move to fresh air. If in doubt or symptoms persist, seek medical attention.
Skin contact: Rinse skin with water / shower.
Eye contact: Rinse carefully with water for several minutes. If in doubt or symptoms persist, seek medical attention.
Ingestion: Rinse mouth. If unwell, call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Irritant reactions.

4.3 Indication of any immediate medical attention and special treatment needed

No specific measures indicated.

Firefighting measures

5.1 Extinguishing media

Use extinguishing measures appropriate to surrounding fire.
Suitable extinguishing media: Water, foam, dry powder, ABC fire extinguisher.
Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture

May self-heat and can ignite.
Combustion products: Carbon monoxide (CO), carbon dioxide (CO_2).

5.3 Advice for firefighters

Do not inhale smoke from fire and/or explosion. Fight fire from a safe distance using standard precautions. Wear self-contained breathing apparatus.

Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures (for non-emergency personnel)

Wear appropriate protective equipment (see Section 8) to prevent contamination of skin, eyes and clothing.
Avoid inhalation of dust.

6.2 Environmental precautions

Keep away from drains, surface water and groundwater. Collect contaminated wash water and dispose of properly.

6.3 Methods and material for containment and cleaning up

Containment: Cover drains. Collect mechanically.
Clean-up: Mechanically pick up; control dust.
Other information: Place in suitable containers for disposal.

6.4 Reference to other sections

See Section 5 for hazardous combustion products; Section 8 for personal protective equipment; Section 10 for incompatible materials; Section 13 for disposal.

Handling and storage

7.1 Precautions for safe handling

Provide sufficient general and local exhaust ventilation. Avoid sources of ignition.
Prevent formation of dust and aerosols; remove dust deposits.
Occupational hygiene measures: Wash hands before breaks and at the end of work. Keep away from food, beverages and animal feed. Do not smoke while using.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place, keep container tightly closed.
Pay attention to co-storage instructions; incompatible materials see Section 10.
Ventilation: Local and general ventilation.
Recommended storage temperature: 15–25 °C
Maximum storage temperature: < 50 °C

7.3 Specific end uses

No information available.

Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits (workplace exposure limit): No specific information available.
DNEL (Derived No Effect Level) — human health related:
DNEL (long-term systemic, inhalation, worker): 3 mg/m³
DNEL (long-term local, inhalation, worker): 1.84 mg/m³
PNEC (Predicted No Effect Concentration) — environment related:
PNEC (terrestrial organisms, soil, short-term): 10 mg/kg

8.2 Exposure controls

Eye / face protection: Safety goggles with side protection.
Skin protection (hands):
Wear suitable gloves — chemical protective gloves (tested to EN 374).
Recommended material: NBR (nitrile rubber)
Material thickness: > 0.11 mm
Breakthrough time: > 480 minutes (permeation category 6)
Other: Recommend skin-rest intervals and preventive skin protection (barrier cream/ointment).
Respiratory protection:
When dust is generated, use respiratory protection. Particulate filter (EN 143), P1 (at least filters 80% of airborne particles, colour code: white).
Environmental exposure controls: Keep away from drains, surface water and groundwater.

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: > 1000 °C
Boiling point / boiling range: Not determined
Flammability: Classified as self-heating (GHS)
Explosion limits (lower/upper): 20 g/m³ (LEL)
Flash point: Not applicable
Auto-ignition temperature: 430 °C (at 99.1 kPa, source: ECHA)
Decomposition temperature: > 500 °C
pH: Not applicable
Dynamic viscosity: Not relevant
Solubility in water: Not determined
Partition coefficient n-octanol/water (log Kow): Not relevant (inorganic)
Vapour pressure: Not determined
Density: 2.31 g/cm³ (20 °C, ECHA)
Relative vapour density: Not relevant (solid)
Particle characteristics: Particle size 20.9 µm
Oxidising properties: None

9.2 Other information

No additional physicochemical or safety characteristics available.

Safety Data Sheet (SDS) — Powdered Activated Carbon

Stability and reactivity

10.1 Reactivity

Dust can be explosive.
Heating increases risk of ignition and self-heating hazard.

10.2 Chemical stability

Stable under normal conditions and under the recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

Can react violently with strong oxidisers.

10.4 Conditions to avoid

Avoid heat sources. Decomposition begins above > 500 °C.

10.5 Incompatible materials

No further information given (avoid strong oxidisers).

10.6 Hazardous decomposition products

See Section 5: carbon monoxide, carbon dioxide, etc.

Toxicological information

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

Acute toxicity: Not classified as acutely toxic.
Oral LD50 (rat): > 2000 mg/kg (source: ECHA)
Skin corrosion/irritation: Not classified as corrosive/irritant.
Serious eye damage/eye irritation: Not classified as causing severe eye damage or eye irritation.
Respiratory or skin sensitisation: Not classified as a respiratory or skin sensitiser.
Germ cell mutagenicity: Not classified as mutagenic.
Carcinogenicity: Not classified as carcinogenic.
Reproductive toxicity: Not classified as a reproductive toxicant.
Specific target organ toxicity — single exposure (STOT SE): Not classified.
Specific target organ toxicity — repeated exposure (STOT RE): Not classified.
Aspiration hazard: Not classified as an aspiration hazard.

11.2 Information on likely routes of exposure and symptoms

Ingestion: No data.
Eye contact: May cause mild to moderate irritation.
Inhalation: Dust inhalation may irritate the respiratory tract.
Skin contact: Repeated or prolonged contact may cause skin irritation.

11.3 Endocrine disrupting properties

Does not contain endocrine disruptors at concentrations ≥ 0.1%.

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Ecological information

12.1 Toxicity

Not classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Theoretical oxygen demand (ThOD): 2.664 mg/mg
Theoretical CO_2 production: 3.664 mg/mg

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Endocrine disrupting properties

Does not contain endocrine disruptors at concentrations ≥ 0.1%.

12.7 Other adverse effects

No data available.

Disposal considerations

13.1 Waste treatment methods

The substance and its containers must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
Do not discharge into drains.

13.2 Waste classification / regulation

The waste code / description should be assigned according to EU and industry / process specifics.
Properties that may make it hazardous waste:
HP 3: Flammable

13.3 Notes

Waste should be separated into categories as accepted by local or national waste management facilities. Non-contaminated packaging may be recyclable.

Transport information

14.1 UN number

ADR: UN 1362
IMDG: UN 1362
ICAO-TI (air): UN 1362

Safety Data Sheet (SDS) — Powdered Activated Carbon

14.2 UN proper shipping name

ADR/IMDG: CARBON, ACTIVATED
ICAO-TI: Carbon, activated

14.3 Transport hazard class(es)

ADR/IMDG/ICAO: 4.2 (Self-heating substances)

14.4 Packing group

ADR/IMDG/ICAO: III

14.5 Environmental hazards

Not classified as an environmental hazard under the dangerous goods regulations.

14.6 Special precautions for user

Observe ADR regulations for transport within premises.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for bulk transport (goods not intended for bulk transport).

14.8 Additional information on UN model regulations (summary)

ADR additional information:
Correct shipping name: CARBON, ACTIVATED
Document details: UN1362, CARBON, ACTIVATED, 4.2, III, (E)
Classification code: S2
Hazard identification number: 40
Danger label: 4.2
Special provisions: 646
Excepted quantities: E1
Limited quantity: 0
Transport category: 4
Tunnel restriction code (TRC): E

IMDG additional information:
Correct shipping name: CARBON, ACTIVATED
Danger label: 4.2
Special provisions: 223, 925
Excepted quantities: E1
Limited quantity: 0
EmS: F-A, S-J
Stowage category: A

ICAO/IATA additional information:
Correct shipping name: Carbon, activated
Document details: UN1362, Carbon, activated, 4.2, III
Danger label: 4.2
Special provisions: A3
Excepted quantities: E1

Safety Data Sheet (SDS) — Powdered Activated Carbon

Regulatory information

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

REACH Annex XVII restrictions: Lists restrictions of hazardous substances in tattoo inks and permanent make-up (entry R75 references restrictions and labelling requirements for activated carbon in tattoo/permanent make-up uses). (Translator's note: original contained further detailed clauses regarding classification conditions, limits and labelling requirements; long text appears in the source file.)

REACH Annex XIV (Authorisation list) / SVHC Candidate List: Not listed

Seveso Directive (2012/18/EU): Not applicable

VOC content (paints related): 0%

Other regulations such as RoHS, PRTR, Water Framework Directive, precursor regulations for explosives, precursor chemicals, ozone depleting substances (ODS), persistent organic pollutants (POP), etc.: Not listed / not applicable

Other information:

Compliance with the protective legislation for young workers (Directive 94/33/EC) and protection during pregnancy and breastfeeding (Directive 92/85/EEC) concerning employment restrictions.

National chemical inventory status (listing presence in national inventories):

Australia (AIIC): Listed
Canada (DSL): Listed
China (IECSC): Listed
EU (ECSI/EINECS etc.): Listed
Korea (KECI): Listed
Mexico (INSQ): Listed
New Zealand (NZIoC): Listed
Philippines (PICCS): Listed
Turkey (CICR): Listed
Taiwan (TCSI): Listed
USA (TSCA): Listed (ACTIVE)
Vietnam (NCI): Listed

15.2 Chemical safety assessment

In accordance with REACH Article 14(1), a chemical safety assessment has been carried out for this substance or mixture components where the registered volume per registrant reaches 10 tonnes per year or more.

Other information

Indication of changes in this SDS: Several changes listed affecting Section 2.2 and Section 15.1 (e.g., labelling requirements for different package sizes and hazard pictogram details).

Abbreviations and acronyms: The SDS includes definitions for ADR, CAS, CLP, DNEL, EC No., ED,VOC，EINECS, ELINCS, EmS, GHS, IATA, ICAO, IMDG, LD50, LEL, NLP, PBT, PNEC, REACH, SVHC, vPvB, etc.

References and sources: CLP Regulation (EC No 1272/2008), REACH (EC No 1907/2006) and relevant international transport and dangerous goods regulations (ADR, IMDG, IATA/DGR), ECHA data.

Hazard phrase used (in Sections 2 and 3):

oH252: Self-heating in large quantities; may catch fire.

Disclaimer: Information is based on the current state of knowledge. This SDS is prepared specifically for the described product.

If you would like, I can:

Provide a downloadable English SDS in PDF or Word format.

Produce a bilingual (Chinese-English) side-by-side version for regulatory use.

Translate any additional attachments or extended regulatory text (for example, the full REACH Annex XVII R75 clause) into English.

Would you like the SDS formatted into a downloadable document or the bilingual layout?