

Cover Sheet

 **micromeritics**[®]
 INSTRUMENT CORPORATION
 4356 COMMUNICATIONS DR.
 NORCROSS, GA 30093-1877 U.S.A.

MSDS
REF. MAT'L CARBON-D SA

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B	Revision	MD	04/22/03	JM	030250	HR SIG	J. Mocny
A	New MSDS received from supplier	CJB	03/20/01	JP	010138	QA SIG	L. Armstrong
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REV	REVISION DESCRIPTION	BY	DATE	CHK	REL. NO.		

SIZE	NUMBER	PAGE
A	004/16833/00MSDS	X of 5

Micromeritics Material Safety Data Sheet

Title : REF. MAT'L CARBON-D SA
Date of Preparation : 02/15/10

MSDS No. : 004/16833/00MSDS
Revision : E

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Carbon Black

Chemical Formula: C

CAS Number: 1333-97-4

Other Designations: Not applicable

General Use: Not applicable

Supplier: Micromeritics Instrument Corp.
1 Micromeritics Dr.
Norcross, GA 30093-1877 USA

Contact: Human Resources
Phone: (770) 662-3620
Fax: (770) 662-3696

Manufacturer: Laboratory Standards & Technology LLC.
227 Somerset St., Borger, Tx 79007-8231
Emergency Phone: 806- 273-3006

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% vol
Carbon Black (99% pure carbon)	1333-97-4	100%

Trace Impurities:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Carbon Black	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.	none estab.

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Potential Health Effects

HMIS	
H	0
F	1
R	0
PPE[†]	
[†] Sec. 8	

Primary Entry Routes: Inhalation, Ingestion, Eyes, Skin Contact

Target Organs: Not applicable.

Acute Effects:

Acute Inhalation: None expected. Based on experience, temporary discomfort or mechanical irritation to upper respiratory tract may occur due to inhalation of dust concentrations well above 8 hour TLV.

Acute Eye: Not identified as a significant irritant in rat studies. High dust concentrations may cause mechanical irritation.

Acute Skin: Not identified as a significant irritant in rat studies. No adverse effects expected.

Acute Ingestion: No adverse effects expected.

Section 4 - First Aid Measures

Inhalation: Not applicable

Eye Contact: Not applicable

Skin Contact: Not applicable

Ingestion: Not applicable

Section 5 - Fire-Fighting Measures

Flash Point: 500-700 °F

Flash Point Method: Not applicable.

Burning Rate: Not applicable

Autoignition Temperature: Not applicable.

Flammability Classification: Not available.

Extinguishing Media: Drychemical or Waterfog or CO₂ or Sand/Earth.

Closed containers exposed to fire may be cooled with water.

NOTE on Extinguishing Agents:

Exclude air.

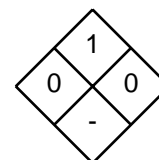
Unusual Fire or Explosion Hazards: Use appropriate respirator for protection against possible exposure. It may not be obvious that the carbon black is burning unless the material is stirred and sparks are apparent.

Hazardous Combustion Products: Carbon monoxide and carbon dioxide from burning.

Fire-Fighting Instructions: Use water with fog nozzle only.

Incompatibility (Keep away from): Strong oxidizers such as hydrogen peroxide, bromine, and chromic acid.

NFPA



Section 6 - Accidental Release Measures

Spill /Leak Procedures:

Containment: Not applicable.

Cleanup: Spilled carbon black is not a hazardous waste under Federal Law (RCRA). Spills can be washed down or vacuumed.

Section 7 - Handling and Storage

Handling Precautions: None for normal handling. Wear NIOSH approved dust respirator to avoid breathing dust.

Storage Requirements: None applicable.

Regulatory Requirements: Not applicable.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:

Ventilation: None under normal use conditions. Provide local exhaust ventilation as necessary to control dust.

Administrative Controls:

Respiratory Protection: When entering closed storage tank, use appropriate respirator or air line for possible exposure to carbon monoxide. Wear a NIOSH approved dust protection respirator when carbon black dust levels exceed an eight hour time weighted average of 3.5 mg/m³ of air.

Protective Clothing/Equipment: Dust mask for extended exposure.

Safety Stations: Not applicable

Contaminated Equipment: Not applicable.

Section 9 - Physical and Chemical Properties

Physical State: Amorphous Solid
Appearance and Odor: Pellets, black, no odor.
Odor Threshold: Not applicable
Vapor Pressure: mm Hg at (20°C): Negligible
Vapor Density (Air=1): Not applicable
Formula Weight: Not applicable
Density: Not applicable
Specific Gravity (H₂O=1): 1.7 to 1.9 at 16°C
pH (as is): Not applicable

Water Solubility: Insoluble
Other Solubilities: Not applicable
Boiling Point: Not applicable
Freezing/Melting Point: Not applicable
Viscosity SUS at 100° F: Not applicable
Refractive Index: not applicable
Surface Tension: Not applicable
(By weight %) Volatile: About 1
Evaporation Rate: Not applicable

Section 10 - Stability and Reactivity

Stability: REF, MAT'L CARBON 30.6 m²/g is stable under normal conditions.

Polymerization: Not applicable.

Chemical Incompatibilities: Strong oxidizers such as hydrogen peroxide, bromine, and chromic acid.

Conditions to Avoid: Not applicable

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide from burning.

Section 11- Toxicological Information

Routes of Exposure:

Inhalation, Ingestion, Eyes, Skin Contact.

Medical Conditions Aggravated:

None expected. Like any nuisance dust, may aggravate certain pre-existing upper respiratory disorders, such as bronchitis or asthma.

Synergistic Materials:

None expected

Chronic Effects:

Chronic Inhalation:

Human Studies: Epidemiological studies of workers in the carbon black producing industries of North America and Western Europe show no evidence of clinically significant, adverse health effects due to occupational exposure to carbon black. Early studies in the former USSR and Eastern Europe report respiratory diseases among workers exposed to carbon black, including: bronchitis, pneumoconiosis, emphysema, and rhinitis. These studies are of questionable validity, due to inadequate study design and methodology, lack of appropriate controls for cigarette smoking, and other confounding factors such as concurrent exposures to carbon monoxide, coal oil, and petroleum vapors. Moreover, review of these studies indicates that work environment concentrations of carbon black were considerably greater than current occupational exposure standards. In its Monograph Volume 65, issued in April 1996, the International Agency for Research on Cancer (IARC) reevaluated carbon black and concluded that "there is *inadequate evidence* in humans for the carcinogenicity of carbon black".

ANIMAL TOXICITY STUDIES: SRB4&5 carbon black contains less than 0.1% of adsorbed PAHs (polynuclear aromatic hydrocarbons). In non-adsorbed form, some PAHs have been found to be carcinogens in animal studies. No correlating carcinogenic effect, however, has been observed in humans due to the exposure to carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed, for long periods of time, to excessive concentrations of carbon black and several other insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Many researchers conducting rat inhalation studies believe that these effects most likely result from the massive accumulation of small dust particles in the lung which overwhelm the natural lung clearance mechanisms, known as the "lung overload" phenomenon, rather than from a specific chemical effect of the dust particles in the lung.

Carcinogenicity: Many inhalation toxicologists believe that the tumor response observed in the referenced rat studies is species specific and does not correlate to human exposure. However, the IARC evaluation in Monograph 65 concluded that "there is *sufficient evidence* in experimental animals for the carcinogenicity of carbon black". Based on this evaluation, along with their evaluation of *inadequate evidence* of carcinogenicity in humans. IARC's overall evaluation is that "carbon black is possibly *carcinogenic to humans* (Group 2B)".

Carbon black has not been listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). The National Institute of Occupational Safety and Health (NIOSH) criteria document on carbon black recommends that only carbon blacks with PAH levels greater than 0.1% be considered suspect carcinogens.

Mutagenicity:

Carbon black is negative in Ames tests and bioassays for food use testing.

Reproductivity:

None known

Chronic Ingestion:

No significant changes were seen in rats or mice during feeding studies with carbon black for up to two years.

Chronic Eye:

No adverse effects expected.

Chronic Skin:

After application of carbon black suspension to the skin of mice, rabbits, and rats, no skin tumors were reported. Powder may cause drying of the skin with prolonged contact.

Sensitization:

No adverse effects expected.

Animal Toxicity:

Primary Eye Irritation (rabbit):

Produced slight conjunctiva redness which cleared within 7 days. Maximum Draize scores ranged from 10-17.

Primary Skin Irritation (rabbit):

Very slight erythema, Primary Irritation Index Score = 0.6.

Oral LD50 (rat):

>8,000 mg/kg.

"Ames" Test:

Not mutagenic without or with metabolic activation S9.

Section 12 - Ecological Information

Environmental: Section 313 (Title III Superfund Amendment and Reauthorization Act):

This product does not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Parts 372.

Soil Absorption/Mobility: Not applicable.

Section 13 - Disposal Considerations

Disposal: Dispose of in accordance with all applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: Not applicable.

Container Cleaning and Disposal: Not applicable.

Section 14 - Transport Information**DOT Transportation Data (49 CFR 172.101):**

DOT: Not regulated.

Reportable Quantity: Not applicable.

Freight Classification: 45 UFC Rail, 77 1/2 LTL Class 45 truckload.

Special Transportation Notes: None

Section 15 - Label Information**CARBON BLACK CAS REG. NO. 1333-97-4**

CAUTION: Inhalation of carbon black dust may cause temporary discomfort to the nose and respiratory tract. Wear NIOSH approved dust protection respirator when carbon black dust levels exceed and eight hour time weighted average of 3.5 mg/cubic meter of air.

Section 16 - Other Information

Prepared By: M. Day

Revision Notes: None

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