



DYNAMIC[®]

COCONUT SHELL ACTIVATED CARBON

Material Safety Data Sheet



1. Identification of the substance

Identification of the substance: Coconut shell activated carbon

Recommended restrictions: None known

Recommended use: Water Treatment Filter Media / Water filtration

COCO-800; Coconut shell-based activated carbon is a cheap and environmentally friendly material that can be used for energy storage. It is made from coconut shells, which are a renewable resource and waste material.

How it works?

Coconut shells are heated in a furnace and chemically activated using a substance like KOH or H₂SO₄. The activated carbon is compacted and tested for its specific capacitance and energy density. The activated carbon's electrochemical performance is determined by its surface area, pore distribution, and the electrolyte used.

Applications

Water purification: Coconut shell activated carbon can absorb impurities from drinking water.

Benefits

Renewable: Coconut shells are a renewable resource that are easy to obtain and store.

Environmentally friendly: Coconut shell activated carbon has a small carbon footprint.

High performance: Coconut shell activated carbon has a high iodine value and a well-developed pore structure.



2. Hazards Identification

2.1 GHS-US Classification

Eye Irritation	2B H320
STOT	SE 3 H335



Hazards not otherwise classified: Combustible dust. May form combustible dust concentrations in air. All powdered activated carbons are classified as weakly explosive (Dust explosion class St1): Given the necessary conditions of a strong ignition source, right concentrations of airborne carbon dust, adequate oxygen levels, and confinement, the potential for a deflagration event exists. A combustible dust hazard assessment and employee training should be carried out. See sections 7 and 9 for further information on combustible dust precautions.



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2.2 Label Elements

Hazard Pictograms

Signal word (GHS-US)

Hazard Statements

: Warning

: H320- Causes eye irritation

: H335- May cause respiratory irritation

Precautionary statements (GHS-US): P261- Avoid breathing dust

: P264- Wash thoroughly after handling

: P271- Use in well-ventilated area

: P280- Wear protective gloves/clothing/eye & face protect

: P304&340: IF INHALED: Remove person to fresh air

: P305&351&P338: If in eyes, Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

: P312- Call Poison Control Center/Doctor if you feel sick

: P403& P233- Store in well-ventilated place. Keep container tightly closed

: P405- Store locked up

: P501- Dispose of container to appropriate receptacle

2.3 Other Hazards

No additional information available

2.4 Unknown acute toxicity (GHS-US)

No data available



3. Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixture

Name	CAS #	%	GHS_US classification
Activated Carbon	7440-44-0	100	Not classified



4. First Aid Measures

4.1 Description of first aid measures

First aid after inhalation

Remove person to fresh air. If not breathing, administer CPR or artificial respiration. Get immediate medical attention.

First aid after skin contact

If skin reddening or irritation develops, seek medical attention

First aid after eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.

First aid after ingestion

If the material is swallowed, get immediate medical attention or advice.

DO NOT induce vomiting unless directed to do so by medical personnel.



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4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation
Symptoms/injuries after skin contact
Symptoms/injuries after eye contact
Symptoms/injuries after ingestion

May cause respiratory irritation
May cause skin irritation
Causes serious eye damage
May be harmful if swallowed

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available.



5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Unsuitable extinguishing media

If involved with fire, flood with plenty of water
None

5.2 Special hazards arising from substance or mixture

Fire hazard
Explosion hazard
Reactivity

None known
None known
Contact with strong oxidizers such as ozone, liquid oxygen, chlorine, etc. may result in fire.

5.3 Advice for firefighters

Protection during firefighting

Firefighters should



6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

General measures

Avoid contact with the skin and eyes

6.1.1 For non-emergency personnel

No additional information available

6.1.2 For emergency responders

No additional information available

6.2 Environmental precautions

None

6.3 Methods and material for containment and cleaning up

For containment If possible, stop flow of product

Methods for cleaning up Shovel or sweep up and put in closed container for disposal

6.4 Reference to other sections

No additional information available



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7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling

Avoid contact with eyes. Wet activated carbon removes oxygen from air causing severe hazard to workers inside carbon vessels or confined spaces

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Protect containers from physical damage. Store in dry, cool, well-ventilated area. Store away from strong oxidizers, strong acids, ignition sources, combustible materials, and heat. An adequate air gap between packages is recommended to reduce propagation in the case of fire.

Handling: A hazard assessment should be carried out. As with all finely divided materials, ground all transfer, blending, and dust collecting equipment to prevent static discharge. Remove all strong ignition sources from material handling, transfer, and processing areas where dust may be present or accumulate. Practice good housekeeping. Excessive accumulations of dust or dusty conditions can create the potential of secondary explosions. Inspection of hidden surfaces for dust accumulation should be made routinely. If possible, eliminate the pathways for dust to accumulate in hidden areas. Fine carbon dust may penetrate electrical equipment and cause electrical shorts. Where dusting is unavoidable, dust-proof boxes and regular electrical line maintenance are recommended. Refer to NFPA standards 654 for guidance.

Caution employees-no smoking in carbon storage and handling areas. Carbon is difficult to ignite, however, cutting and welding operations should be carried out using hot work permit systems where precautions are taken not to ignite carbon, which may smolder undetected.

7.3 Specific end use(s)

No additional information available



8: Exposure controls/ personal protection

8.1 Control parameters

No additional information available

8.2 Exposure controls

Appropriate engineering controls

: Local exhaust and general ventilation must be adequate to meet exposure standards

Hand Protection

: None required under normal product handling conditions

Eye Protection

: safety glasses

Skin and body protection

: Wear suitable working clothes

Respiratory protection

: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection



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9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Particulate
Color	: Black
Odor	: No data available
Odor threshold	: No data available
Ph	: No data available
Relative evaporation rate	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor density @ 20 deg C	: No data available
Relative Density	: 28-33 lb/ cubic foot
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

Combustible dust- These products may contain combustible dusts. May form combustible dust concentrations in air. All powdered activated carbons are weakly explosive. No specific information on these carbons are available.

Typical combustible dust data for a variety of activated carbons:

K_{st} values reported between 43-113 (various sources).

Dust explosion class St1 (K_{st} values < 200 are Class St1-weakly explosive).

MEC (minimum explosible concentration) in air 50 and 60 g/m³ (two reports)

Volatile content (by weight): < 8% ASTM D3175-11 (Watercarb)

MIT (minimum ignition temperature) values reported between 400-680°C (752-1256°F) (four reports)

Maximum Absolute Explosion pressure values reported between 6.0-8.6 bar (four reports)

9.2 Other information

No additional information available



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10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

Stable under normal conditions

10.3 Possibility of hazardous reactions

Will not occur

10.4 Conditions to avoid

None

10.5 Incompatible materials

Strong oxidizing and reducing agents such as ozone, liquid oxygen or chlorine.

10.6 Hazardous decomposition products

Carbon monoxide may be generated in the event of a fire.



11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity : Not classified

Carbon (7440-44-0)

LD50 oral rat : >10000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes eye irritation

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity : May cause respiratory irritation (single exposure)

Specific target organ toxicity : Not classified (repeated exposure)

Aspiration hazard : Not classified



12: Ecological Information

12.1 Toxicity

No additional information available

12.2 Persistence and degradability

No additional information available

12.3 Bioaccumulative potential

No additional information available

12.4 Mobility in soil

No additional information available

12.5 Other adverse effects

No additional information available



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13: Disposal concerns

13.1 Waste treatment methods

Waste Disposal recommendations

: Dispose of contents/container in accordance with local/ regional/international regulations



14: Transportation information

In accordance with DOT/ADR/RID/ADNR/IMDG/ICAO/IATA

14.1 UN Number

Not applicable. See Note 1 below.

14.2 UN proper shipping name

Not applicable

Note 1: Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, This product has been tested according to the United Nations Transport of Dangerous Goods test protocol for a "self-heating substance" (United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self Heating Substances) and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material. This information is applicable only for the Activated Carbon Product identified in this document.



15: Regulatory information

15.1 US Federal regulations

Carbon (7440-44-0)

Listed on the United States TSCA inventory

15.3 US State regulations

No additional information available



16: Other information

Full text of H-phrases:

Eye Irrit. 2B

STOT SE 3

H335

Serious eye damage/eye irritation Category 2B

Specific target organ toxicity (single exposure) Category 3

May cause respiratory irritation

NFPA[®]





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NFPA health hazard	: 1-Exposure could cause irritation but only minor residual injury even if no treatment is given
NFPA fire hazard	: 1- Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur (e.g. mineral oil). Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F)
NFPA reactivity	: 0- Normally stable, even under fire exposure conditions, and are not reactive with water

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