

ACTIVATED CARBON (GRANULAR/POWDER)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

ACTIVATED CARBON (GRANULAR/POWDER)
Synonyms: Activated Charcoal; Carbo Activatus
CAS: 7440-44-4

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Adsorbent for water and air purification, decolorisation and purification of liquids, gas-phase filtration, effluent treatment media. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Based on available data, this substance does not meet the classification criteria for any physical, health or environmental hazard class.

Not classified	This substance/mixture does not meet the criteria for classification under GHS, based on available data.
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2.2 GHS label elements, including precautionary statements:

GHS: No signal word / pictogram required

Hazard statements:

None assigned.

Precautionary statements:

P261: Avoid breathing dust.
P280: Wear protective gloves/eye protection/dust mask where fine powder is handled.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:

Combustible dust hazard: Fine activated-carbon powder, when dispersed in air as a dust cloud and in the presence of an ignition source, can present a dust explosion/flash-fire hazard, as is standard practice for any fine carbon powder – see sections 7 and 10. Activated carbon can also deplete oxygen in enclosed storage (e.g. silos, ship holds) through slow adsorption/oxidation processes; adequate ventilation and oxygen monitoring is recommended before entry into confined storage spaces. Does not meet the criteria for PBT or vPvB.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Amorphous carbon, activated by thermal/chemical processing to develop a highly porous internal structure
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 7440-44-4	Activated Carbon — Not classified	≥90%

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable – single substance product (residual ash/mineral content from source raw material, not separately classified).

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Generally regarded as non-hazardous under normal conditions of use.

By inhalation:

Remove the person affected from the dusty area to fresh air. If irritation or coughing persists, seek medical advice.

By skin contact:

No action normally required. Wash with soap and water if desired for cleanliness.

By eye contact:

Rinse with plenty of water for a few minutes to remove particulate matter. If irritation persists, seek medical advice.

By ingestion/aspiration:

Not expected to require first aid; activated carbon is used medicinally as an oral adsorbent. Rinse mouth with water if desired.

4.2 Most important symptoms/effects, acute and delayed:

Mechanical irritation of eyes/respiratory tract from dust is possible. No significant acute or delayed systemic effects expected. See section 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Water spray/fog (preferred for smouldering carbon fires), carbon dioxide, dry chemical powder.
Unsuitable: High-pressure water/air jet directly onto dust/powder (may disperse a combustible dust cloud).

5.2 Specific hazards arising from the chemical:
Activated carbon is combustible and can smoulder/self-heat in bulk storage if contaminated with oxidisers or oils. Fine dust dispersed in air can form an explosible dust cloud in the presence of an ignition source (standard precaution for fine carbon powders). Combustion/smouldering produces carbon monoxide and carbon dioxide.

5.3 Special protective actions for fire-fighters:
Evacuate non-essential personnel. Wear self-contained breathing apparatus (risk of carbon monoxide) and full protective clothing. Apply water spray gently to avoid raising dust; do not use a high-pressure jet directly on powder.

Additional provisions:
Smouldering carbon may re-ignite; monitor and re-wet stored material after a fire. Contain fire-fighting water run-off.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Avoid generating dust clouds. Eliminate ignition sources nearby. Use PPE as per section 8. Ensure adequate ventilation and avoid entry into confined spaces without checking oxygen levels.
For emergency responders:
Wear antistatic clothing and dust/particulate respiratory protection. Avoid raising dust.

6.2 Environmental precautions:
Prevent large spills from entering drains or watercourses (may cause turbidity/discolouration, though material itself is low in aquatic toxicity).

6.3 Methods and materials for containment and cleaning up:
Sweep up carefully using non-sparking tools, or collect by vacuum fitted with appropriate dust filtration, avoiding dust generation. Place in a labelled container for reuse or disposal.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A. General precautions for safe use:
Avoid generating and accumulating dust. Minimise dust-cloud formation in the presence of ignition sources – **combustible dust precaution:** a cloud of fine activated-carbon dust dispersed in air can ignite and flash/explode in the presence of a spark, flame or other ignition source, as with any finely divided combustible carbon powder. Keep away from strong oxidising agents, which may promote self-heating.
B. Technical recommendations for the prevention of fires and explosions:
Use earthed/bonded equipment (conveyors, bins, bagging lines) to control static electricity when handling powder in bulk. Use explosion-proof electrical equipment in areas where dust clouds may form. Avoid contamination of stored carbon with oils, oxidisers or other combustible contaminants that could promote self-heating.
C. Technical recommendations on general occupational hygiene:
Wash hands after handling. Avoid unnecessary generation of airborne dust.
D. Technical recommendations to prevent environmental risks:
Avoid release of fine dust/fines to the environment; contain in covered transport/storage.

7.2 Conditions for safe storage, including any incompatibilities:
A. Specific storage requirements:

Storage Temp.	Ambient, dry conditions
Maximum time	No fixed shelf life; store away from moisture and contaminants

B. General conditions for storage:
Store in a cool, dry, well-ventilated area, segregated from strong oxidising agents (e.g. chlorine, peroxides, concentrated oxygen sources) which can cause self-heating/ignition on contact with activated carbon. In bulk storage (silos, bags in stacks), monitor for self-heating and ensure adequate ventilation/oxygen levels before confined-space entry.

7.3 Specific end use(s):
Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
Carbon black/activated carbon particulate is commonly referenced against general nuisance-dust occupational exposure limits under the Factories Act, 1948, as amended:

Identification	Occupational Exposure Limit Type	Value
Activated Carbon (as particulate not otherwise classified) CAS: 7440-44-4	Time Weighted average concentration (8 hrs)	10 mg/m³ (inhalable) / 3 mg/m³ (respirable), general guidance

8.2 Appropriate engineering controls:
Use local exhaust ventilation/dust extraction at bagging, transfer and screening points to control dust concentrations, in addition to PPE.

B. Respiratory protection:
Particulate filter mask (FFP2/FFP3) where dust exposure cannot be adequately controlled by ventilation.

C. Specific protection for the hands:
Protective gloves recommended to avoid soiling/mechanical abrasion.

D. Eye and face protection:
Safety glasses or dust goggles where dust is generated.

E. Bodily protection:
Standard industrial workwear; antistatic clothing recommended for bulk powder handling.

F. Additional emergency measures:
Eyewash station recommended in processing/bagging areas.

Environmental exposure controls:
Avoid environmental release of fine dust/fines; use covered handling and transport.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (granules, pellets or fine powder)
Appearance	Black, porous granules/powder
Color	Black

Odor	Odorless
Odour threshold	Not applicable
Volatility	
Boiling point at atmospheric pressure	Non-applicable (sublimes/decomposes >3500°C)
Vapour pressure at 20°C	Negligible
Evaporation rate at 20°C	Non-applicable
Product Description	
Bulk density	Typical value — refer to current specification sheet (grade dependent, ~0.25 – 0.55 g/cm³)
pH (aqueous slurry)	6 – 10 (grade dependent)
Solubility in water at 20°C	Insoluble
Melting point/freezing point	Non-applicable (does not melt; sublimes at very high temperature)
Flammability	
Flash Point	Non-applicable (solid)
Flammability (solid, gas)	Combustible solid; not classified as a GHS Flam. Sol. for the granular/standard commercial form
Autoignition temperature	Typical value — refer to current specification sheet (bulk material, grade dependent)
Lower / Upper flammability limit (dust cloud)	Combustible dust cloud limits apply – refer to current specification sheet
Particle Characteristics	
Median equivalent diameter	Grade dependent (granular, pelletised or powder forms available)

9.2 Other information:

Explosive properties	Not relevant as a bulk solid; combustible dust-cloud hazard applies in fine powder form – see section 10
Oxidising properties	Not relevant
Corrosive to metals	Non-corrosive
Heat of combustion	Typical value — refer to current specification sheet

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
Chemically inert under normal conditions. Can react vigorously (self-heat or ignite) in contact with strong oxidising agents (e.g. chlorine, liquid oxygen, concentrated peroxides). **A cloud of fine dust dispersed in air is combustible in the presence of an ignition source** – standard precaution applicable to any fine carbon powder.

10.2 Chemical stability:
Chemically stable under the indicated conditions of storage, handling and use when kept away from strong oxidisers and ignition sources.

10.3 Possibility of hazardous reactions:
Contact with strong oxidising agents may cause self-heating leading to ignition. Dust-cloud ignition is possible in the presence of a suitable ignition source and adequate dust concentration.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Avoid generating sparks near dust clouds	Avoid dust-cloud formation near ignition sources	Avoid contact with strong oxidisers which can cause self-heating	No special measures	No special measures

10.5 Incompatible materials:

Strong Oxidisers (chlorine, peroxides, liquid oxygen)	Open Flame / Sparks (fine dust)
Avoid contact – risk of self-heating/ignition	Avoid – combustible dust-cloud risk

10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide on combustion/smouldering.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:
Activated carbon is widely used as a medicinal oral adsorbent and is regarded as having very low acute and chronic toxicity; the principal hazard is mechanical/nuisance-dust irritation.

A. Ingestion (acute effect):
Practically non-toxic; used medicinally as a gastrointestinal adsorbent.

B. Inhalation (acute effect):
Dust may cause mechanical irritation of the respiratory tract; prolonged, high-level dust exposure should be avoided as a matter of general industrial hygiene (nuisance dust).

C. Contact with skin and eyes (acute effect):
Non-irritating; dust may cause mechanical irritation of the eyes.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):
Classification criteria are not met based on available data. IARC: Not classified.

E. Sensitizing effects:
Not known to be a skin or respiratory sensitiser.

F/G. Specific target organ toxicity (STOT):
Classification criteria are not met based on available data.

H. Aspiration hazard:
Classification criteria are not met based on available data (solid particulate).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Activated Carbon CAS: 7440-44-4	LD50 oral: >10000 mg/kg	Rat
	LD50 dermal: Not applicable (insoluble solid)	–

SECTION 12: ECOLOGICAL INFORMATION

Not classified as hazardous to the aquatic environment.

12.1 Toxicity:

Acute Toxicity	Species	Genus

LL/EL50 >100 mg/L (practically non-toxic; insoluble particulate)	Typical value — refer to current specification sheet	Fish / Crustacean
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12.2 Persistence and degradability:
Not biodegradable (elemental/amorphous carbon); physically and chemically inert in the environment.

12.3 Bioaccumulative potential:
Not bioaccumulative; insoluble particulate.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Non-applicable (insoluble solid adsorbent)	Non-applicable	Immobile	Immobile

12.5 Results of PBT and vPvB assessment:
Does not meet PBT/vPvB criteria.

12.6 Other adverse effects:
Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:
Dispose of as general industrial solid waste via an authorised waste contractor, in accordance with local regulations. Spent/used activated carbon that has adsorbed hazardous substances during use should be assessed and disposed of according to the hazard classification of the adsorbed material. Avoid generating dust during disposal handling.
Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Not assigned for standard commercial grades meeting ADR Special Provision 223 (not self-heating per test) – otherwise UN1362 (Class 4.2) for untested activated carbon of animal/vegetable origin
14.2 UN proper shipping name	Non-applicable / CARBON, ACTIVATED (if UN1362 applies)
14.3 Transport hazard class(es)	Non-applicable / 4.2 (if UN1362 applies)
14.4 Packing group	Non-applicable / III (if UN1362 applies)
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9; confirm self-heating test status for the specific grade supplied
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Not assigned for standard commercial grades meeting the IMDG exemption for tested, non-self-heating activated carbon – otherwise UN1362 (Class 4.2)
14.2 UN proper shipping name	Non-applicable / CARBON, ACTIVATED (if UN1362 applies)
14.3 Transport hazard class(es)	Non-applicable / 4.2 (if UN1362 applies)
14.4 Packing group	Non-applicable / III (if UN1362 applies)
14.5 Marine pollutant	No
14.6 Special precautions for user	Confirm self-heating test status for the specific grade supplied
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Not assigned for standard commercial grades meeting applicable exemption – otherwise UN1362 (Class 4.2)
14.2 UN proper shipping name	Non-applicable / CARBON, ACTIVATED (if UN1362 applies)
14.3 Transport hazard class(es)	Non-applicable / 4.2 (if UN1362 applies)
14.4 Packing group	Non-applicable / III (if UN1362 applies)
14.5 Environmental hazard	No
14.6 Special precautions for user	Confirm self-heating test status for the specific grade supplied
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:
It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product, with particular attention to combustible-dust and confined-space (oxygen depletion) precautions.
Other legislation:
Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:
This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:
Not classified – no hazard statements assigned. See section 2.3 and sections 7/10 for the standard combustible-dust precaution applicable to fine carbon powders.
The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:
Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product. Personnel handling bulk powder should additionally be made aware of combustible-dust and confined-space entry precautions.

Principal bibliographical sources:
The United Nations Economic Commission for Europe (UNECE); publicly available GHS classification and physical-constant references for CAS 7440-44-4.

Abbreviations and acronyms:
ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET