# **SAFETY DATA SHEET AvCarb**<sup>TM</sup> **Gas Diffusion Substrates**

# Section 1: IDENTIFICATION OF THE SUBSTANCE/PREPPARATION AND COMPANY

**Product Name:** AvCarb<sup>TM</sup> Carbon Fiber

**Chemical Formula:** Mixture

Synonyms: GDL, Gas Diffusion Layer/Material

**Part No.:** P50, P75, EP40

Manufacturer: Ballard Material Products

**Applications:** Fuel Cell Material

## **Section 2:** COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NO.	CONTENTS	EPA RQ	TPQ
Carbon	7440-44-0	>99%	N/A	N/A

# **Section 3:** HAZARDS IDENTICATION

This product is not classified as hazardous under the current CHIP regulations

#### **EMERGENCY OVERVIEW:**

Black carbonized substrate with no odour

WARNING! Wear self-contained breathing apparatus when fighting fires in confined locations. In the event of fire, use water spray, alcohol resistant foam,

dry chemical, or carbon dioxide (CO<sub>2</sub>)

INHALATION: Inhalation of dust may occur during material handling operations. Breathing

dust may cause mild respiratory irritation and/or difficulty in breathing.

**INGESTION:** No adverse effects expected. May cause mild irritation to the gastrointestinal

tract.

**SKIN:** Not expected to be a health hazard due to skin exposure. May cause mild skin

irritation and redness.

**EYES:** May cause eye mild irritation, including watering and redness.

**CHRONIC EFFECTS:** May cause skin irritation. Prolonged inhalation of excessive dust may produce

pulmonary disorders.

CARCINOGENICITY: IARC: Not ListedNTP: Not Listed OSHA: Not Regulated

**ROUTES OF ENTRY:** Inhalation (breathing). Eye and skin contact.

MEDICAL INFORMATION: Medical conditions aggravated: Allergies, eczema, and skin conditions.

### **Section 4:** FIRST AID MEASURES

**INHALATION:** Move the exposed person to fresh air at. Provide fresh air, warmth and rest,

preferably in a comfortable upright sitting position. Get medical attention if any

discomfort continues.

**INGESTION:** Give water to drink to dilute. If large amounts of dust are swallowed seek

medical attention

**SKIN:** Not expected to require first aid measures. Wash affected areas with large

amounts of running water and soap, if available for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical advice if irritation develops.

Wash contaminated clothing and shoes before reuse.

**EYES:** Immediately rinse eyes with running water. Remove any contact lenses and

continue flushing with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water. Get

medical attention if any discomfort continues.

### **Section 5:** FIRE FIGHTING MEASURES

FLASH POINT: Not Determined METHOD: N/A

EXTINGUISHER MEDIA: Fire can be extinguished using: water spray, fog, or mist; alcohol resistant foam,

dry chemical, or carbon dioxide (CO<sub>2</sub>).

PROTECTIVE MEASURES IN CASE OF FIRE:

As in any fire, wear NIOSH approved, positive pressure, self-contained

breathing apparatus, and full protective gear.

## **Section 6:** ACCIDENTAL RELEASE MEASURES

Based on the material physical properties, accidental releases are not expected. Pick up material in such a manner that does not generate dust. Use PPE identified in Section 8 and review Fire Fighting Measures before proceeding with clean up. Warning! Material may absorb hazardous materials.

### **Section 7:** HANDLING AND STORAGE

**USAGE PRECAUTIONS:** Wear appropriate protective equipment (See Section 8). Wash thoroughly

after handling material.

STORAGE PRECAUSTIONS: Store in a cool, dry ventilated area. Protect against physical damage. Keep

away from moisture and oxidizers.

# Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### PROTECTIVE EQUIPMENT:







# Section 8 continued: Exposure controls and Personal Protection

#### AIRBORNE EXPOSURE LIMITS

**OSHA Permissible Exposure Limits (PEL):** 

Carbon ó total particulate 15 mg/m<sup>3</sup> (TWA), respirable fraction - 5 mg/m<sup>3</sup> (TWA)

**ACGIH Threshold Limit Value (TLV)** 

Graphite - (all forms except graphite fibers) ó 2 mg/m³ (TWA)

**ENGINEERING CONTROLS:** 

Use engineering controls to minimize generation of airborne particulate during

material handling and processing operations.

**VENTILATION:** Provide adequate general and local exhaust ventilation to keep employee

exposures below the airborne exposure limits. Local ventilation is preferred since it can control emissions at the source, preventing dispersion into the

general work area.

**RESPIRATORS:** In conditions where high concentrations of airborne material are present

(inadequate ventilation), wear a respirator that has been selected by a technically qualified person for the specific work conditions. For emergencies, use a full-

face positive pressure, supplied air respirator.

**SKIN PROTECTION:** Wear rubber gloves (natural, latex) and clean body-covering clothing.

**EYE PROTECTION:** Wear approved safety glasses or safety goggles.

PROTECTIVE CLOTHING:

Wear appropriate gloves and long sleeved clothing when working with this

material.

HYGIENIC WORK PRACTICES:

Wash at the end of each work shift and before eating, smoking, or using the

lavatory. Launder clothing separate from other clothing.

## **Section 9:** Physical and Chemical Properties

Thin black substrate **APPEARANCE:** COLOR: Black **ODOUR/TASTE:** Odourless % VOLATILE: 0% **SOLUBILITY:** Insoluble in water or organic Solvents FLASH POINT: N/A **SPECIFIC GRAVITY:** Not Determined VAPOR PRESSURE: N/A **BURNING RATE:** Not Determined VAPOR DENSITY: N/A

 MELTING POINT:
 3,550C (6,422F)
 BOILING POINT:
 Sublimes

 UEL:
 N/A
 LEL:
 N/A

### **Section 10:** STABILITY AND REACTIVITY

**STABILITY:** Stable Under ordinary conditions of storage and use.

**CONDITIONS TO AVOIS:** Moisture and incompatibles.

**INCOMPATIBLEIES:** Strong Oxidizers such as ozone, chlorine, permanganate may result in rapid

combustion. Avoid contact with strong acids.

**HAZARDOUS DECOMPOSITION PRODUCTS:** 

Involvement in a fire causes electrically conductive airborne particulate,

carbon monoxide, carbon dioxide.

# Section 11: TOXICOLOGIAL INFORMATION

Ingredient	NTP Carcinogen		IARC	
Identification	Known	Anticipated	Category	
Carbon (7440-44-0)	No	No	None	

### **Section 12:** ECOLOGICAL INFORMATION

**ENVIRONMENTAL HAZARDS:** Not regulated as dangerous for the environment

### **Section 13:** DISPOSAL CONSIDERATIONS

**DISPOSAL METHODS:** Processing, use, or contamination of this product may change the waste

management options. Dispose of in accordance with federal, state, and local requirements (state and local disposal regulations may differ from federal

disposal regulations).

# **Section 14:** Transportation information

#### PROPER SHIPPING DESCRIPTION:

Not Regulated

U.S. DOT, UN/NA NO.:

CANADIAN TRANSPORT:

TDGR CLASS:

TDGR LABEL:

Not Regulated

Not Regulated

Not Regulated

### **Section 15:** REGULATORY INFORMATION

#### Federal State & International Regulations, Part 1

	SARA 302		SARA 313	
	RQ	TPQ	List	Chem Catg
Carbon (7440-44-0)	No	No	No	No

#### Federal State & International Regulations, Part 2

	CERCLA	RCRA 261.33	TSCA 8(d), 12(b)
Carbon (7440-44-0)	No	No	No

#### **Chemical Inventory Status - Canada**

	DSL	NDSL
Carbon (7440-44-0)	Yes	No

#### WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR), and the MSDS contains all of the information required by the CPR.

### **Section 16:** OTHER INFORMATION

### HAZARDOUS MATERIALS INFORMATION SYSTEM RATINGS:

HEALTH 1 FLAMMABILITY 0 REACTIVITY 0

**LABEL PRECAUTIONS:** Avoid contact with eyes, skin, and clothing.

Avoid breathing dust.

Use with adequate ventilation. Wash thoroughly after handling.

**LABEL FIRST AID:** If airborne dust is inhaled, remove to fresh air. Seek medical attention for any

breathing difficulty.

#### **DISCLAIMER:**

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**Ballard Material Products**