

SAFETY DATA SHEET



SECTION 1 : PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Steam Processed Coconut Shell Activated Carbon
HS CODE* : 3802.10
CAS NO.* : 7440-44-0
MANUFACTURE CODE : Activated carbon
CHEMICAL FAMILY : Carbon Group
CHEMICAL FORMULA : C
APPLICATION : Adsorption of Organic and inorganic materials in Solid, Liquid and Gas phase.
COMPANY IDENTIFICATION : Haycarb PLC 400, Deans Road, Colombo-10, Sri Lanka, POSTAL CODE: 01000
CONTACT DETAILS : TEL: +94 112 687565, FAX: +94 112 699630
VERSION : XVI

(HS CODE* - Harmonized System Code, CAS No.* - Chemical Abstracts Service Registry Number)

SECTION 2 : HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE : **GHS-US classification**
 Combustible Dust H232
 Not classified as a simple asphyxiate. Product does not displace oxygen in the ambient atmosphere, but slowly adsorbs oxygen from a confined space when wet. Under conditions of anticipated and recommended use, product does not pose an asphyxiation hazard.

HAZARD/CATEGORY : Eye Irritation 2B - Causes eye irritation
 Respiratory Irritation Category 3-Dust causes respiratory, skin and eye irritation.
 Aquatic Chronic 4 - May cause long lasting harmful effects to aquatic life
 : Prolonged or repeated inhalation or ingestion can cause irritation of mucous membranes.
 Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space.

PRECAUTIONARY STATEMENTS

PREVENTION: Avoid generation of dust during handling.
 The dust or fines may be more susceptible to catalytic reaction than the large mesh product.
 Avoid breathing dust.
 Wash thoroughly after handling.
 Use in a well ventilated area.
 Avoid release to environment.

RESPONSE IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention for any breathing difficulty.
 IF IN EYES: Rinse cautiously with water for several minutes. Seek medical attention if irritation persists
 CONTACT WITH SKIN: Remove contaminated clothing. Rinse cautiously with soap and water for several minutes. Seek medical attention if irritation persists.
 IF INGESTED: Drink a large volume of water; seek medical attention.
 STORAGE: Store in a well-ventilated place.
 Keep container tightly closed.

OTHER HAZARDS Dust may be slightly irritating to eyes and respiratory tract.
 Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space.
 Under certain conditions, carbon dust/air mixtures can produce an explosive atmosphere.
 High concentrations of contaminants in the gas stream can cause a considerable amount of adsorption heat, which may result in spontaneous carbon bed fires or hot spots.

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

Common name	Chemical Identity (%) by weight)	CAS No
Activated carbon (Steam processed coconut shell based)	Less than or equal 100	7440-44-0

SAFETY DATA SHEET



SECTION 4 : FIRST AID MEASURES

ROUTES OF ENTRY

- Inhalation** : Dust may be inhaled and may cause mild irritation to the upper respiratory tract.
- Ingestion** : Dust may cause mild irritation to digestive track resulting in nausea or diarrhea
- Skin Contact** : Dust may cause mild irritation
- Eye Contact** : Dust may cause mild irritation

EMERGENCY AND FIRST AID

- Inhalation** : Expose to fresh air. Get medical attention for any breathing difficulty.
- Ingestion** : Give water to drink to dilute. If large quantities were swallowed, get medical attention immediately.
- Skin Contact** : Wash exposed area with soap and water. Seek medical attention if irritation develops.
- Eye Contact** : Immediately flush eyes with gentle but large stream of water for at least 15 min lifting lower and upper eye lids occasionally. Call a physician if irritation persists.

- HEALTH HAZARD ACUTE AND CHRONIC** : Inhalation (dust may be inhaled) , dust may cause mild irritation to the upper respiratory
 In case of skin contact dust may cause mild irritation
 In case of eye contact dust may cause irritation

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

- : People with pre-existing skin conditions, eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION 5 : FIRE FIGHTING MEASURES

- EXTINGUISHING MEDIA** : Water, carbon dioxide, nitrogen, dry chemical extinguishing agents, sand and foam. Avoid methods which may stir up dust clouds.

- PREVENTION** : Keep away from sources of heat or naked flames.

- SPECIAL FIRE FIGHTING PROCEDURE** : Activated carbon is difficult to ignite and tends to burn slowly (smolder) without producing smoke or flame. Carbon monoxide and carbon dioxide gas may be emitted upon combustion of material.

- PROTECTIVE EQUIPMENT** : In the event of fire, wear full protective clothing and NIOSH approved self contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Wet carbons adsorb oxygen, therefore do not enter closed vessels without using a self-contained breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

- EMERGENCY PROCEDURE** : Evacuate area. Eliminate all ignition sources if safe to do so. Ventilate the area with fresh air. Observe precautions from other sections.

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in section 8. Use non-sparking tools and equipment. Reduce airborne dust to prevent scattering by moistening with water.

- PROPER METHOD OF CONTAMINENT AND CLEAN UP** : Pick up spill for recovery or disposal and place in a closed container. Carbon is not soluble, but can cause a particulate emission if discharged to waterways.

Spills: Clean up spills in a manner that does not disperse dust into the air.

Warning! Spent carbon may have absorbed hazardous materials.

SECTION 7 : HANDLING & STORAGE

- SAFE HANDLING** : Minimize spills, generation of airborne dust and accumulation of dusts on exposed surfaces. Adequate exhaust ventilation to be used to draw dust from working environment.
 Use appropriate respirators, gloves and eye protection to prevent or minimize exposures to dust.

- CONDITIONS FOR SAFE STORAGE** : Store in cool, dry, ventilated and covered place in original packaging. Partially used packages need to be stored in air tight closed containers. Keep away from oxidizers, heat or flames. Store away from ignition sources.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

- | | | |
|--|--------------------------------|-----------------------|
| OSHA PEL (Occupational Safety and Health Association - Permissible exposure Limit) : | Less than 5 mg/m ³ | (Respirable Fraction) |
| | Less than 15 mg/m ³ | (Total Dust) |

Exposure Guidelines

Keep in airtight packing to prevent pickup of odors and moisture from air. Wet activated carbon depletes oxygen from the air and therefore dangerously low levels of oxygen may be encountered in confined spaces.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

SAFETY DATA SHEET



Personal Respirators (NIOSH* Approved) :

For conditions of use where exposure to the dust or mist is apparent, Use NIOSH/OSHA* approved respirator for Phosphoric acid and dust/mist (non-toxic particles). Select the suitable respirator based on exposure limits. For emergencies or instances where the exposure levels are not known, use a full-face positive pressure, air-supplied respirator.

Hand protection :

Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier

Skin Protection :

Wear protective gloves and clean body-covering clothing. For personal hygiene purposes, use adequate clothing to prevent skin contact including boots, gloves, lab coat, apron or overalls as appropriate.

Eye Protection :

Use safety glasses/goggles when working with activated carbon. Contact lenses should not be worn. Install eyewash fountain and quick-drench facilities in work area.

(NIOSH* - National Institute for Occupational Safety and Health/ OSHA* - Occupational Safety and Health Association)

SECTION 9 : PHYSICAL AND CHEMICAL CHARACTERISTICS

PHYSICAL STATE	: Solid
APPEARANCE AND ODOUR	: Black granules or powder ,odorless.
ODOR THRESHOLD	: Not applicable
pH VALUE	: 6 - 11
MOLECULAR WEIGHT	: Not applicable
BOILING POINT	: Not applicable
VAPOUR PRESSURE	: Not applicable
SOLUBILITY IN WATER	: Insoluble
PARTICLE DENSITY	: Nominal 0.82 g/cc
BULK DENSITY	: 0.30 - 0.64 g/cc
MELTING POINT	: Not applicable
FREEZING POINT	: Not applicable
EVAPORATION RATE	: Not applicable
FLASH POINT	: Not applicable
PARTITION COEFFICIENT	: Not applicable
AUTO IGNITION TEMP.	: Above 350 °C
DECOMPOSITION TEMP.	: Not applicable
FLAMMABILITY (SOLID, GAS)	: Above 220 °C
RELATIVE VAPOR DENSITY AT 20 ° C	: Not applicable
VISCOSITY	: Not applicable
Log Pow	: Not applicable
Log Kow	: Not applicable
Explosive properties	: Not applicable
Oxidizing properties	: Not applicable
Explosive Limits	: Not applicable

SECTION 10 : STABILITY AND REACTIVITY

CHEMICAL STABILITY	: Stable under ordinary conditions of use and storage.
CONDITIONS TO AVOID	: Moisture and contact with oxidizing substances or ignition sources.
INCOMPATIBILITY (MATERIALS TO AVOID)	Strong oxidizing chemicals such as ozone, liquid oxygen, chlorine, permanganate, strong acids etc. and hydrocarbons.
HAZARDOUS DECOMPOSITION PRODUCT/BY-PRODUCT	: On burning carbon dioxide, carbon monoxide.
HAZARDOUS POLYMERIZATION	: Will not occur

SECTION 11 : TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

Toxicity Studies

Oral LD50*	Not determined on the finished product
Dermal LD50*	Not determined on the finished product

SAFETY DATA SHEET



Silica Crystalline, Quarts (14808-60-7)

IARC group : 1 - Carcinogenic to humans

The International Agency for Research on Cancer (IARC) has classified "silica dust, crystalline, in the form of quartz or cristobalite" as carcinogenic to humans (group 1). However these warnings refer to crystalline silica dusts and do not apply to solid activated carbon containing crystalline silica as a naturally occurring, bound impurity. As such, we have not classified this product as a carcinogen in accordance with the US OSHA Hazard Communication Standard (29 CFR §1910.1200) but recommend that users avoid inhalation of product in a dust form.

Inhalation	Section (4)
Ingestion	Section (4)
Eye Irritation	Section (4)
Skin Irritation	Section (4)
Sensitization	Not determined on the finished product
Target organ(s) or System	Eyes, skin and upper respiratory system
Signs and Symptoms of Exposure	Irritation and redness of eyes, irritation of skin and respiratory system may result from exposure to carbon dust.
Chronic Effects	

WARNING: This product contains or not may contain trace quantities of a substance(s) known to the state of California to cause cancer, birth defects, or other reproductive harm.

(LD50* - Lethal Dose expected to kill 50% of a group of test animals)

SECTION 12 : ECOLOGICAL INFORMATION

Eco toxicity	See section (11)
Persistence/degradability	Not determined on the finished product.
Bioaccumulations/Accumulation	Not determined on the finished product.
Mobility in Environmental Media	Not determined on the finished product.
Other adverse effects	Not determined on the finished product.

SECTION 13 : DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

Waste treatment and disposal methods : Vacuum or shovel material into a closed container. Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

Additional information : Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbate. Consult U.S. EPA guidelines listed in 40 CFR 261.3 for more information on hazardous waste disposal.

SECTION 14 : TRANSPORT INFORMATION

<u>In accordance with DOT</u>	: Not classified as hazardous for domestic land transport
UN-No.(DOT)	: None on finished product
DOT NA no.	: None on finished product
Proper Shipping Name (DOT)	: Not regulated
Department of Transportation(DOT)Hazard Classes	: None on finished product
Hazard labels (DOT)	: None on finished product
Packing group (DOT)	: None on finished product
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: None on finished product
<u>Transport by sea</u>	: Not classified as hazardous for water transport
IMO / IMDG	
UN/NA Identification Number	: None on finished product
UN- Proper Shipping Name	: Not regulated
Transport Hazard Class	: None on finished product

SAFETY DATA SHEET



Air transport : Not classified as hazardous for air transport
 ICAO / IATA
 UN/NA No : None on finished product
 UN- Proper Shipping Name : Not regulated
 Transport Hazard Class : None on finished product
 Packing Group : None on finished product
 Marine Pollutant : None on finished product

Additional Information

Further more the provisions of the International Maritime Dangerous Goods Code (IMDG Code) under the category Carbon, Activated of UN number classification 1362 IMDG code class 4.2 (2004 Edition) do not apply to Activated Carbon produced via the Steam Activation Process, by the exemption provided under special provision 925 of the IMDG 2004 Edition code book. It is excluded from IATA#395, IMCO class 4.2 or UN 1362. Please see Section 16 for more details.

(DOT* - Department of Transportation, UN NO* - United Nations Hazardous substance No, IMCO * - Intergovernmental Maritime Consultative Organization, IATA* - International Air Transportation Association, IMDG* - International Maritime Dangerous Goods)

SECTION 15 : REGULATORY INFORMATION

US FEDERAL REGULATIONS

- **Activated Carbon Profile 1** : All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt
 - **Cobalt (7440-48-4)** : Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313

INTERNATIONAL REGULATIONS

No additional information available

US STATE REGULATIONS

California Proposition 65

WARNING: This product contains, or may not contain, trace quantities of a substance(s) known to the state of California to cause cancer, birth defects, or other reproductive harm.

	Silica: Crystalline, quartz (14808-60-7)	Cobalt (7440-48-4)	Titanium dioxide (13463-67-7)
U.S. - California - Proposition 65 - Carcinogens List	YES	YES	YES
U.S. - California - Proposition 65 - Developmental Toxicity	NO	NO	NO
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	NO	NO	NO
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	NO	NO	NO
No significance risk level (NSRL)	NA	NA	NA

Aluminum oxide (1344-28-1)

U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Massachusetts - Right to Know List
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Calcium sulfate (7778-18-9)

U.S. - Massachusetts - Right to Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List

Silica: Crystalline, quartz (14808-60-7)

U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) List
 U.S. - Massachusetts - Right to Know List

(SARA* - Superfund Amendments and reauthorization Act, TSCA* - Toxic Substances Control Act, OSHA* - Occupational Safety and Health Association, CERCLA* - Comprehensive Environmental Response, Compensation and Liability Act, RCRA* - Resource Conservation and Recovery Act., DSL* - Domestic Substance s List, WHMIS* - Workplace Hazardous Material Information System)

SAFETY DATA SHEET



SECTION 16

: OTHER INFORMATION

Do not enter vessels containing wet Activated Carbon before checking oxygen level. Vessels with limited ventilation may be low in oxygen due to the adsorbing characteristics of Activated Carbon. If necessary, use a NIOSH-approved self-contained breathing apparatus.

Dangerous goods regulation-

Steam activated carbon (HS CODE 3802.10) is not classified as dangerous good as per UN No 1362, IMCO Class or division 4.2, Packing group III, Special provisions 925 IMDG code

Special Provision 925 - The provisions of this Code do not apply to:

- carbons made by a steam activation process.
- a consignment of carbon if it passes the tests for self-heating substances as reflected in the UN Manual of Tests and Criteria (see 33.3.1.3.3), and is accompanied by a certificate from a laboratory accredited by the competent authority, stating that the product to be loaded has been correctly sampled by trained staff from that laboratory and that the sample was correctly tested and has passed the test

HMIS III RATING

Health : 0
Flammability : 1
Physical : 0
Personal Protection :

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

Haycarb SDS complies with OSHA GHS 1910.1200 Hazard communication Regulation

EMPLOYERS SHOULD USE THIS INFORMATION ONLY AS A SUPPLEMENT TO OTHER INFORMATION GATHERED BY THEM AND SHOULD MAKE INDEPENDENT JUDGMENT OF SUITABILITY OF THIS INFORMATION TO ENSURE PROPER USE AND PROTECT THE HEALTH AND SAFETY OF EMPLOYEES. THIS INFORMATION IS FURNISHED WITHOUT WARRANTY AND ANY USE OF THE PRODUCT NOT IN CONFORMANCE WITH THIS MATERIAL SAFETY DATA SHEET OR IN COMBINATION WITH ANY OTHER PRODUCT OR PROCESS, IS THE RESPONSIBILITY OF THE USER.

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