



MATERIAL SAFETY DATA SHEET

Power PAC™

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| 1. Product and Company Identification | |
| Supplier ADA Carbon Solutions, LLC 8100 SouthPark Way, Unit A-2 Littleton, CO 80120-4527 Telephone Number: 888-843-8416 FAX Number: 303-962-1970 | Manufacturer ADA Carbon Solutions, LLC 8100 SouthPark Way, Unit A-2 Littleton, CO 80120-4527 Telephone Number: 888-843-8416 FAX Number: 303-962-1970 |
| Supplier Emergency Contacts & Phone Number CHEMTREC: 800-424-9300 | Manufacturer Emergency Contacts & Phone Number CHEMTREC: 800-424-9300 |
| Issue Date: 04/03/2009 Product Name: Power PAC™ CAS Number: N/A Product/Material Uses Powdered carbon sorbent of vapor-phase mercury in flue gas, primarily in coal-fired power plants. | |

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|---|------------|--|-------------------------|
| 2. Composition/Information On Ingredients | | | |
| Ingredient Name | CAS Number | | Percent of Total Weight |
| Carbon, activated | 7440-44-0 | | 0-100 |
| This product contains no hazardous ingredients when evaluated by criteria established in the OSHA Hazard Communication Standard (29 CFR 1910.1200). | | | |

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| EMERGENCY OVERVIEW | |
| Warning: Wet activated carbon removes oxygen from air and can lower the concentration of oxygen inside vessels and other confined spaces. During combustion, toxic and irritating gases including high levels of carbon monoxide may be produced. | |

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| 3. Hazards Identification |
| Primary Routes of Entry Inhalation, skin contact, eye contact |
| Eye Hazards Dust may cause mild mechanical irritation. |
| Skin Hazards Prolonged or repeated skin contact may cause irritation, drying, and redness. |
| Ingestion Hazards May cause mild gastrointestinal tract irritation. |
| Inhalation Hazards High airborne concentrations of low-toxicity dusts may cause coughing, sneezing, and mild temporary irritation. Avoid use in confined spaces. Wet activated carbon can absorb and deplete oxygen from the air, causing a severe hazard to workers. |
| Chronic/Carcinogenicity Effects Activated carbons may contain crystalline silica, which is classified as a potential human carcinogen. Prolonged inhalation of excessive dust may cause pulmonary disorders. |



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4. First Aid Measures

Eye

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

Skin

Wash affect areas with soap and water. Get medical attention immediately if irritation develops.

Ingestion

If person is fully conscious, give one or two cups of water or milk to drink. Get medical attention immediately if large quantities are ingested.

Inhalation

Remove person from source of exposure and into fresh air. Get medical attention if irritation or breathing difficulties develop.

5. Fire-Fighting Measures

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

Fire and Explosion Hazards

High dust concentrations may form explosive mixtures with air, which can be ignited by spark or flame. Dusts may accumulate a static discharge. Explosibility: Class St1 (Kst = 105 bar m/s).

Fire is possible at elevated temperatures or by self-heating when exposed to strong oxidizers. Activated carbon tends to burn slowly without producing smoke or flame. Material allowed to smolder for long periods in enclosed spaces may produce carbon monoxide, which may reach a lower explosive limit for carbon monoxide (12.5%) in air. Wet activated carbon depletes oxygen from the air. May form halogens when involved in a fire.

Warning: Electrostatic precipitator and baghouse hoppers containing powdered activated carbon or fly ash with activated carbon can autoignite and present a smoldering fire hazard when exposed to elevated temperature and other sources of heat, such as heaters. If activated carbon is present, hoppers should be emptied frequently and particular care should be exercised when hopper heaters are in use. Cutting or welding operations should not be used near this material due to potential for smoldering combustion. This material is not a self-heating material as classified for transportation.

Extinguishing Media

In case of fire, use water spray, dry chemical, or CO₂. Use water to cool fire-exposed containers.

Fire-Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear. Remove product from building to a non-hazardous area, preferably outdoors, if safe to do so.

6. Accidental Release Measures

Provide maximum dilution or explosion-proof exhaust ventilation. Avoid generating dust. Pick up released product with appropriate implements and return to original container if reusable, or dispose.



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7. Handling and Storage

Handling Precautions

Follow good handling and housekeeping practices. Avoid spills and accumulations of dust, or generation of airborne dust. Do not enter places where bulk material is used or stored until adequately ventilated to prevent asphyxiation.

As with all finely divided materials, precautions should be taken to avoid inhalation and eye contact. Ground all transfer, blending, and dust collecting equipment to prevent static discharge in accordance with NFPA 70, National Electric Code, NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas," NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, and OSHA Combustible Dust standards. Remove all ignition sources from material handling, transfer, and processing areas where dust may be present.

If activated carbon is present, hoppers should be emptied frequently and particular care should be exercised when hopper heaters are in use. Cutting or welding operations should not be used near this material.

Storage Precautions

Store in sealed containers in a clean cool, dry, well-ventilated area away from strong oxidizers, ignition sources, combustible materials, and heat. Do not store near, or allow contact with, moisture or strong oxidizers.

Warning: Wet activated carbon depletes oxygen, creating oxygen-deficient atmospheres in confined spaces.

Work/Hygienic Practices

Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Engineering Controls

Use with adequate general and local exhaust ventilation to prevent excessive airborne dust concentrations. Local exhaust ventilation should be provided, to maintain exposures below recommended occupational exposure limits. Confined spaces where activated carbon is present should be well ventilated and monitored for oxygen content.

Eye/Face Protection

Safety glasses with side shields are recommended as minimum industrial eye protection when handling bulk product or performing spill cleanup.

Skin Protection

Protective gloves are recommended to minimize skin contact. Use a lab coat or disposable coveralls to prevent excessive contamination to personal clothing.

Respiratory Protection

In case of inadequate ventilation to control dust, use NOISH-approved respirator for particulates (e.g., N95). Supplied air respirators may be needed for entering confined spaces where product is stored or handled to protect against oxygen deficiency.

Ingredients – Exposure Limits

Carbon, activated.

OSHA PEL-TWA: 15 mg/m³, total dust, as particulates not otherwise specified

OSHA PEL-TWA: 5 mg/m³, respirable dust, as particulates not otherwise specified



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9. Physical and Chemical Properties

Appearance

Grey to black, free-flowing powder

Odor

Odorless

Chemical Type: Mixture

Physical State: Solid

Specific Gravity: > 1*

Packing Density: 0.5 to 0.65

Vapor Pressure: N/A

Solubility: Slightly soluble

Evaporation Rate: N/A

* - Skeletal density (true density without pores)

10. Stability and Reactivity

Stability: Stable under ordinary conditions of shipment, storage, and use.

Hazardous Polymerization: Will not occur.

Incompatible Materials

Avoid contact with strong oxidizing agents such as ozone, liquid oxygen, chlorine, permanganate, sulfuric acid, and nitric acid.

Hazardous Decomposition Products

Thermal decomposition ("burning") may produce irritating and toxic fumes of carbon (carbon dioxide, carbon monoxide), formaldehyde, ethylene, and acrylic acid. The exact chemicals formed depend on many factors including temperature and heating rate.

11. Toxicological Information

Chronic/Carcinogenicity

The product is not listed as potentially carcinogenic by NTP, IARC, OSHA, or ACGIH.

May contain trace concentrations of bound silica. Crystalline silica is considered to be a probable human carcinogen.

Ingredients – Toxicological Data

Carbon, activated.

LC50 (inhal, rat): > 64,400 mg/m³

LD50 (oral, rat): > 10,000 mg/kg

12. Ecological Information

Ecotoxicological Information

No information available for the product. However, ecotoxicity is expected to be minimal.

This material will increase the conductivity of water by increasing dissolved solids. Used activated carbon may exhibit characteristics of the absorbed material.

Environmental Fate Information

No information available.



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13. Disposal Considerations

Dispose in accordance with applicable federal, state, and local government regulations.

When used for mercury sorption in most combustion flue gas, and mixed with combustion residues such as fly ash, the spent product is typically non-hazardous. Spent granular activated carbon may be recyclable, although in special situations the spent material could be a hazardous waste. Dispose of material in approved landfill. Avoid dispersal of spilled material and runoff into soil waterways, drains, and sewers.

14. Transport Information

Additional Shipping Paper Description

Shipping name: Activated Carbon.

This product is NOT considered spontaneously combustible under the "Self-Heating Test for Carbon" protocol listed in the United Nations Manual of Tests and Criteria [33.3.1].

15. Regulatory Information

U.S. Regulatory Information

Toxic Substance Control Act (TSCA): All ingredients of the product are listed on the TSCA 8(b) Chemical Substance Inventory or are exempt.

Product is not classifiable under any of the five SARA Title III hazard ratings.

Product does not have a CERCLA RQ.

SARA Section 313 Notification

This product does not contain any ingredients regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

Canadian Regulatory Information

Product is not regulated or controlled under WHMIS (Canada). This product is not classifiable as hazardous under the Canadian Hazardous Products Act (HPA).

DSL: 6798

16. Other Information

NFPA Rating

Health: 1

Fire: 1

Reactivity: 0

HMIS Rating

Health: 0

Fire: 0

Reactivity: 0

Personal Protection: B



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Disclaimer

This information relates to the product designated herein and does not relate to its use in combination with any other material or in any other process. To the best of ADA Carbon Solutions' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability, and completeness are not guaranteed. Users are responsible to verify this data for their own particular use and they assume all risks of their reliance upon information contained herein. ADA Carbon Solutions, LLC, shall under no circumstances be liable for incidental or consequential damages as a result of reliance upon information contained herein.

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