

HMIS Index:

0 - Minimal
 1 - Slight
 2 - Moderate
 3 - Serious
 4 - Severe

HMIS Rating:

0 - Health
 1 - Flammability
 0 - Reactivity

Cabot Corporation**MATERIAL SAFETY DATA SHEET****SECTION I - Chemical Product and Company Identification**

Product Code Not Applicable	Trade Name Carbon Black	Product Type Elemental Carbon	Date Revised August 1993
Manufacturer/Supplier Cabot Corporation		Address 75 State Street Boston, Massachusetts 02109-1806 USA	
Telephone No. 617-342-6023	Facsimile No. 617-342-6103	Emergency Telephone Nos. 617-342-6023 (Days) 304-665-2442 (Nights/Weekends)	

SECTION II - Composition / Information on Ingredients

Substance Trivial Name Carbon Black		Formal Name Carbon Black	Chemical Family Elemental Carbon
Chemical Formula C	Molecular Weight 12	CAS No. 1333-86-4	% by Weight 100%

Trade Names and Synonyms

BLACK PEARLS®, CRX®, CSX, ELFTEx®, IRX, MOGUL®, MONARCH®, REGAL®, STERLING®, and VULCAN® carbon blacks. The foregoing are registered trade names of Cabot Corporation.

Material Uses

Used as a filler, reinforcing agent, pigment, electrical conducting or chemical reducing agent, in rubbers, plastics, inks, copy machine toners, paints and batteries.

SECTION III - Hazards Identification**Main Hazards**

Combustible - fire may not be visible in powder; releases carbon monoxide when burning; not easily extinguished when burning; water may spread a fire by floating dust.

Some carbon black grades are electrically conductive.

Dust is fine enough to penetrate electrical boxes, unless boxes are tightly sealed.

Dust and powder may cause electric shorts.

Health Effects

Inhalation - May be irritating to lungs at high dust levels.

Ingestion - None

Eyes - May cause irritation at high dust levels

Skin - None

Potential Health Effects

Not listed as a carcinogen by IARC, NTP, or OSHA

SECTION IV - First Aid Measures

Inhalation - Not Hazardous. In case of discomfort, remove exposed individual to fresh air.

Ingestion - Not Hazardous. No treatment recommended for ingestion.

Eyes - Treat symptomatically for irritation. Flush lightly with water to remove dust.

Skin - Not hazardous. Wash exposed skin for hygienic purposes. Most skin irritation attributed to carbon black is due to soap and scrubbing used during washup. Use a mild unscented soap and a soft wash cloth or towel to apply soap repeatedly to skin.

Advice to Physicians.

Treat symptomatically for lung or eye irritation, if present.

SECTION V - Fire Fighting Measures

Extinguishing Media Copious Water. Use to cool below ignition point and/or exclude air	Unsuitable Media None	Flash Point > 500°C	Flash Point Method Pensky-Martens Closed Cup
Lower Explosive Limit Not Applicable	Upper Explosive Limit Not Applicable	Ignition in Air Occurs above 315° C (600°F)	
Flammability Classification Combustible solid		Flame Propagation in Air Very slow burning solid	
Fire Fighting Procedure Normal fog or nozzle water application and/or exclusion of air		Combustion Hazards Carbon monoxide (CO) and carbon dioxide (CO ₂)	
Protective Equipment Use appropriate respirator for CO and CO ₂		Unusual Fire Hazards It may not be obvious that carbon black is burning unless material is stirred and sparks are apparent. Carbon black that has been on fire should be watched closely for a minimum of 48 hours in order to be sure no smoldering material is present. Dust and powder may cause electrical shorts. Dust is fine enough to penetrate electrical boxes unless boxes are tightly sealed.	
<p>Dust Explosion Potential Cabot carbon blacks are not considered an explosion hazard by the NFPA (National Fire Protection Association). The National Electrical Code (NEC) is derived from NFPA Standard 70 and is referenced in OSHA regulations. -</p> <p>NEC, Chapter 5, Article 500-3, includes carbon black dusts under FPN Number 14, Group F, dusts if they contain "more than 8% total volatile matter".</p> <p>NEC does not consider carbon black dusts containing less than 8% total volatile matter to be an explosion hazard.</p> <p>Cabot Corporation carbon blacks are well below 8% total volatile matter.</p> <p>Carbon black dusts may ignite and burn in air if exposed to a chemical or electrical ignition source.</p>			
Sensitivity to Impact Not applicable		Static Discharge Effects Some grades of carbon black are electrically non-conducting enough to allow a build up of static electrical charge during handling.	

SECTION VI - Accidental Release Measures

Personal Precautions

Wear protective equipment appropriate for dust levels anticipated - see Section VIII

Spill Cleanup Measures

Spills should be removed by vacuuming, or by lightly spraying with water and sweeping mixture into a suitable container in order to prevent dust. To avoid dust generation, do not sweep dry.

Environmental Precautions

Carbon black is not a hazardous waste. Dispose of in landfill or by incineration in accordance with national and local laws and regulations.

SECTION VII - Handling and Storage

Handling & Storage Precautions

Prevent exposure to high temperatures, open flames, and strong oxidizers.

Carbon black will adsorb moisture and vapors from air. Keep container tightly sealed to prevent dust and moisture/vapor adsorption. Store in a clean dry area.

Hygienic Practices

Avoid creating dust. Clean up all spills promptly. Avoid skin contact, since material is difficult to remove from skin and is cosmetically unattractive. Wash exposed skin daily. Wash work clothes daily.

Special Precautions

Before entering closed vessels and confined spaces containing carbon black, test for possible elevated levels of CO and CO₂, or lack of adequate oxygen.

SECTION VIII - Exposure Controls / Personal Protection

Definitions

<p>ACGIH American Conference of Government Industrial Hygienists</p>	<p>NIOSH U.S. National Institute for Occupational Safety and Health</p>	<p>OSHA U.S. Occupational Safety and Health Administration</p>
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<p>PEL Permissible Exposure Limit</p>	<p>TLV Threshold Limit Value</p>	<p>TWA Time Weighted Average Concentration</p>
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Inhalation Standards

ACGIH TLV = 3.5 mg/M³ TWA 8 hours/day, 40 hours/week

OSHA PEL = 3.5 mg/M³ TWA 8 hours/day, 40 hours/week

Eye-Face Protection

None Required.

Eye protection recommended if dust levels exceed TLV in order to prevent eye irritation.

Gloves

None Required.

Barrier cream application prior to skin exposure may assist in the removal of carbon black from the skin.

Protective Clothing

None Required.

Work clothing should be confined to the workplace and washed daily in order to prevent spreading unsightly black dust.

SECTION VIII (Continued)

Respiratory Protection
 NIOSH recommends the following respiratory protection be used for carbon black:

0 - 3.5 mg/M3 None	3.5 - 17.5 mg/M3 Dust/Mist filter respirator (DM)	17.5 - 35 mg/M3 DM with full face mask (FF) Supplied air respirator (SA) Self-contained breathing apparatus (SCBA)
35 - 87.5 mg/M3 DM/FF Powered air purifying respirator (PAPR) SCBA SA/FF	175 - 3500 mg/M3 SA/FF in pressure demand (PD) or positive pressure (PP) modes	Emergency/IDLH SA/FF/PD SA/FF/PP SA/FF/PP with auxilliary SCBA/FF/PP
Escape High Efficiency Particulate Air (HEPA) filter respirator Escape SCBA		With > 0.1% PAHs SCBA/FF/PP SA/FF/PP SA/FF/PP with auxilliary SCBA/FF/PP

Engineering Controls
 Use sufficient ventilation in volume and pattern to maintain dust exposures below TLV

Other Protective Measures
 Wash exposed skin daily. Wash exposed clothing daily.

SECTION IX - Physical and Chemical Properties

Physical State Solid Powder	Color Black	Odor None
Odor Threshold Not Applicable	pH Not Applicable	Boiling Point Not Applicable
Evaporation Rate Not Applicable	Melting/Freezing Point Not Applicable	% Volatile by Volume Not Applicable
Solubility in Water Insoluble	Specific Gravity (Water = 1) 1.7 - 1.9	Vapor Density Not Applicable
Vapor Pressure Not Applicable	Reid Vapor Pressure Not Applicable	Water/Oil Distribution Not Applicable
Viscosity Not Applicable		Pour Point Not Applicable

SECTION X - Stability and Reactivity

Chemical Stability Stable	Conditions To Avoid Contact with strong oxidizers; exceeding ignition temperature of 315°C (600°F); excessive heat or flame	Incompatible Materials None
Reactivity May react exothermically upon contact with strong oxidizers, i.e, chlorates, bromates, nitrates	Hazardous Decomposition Not Applicable. Releases carbon monoxide (CO) and carbon dioxide (CO2) when burning	Hazardous Polymerization Not Applicable

SECTION XI - Toxicological Information

Routes of Exposure Inhalation, Ingestion, Eyes, Skin contact (not absorbed through the skin)	Acute Inhalation Effect None expected. Temporary discomfort to the upper respiratory tract may occur due to inhalation of dust concentrations above the TLV	Acute Ingestion Effect None expected
Acute Eye Effect Mild irritant	Acute Skin Effect None Expected	
<p>Chronic Inhalation Effect - 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 carcinogenic effect, however, has been found in humans due to exposure to carbon black. Epidemiologic studies of workers in the carbon black producing industries of North America and Western Europe show no significant adverse health effects due to occupational exposure to carbon black. Early studies in the USSR and Eastern Europe report respiratory diseases among workers exposed to carbon black, including: bronchitis, pneumoconiosis, emphysema, and rhinitis. Such 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 concentrations of carbon black were greater than current occupational exposure standards. Chronic inflammation, lung fibrosis, and lung tumors have been found in preliminary studies in rats experimentally exposed, for long periods of time, to excessive concentrations of carbon black and other insoluble dust particles which overwhelm the lung clearance mechanisms. Researchers who conducted these tests believe that these conditions most likely result from the massive accumulation of small dust particles in the lung, or the "Lung Overload" phenomenon, rather than from a specific chemical effect of the dust particles. Such effects occur only when the lungs are overloaded with an excess of small particles. These effects are unlikely to result from workplace exposures to carbon black below the TLV. Human studies have not found that workplace exposures to carbon black below the TLV cause these effects.</p>		
Chronic Ingestion Effect None expected	Chronic Eye Effect Mild irritant	Chronic Skin Effect None expected
Sensitization to Material None expected	Medical Conditions Aggravated: None expected. Carbon black, like any nuisance dust, may aggravate certain pre-existing upper respiratory disorders, such as bronchitis or asthma	Synergistic Materials None expected
Mutagenicity Negative in Ames tests. Negative in bioassays used for food use testing.	Reproductive Toxicity None known	Teratogenicity None known
<p>Carcinogenicity Not listed as a carcinogen by the following: IARC (International Agency for Research on Cancer) - listed by IARC as a Class 3 substance - that is, a substance for which information is inadequate to permit a determination that it is carcinogenic to either humans or animals; NTP (U.S. National Toxicology Program); OSHA. NIOSH Criteria Document recommends that carbon blacks with PAH (polynuclear aromatic hydrocarbon) levels greater than 0.1% be considered suspect carcinogens. Cabot Corporation carbon blacks contain less than 0.1% PAHs.</p>		
LD (50%) for Material > 240 mg/kg, IP injection, mice and rats	LC (50%) for Material >156 mg/M3, mice and rats	

SECTION XII - Ecological Information

Mobility Not mobile in soil. Not soluble in water	Persistence/Degradability Does not biodegrade	Bio-Accumulation Not expected to accumulate in biological organisms
Ecotoxicity Not toxic to aquatic or terrestrial plants or animals		

SECTION XIII - Disposal Considerations

Legal Classification
 Not a hazardous waste under U.S. RCRA (Resource Conservation and Recovery Act) regulations. Not restricted/Non-hazardous under Canadian Workplace Hazardous Materials Information System (WHMIS) regulations.

Container disposal
 Return reusable containers to manufacturer. Incinerate or recycle paper bags.

SECTION XIV - Transport Information

UN Number Not classified	UN Proper Shipping Name Carbon Black	UN Class Combustible solid. The United Nations Transport of Dangerous Goods Regulations do not classify carbon black as spontaneously flammable
UN Packing Group Not classified	IMDG Proper Shipping Name The IMDG (International Maritime Dangerous Goods) Code does not classify carbon black as a "hazardous cargo" if it is "carbon, non-activated, mineral origin." Cabot carbon blacks meet this definition. Carbon blacks are not subject to the IMDG Code provisions for hazard class 4.2 if they pass the test for non-activated carbon blacks described on page 4082-1. Cabot carbon blacks pass this IMDG test	US Rail Regulations Non-hazardous material. The Bureau of Explosives of the Association of American Railroads has ruled it is unnecessary to classify carbon black as hazardous under U.S. DOT (Department of Transportation) regulations

SECTION XV - Regulatory Information

National Registries - Carbon black, CAS number 1333-86-4, appears on:

Australia: AICS, Australian Inventory of Chemical Substances

Canada: CEPA, Canadian Environmental Protection Act, 6th Amendment, Domestic Substances List

Europe: EINECS, European Inventory of Existing Commercial Chemical Substances. Includes Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and United Kingdom. Austria, Finland, Norway, Sweden and Switzerland also have chemical control laws which generally follow EINECS

Japan: MITI, Ministry of International Trade and Industry List of Existing Chemical Substances

Korea: TCCL, Toxic Chemicals Control Law

United States: TSCA, Toxic Substances Control Act. Carbon black is a Chemical Hazard Information Profile (CHIP) chemical under TSCA

SECTION XV - (Continued)

U.S. Clean Air Act, 1990

Carbon black is not made with, and does not contain, Class I or Class II ozone depleting chemicals, as defined under the 1990 amendments to this Act

U.S. CONEG Legislation

The Coalition of Northeast Governors Source Reduction Council limits the sum of the levels of Lead, Cadmium, Mercury, and Hexavalent Chromium to less than 100 parts per million by weight. Cabot carbon blacks meet CONEG requirements

U.S. SARA Title III

Superfund Amendments and Reauthorization Act (SARA)

Section 302

Carbon black does not contain substances identified under Section 302 as extremely hazardous

Section 311/312

Carbon black is subject to EPA's "Hazardous Chemical Reporting and Community Right-to-Know" and the need to annually submit Tier I and/or Tier II reports if present at a facility at any one time in amounts equal to or greater than 10,000 pounds

Section 313

Carbon black does not contain substances identified under Section 313 as toxic chemicals in excess of the de minimis concentrations necessary to be subject to this rule

U.S. FDA Regulations

Carbon black is permitted for indirect contact with foods and drugs when used as a filler in rubber articles intended for repeated use under 29 CFR (Code of Federal Regulations) 177.2600.

Total carbon black (channel process blacks and furnace process blacks) in the rubber may not exceed 50% by weight of rubber product.

Furnace process black content may not exceed 10% by weight of rubber products intended for use in contact with milk or edible oils.

Cabot carbon blacks are furnace process blacks.

U.S. NSF Certification

The National Sanitation Foundation is the lead agency for a consortium of governmental agencies authorized to approve formulations for plastic and resin materials used in water pipes and containers.

Information about Cabot carbon blacks has been given to the NSF and may be used to obtain NSF approval for formulations using carbon black.

U.S. State of Louisiana

Louisiana Community Right-To-Know legislation requires the following:

Carbon black inventory reporting if the threshold quantity of 500 pounds is exceeded on any single day through state Right-To-Know reporting channels.

Carbon black spill or release reporting if 5000 pounds is lost beyond the site of the facility, to the state Emergency Response Commission, via the Office of the State Police, Transportation and Environmental Safety Section, Hazardous Materials Hotline, 504-925-6596 (collect calls accepted 24 hours a day)

SECTION XVI - Other Information

Label Text
Carbon Black

Caution
Wear NIOSH approved Dust
Protection Respirator when
carbon black dust levels exceed
the OSHA Permissible Exposure
Limit of 3.5 mg/M3

Cabot Corporation
75 State Street
Boston, MA 02109-1806

CAS Registry Number
1333-86-4

Reference Sources Used

NIOSH Criteria for a Recommended Standard for Occupational Exposure to Carbon Black, U.S. Department of Health, Education and Welfare, 99 pages, September 1978

NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health, Education and Welfare, 241 pages, September 1985

NIOSH Registry of Toxic Effects of Chemical Substances, U.S. Department of Health, Education and Welfare, 5 volumes, April 1993

Cabot Corporation files and searches of published literature

Revision Indicator

This is an original version of this format MSDS. Revised sections of this MSDS will be indicated by an asterisk (*) in front of the section affected.

Disclaimer

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