

Material Safety Data Sheet

Carbon Black

According to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

1.0 Identification of Substance and Company

1.1 Product Name: Carbon Black

Trade Names: Thermax N990, N907 Stainless, N990 Ultra-Pure Floform, Thermax N991, N991 Ultra-Pure, N908 Stainless, N908 Stainless Ultra-Pure Powder, Fine Thermal, MFT, Carbocolor, Carbocolor Powder, N991R, Colorant Residue, TB Carbon.

European Union REACH Registration Number: 01-2119384822-32

1.2 Manufacturer/Supplier:

Cancarb Limited
1702 Brier Park. Cr. NW.
Medicine Hat, Alberta
Canada, T1C 1T8
Phone number: + 1- 403-527-1121

1.3 European Union Only Representative:

Global Energy Investments S.a.r.l.
c/o Centralis S.A.
37 rue d'Anvers
L-1130 Luxembourg

1.4 Emergency Number(s):

For Chemical Emergency ONLY (spill, leak, fire, exposure or accident), call CHEMTREC at +1-703-527-3887 or see section 16 for in country telephone numbers.

For ALL other inquiries about this product, call +1-403-527-1121 or email; customer_service@cancarb.com

1.5 Use of Substance/Preparation:

Used as a filler in rubber and plastics, carburizer and reducing agent in metallurgy, colorant/pigment and refractory additive

2.0 Hazards Identification

2.1 Hazard Classification:

Not a hazardous substance or preparation under the Globally Harmonized System (GHS). Not a hazardous substance or preparation under EC-directives 67/548/EEC or 1999/45/EC and their various amendments and adaptations. Not hazardous substance or preparation under CLP-Regulation (EC) No 1272/2008. Does not contain any of the "Candidate List of Substances of Very High Concern" (SVHC) at levels >0.1 % as defined in the REACH legislation

In 1995 IARC concluded, "There is inadequate evidence in humans for the carcinogenicity of carbon black." Based on rat inhalation studies IARC concluded that there is "sufficient evidence in experimental animals for the carcinogenicity of carbon black," IARC's overall evaluation was that "Carbon black is possibly carcinogenic to humans (Group 2B)." This conclusion was based on IARC's guidelines, which require such a classification if one animal species exhibits carcinogenicity in two or more studies. Lung tumors in rats are the result of exposure under "lung overload" conditions. The development of lung tumors in rats is specific to this species. Mouse and hamster showed no carcinogenicity in similar studies.

In 2006 IARC re-affirmed its 1995 classification of carbon black as, Group 2B (possibly carcinogenic to humans).

Overall, as a result of the detailed epidemiological investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated. This view is consistent with the IARC evaluation in 2006. Furthermore, several epidemiological and clinical studies of workers in the carbon black production industries show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black. No dose response relationship was observed in workers exposed to carbon black.

Applying the rules of the Globally Harmonized System of Classification and Labelling (GHS, e.g. UN 'Purple Book', EU CLP Regulation) the results of repeated dose toxicity and carcinogenicity studies in animals do not lead to classification of Carbon Black for Specific target organ toxicity (Repeated exposure) and carcinogenicity. UN GHS says, that even if adverse effects are seen in animal studies or in-vitro tests, no classification is needed if the mechanism or mode of action is not relevant to humans.²⁾ The European CLP Regulation also mentions, that no classification is indicated if the mechanism is not relevant to humans.³⁾ Furthermore, the CLP guidance on classification and labelling states, that „lung overload“ in animals is listed under mechanism not relevant to humans.⁴⁾

2.2 Emergency Overview:

A black, odorless, insoluble, powder or pellets that can burn or smolder at temperatures greater than 572°F (>300°C). Hazardous products of decomposition can include carbon monoxide, carbon dioxide, and oxides of sulfur. May cause reversible mechanical irritation to the eyes and respiratory tract especially at concentrations above the occupational exposure limit. Some grades of carbon black are sufficiently electrically non-conductive to allow a build-up of static charge during handling. Take measures to prevent the build-up of electrostatic charge.

2.3 Potential Health Effects:

Routes of Exposure: Inhalation, eye, skin Note: ingestion of carbon black is not considered a likely route of exposure.

Eye Contact: May cause mechanical irritation. Irritating, but will not permanently injure eye tissue. Low hazard for usual industrial or commercial handling.

Skin Contact: May cause mechanical irritation, soiling, and skin drying. No cases of sensitization in humans have been reported.

Inhalation: Dust may be irritating to respiratory tract. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. See also Section 8.

Ingestion: Health effects are not known or expected under normal use. Low hazard for usual industrial or commercial handling.

Carcinogenic Effects: See section 11

Target Organ Effects: See section 11

Medical Conditions Aggravated by Exposure: Asthma, Respiratory disorders

2.4 Potential Environmental Effects:

No significant environmental hazards are associated with carbon black release to the environment. Carbon black is not soluble in water. See Section 12.

3.0 Composition/Information on Ingredients

3.1 Component(s):

Carbon Black, amorphous (99% by weight))

Chemical formula: C

CAS number: 1333-86-4

EINECS number: 215-609-9

EU Classification: Not Classified

The PAH (polycyclic aromatic hydro-carbons) contents of the Cancarb carbon blacks are below 0.1 %.

4.0 First Aid Measures

4.1 First Aid Procedures:

Inhalation: Take affected persons into fresh air. If necessary, restore normal breathing through standard first aid measures.

Skin: Wash skin with mild soap and water. If symptoms develop, seek medical attention.

Eye: Rinse eyes thoroughly with large volumes of water keeping eyelid open. If symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

4.2 Note to Physicians:

Treat symptomatically.

5.0 Fire Fighting Measures

5.0 Flammable Properties:

It may not be obvious that carbon black is burning unless the material is stirred and sparks are apparent. Carbon black that has been on fire should be observed closely for at least 48 hours to ensure no smoldering material is present.

Carbon blacks containing more than 8% volatile materials may form an explosive dust-air mixture. Manufactured carbon blacks do not exceed 8% volatile materials content (unless otherwise noted by the supplier). See Section 9, Chemical and Physical Properties.

5.1 Extinguishing Media:

5.2.1 Suitable Extinguishing Media:

Use foam, carbon dioxide (CO₂), dry chemical, nitrogen (N₂), or water fog. A fog spray is recommended if water is used.

5.2.2 Unsuitable Extinguishing Media:

DO NOT USE high pressure water stream as this may spread burning powder (burning powder will float and may spread fire)

5.3 Protection of Firefighters:

Wear full protective fire fighting gear (Bunker gear) including self-contained breathing apparatus (SCBA).

5.3.1 Specific Hazards Arising from the Chemical: (e.g. nature of any hazardous combustion products)

Products of combustion include carbon monoxide (CO), carbon dioxide (CO₂), and oxides of sulfur.

5.3.2 Protective Equipment and Precautions for Firefighters:

Wet carbon black produces very slippery walking surfaces.

6.0 Accidental Release Measures

6.1 Personal Precautions:

Wear appropriate personal protective equipment and respiratory protection. Note: Wet carbon black produces very slippery walking surfaces. See Section 8.

6.2 Environmental Precautions:

Carbon black poses no significant environmental hazards. As a matter of good practice, minimize contamination of sewage water, soil, groundwater, drainage systems, or bodies of water.

6.3 Methods for Containment:

Carbon black is not a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (40 CFR 302), or the Clean Water Act (40 CFR 116), or a hazardous air pollutant under the Clean Air Act Amendments of 1990 (40 CFR, Part 63).

6.4 Methods for Clean-up:

Small spills should be vacuumed when possible. A vacuum equipped with HEPA (high efficiency particulate air) filtration is recommended. Dry sweeping is not recommended. If necessary, light water spray will reduce dust for dry sweeping, but over-wetting may produce very slippery walking surfaces.

Large spills may be shoveled into containers. See Section 13.

6.5 Other Information:

[This may contain specific reporting requirements for spills, leaks, or releases (but may also be referenced in Section 15, Regulatory).]

7.0 Handling and Storage**7.0 Handling:**

Avoid dust exposures above the occupational exposure limit.

Use local exhaust ventilation or other appropriate engineering controls to maintain exposures below occupational exposure limit. Avoid contact with skin and eyes. If exposed, wash to avoid mechanical irritation and soiling.

Dust may cause electrical shorts if capable of penetrating electrical equipment. Ensure equipment is tightly sealed.

If hot work (welding, torch cutting, etc.) is required the immediate work area must be cleared of carbon black product and dust.

Some grades of carbon black are sufficiently electrically non-conductive and may allow a build-up of static charge during handling. Take measures to prevent the build up of electrostatic charge, such as ensuring all equipment is electrically grounded/earthed.

7.1 Storage

Store in a dry place away from ignition sources and strong oxidizers.

Before entering closed vessels and confined spaces containing carbon black test for adequate oxygen, flammable gases and potential toxic air contaminants (e.g., CO). Follow standard safe practices when entering confined spaces.

8.0 Exposure Control/Personal Protection

8.1 Exposure Guidelines:

Country	Occupational Exposure Limit, mg/m ³
Australia	3.0 TWA
Canada	3.5 TWA
France	3.5 TWA
Germany - MAK	1.5 TWA (respirable) ^A
	4.0 TWA (inhalable) ^A
TRGS 900	3.0 TWA (respirable) ^B
	6.0 TWA (respirable) ^C
	10.0 TWA (inhalable) ^D
Italy	3.5 TWA
Korea	3.5 TWA
Spain	3.5 TWA
United Kingdom – OES	3.5 TWA (inhalable)
STEL	7.0, 10 minutes (inhalable)
EU REACH DNEL	2.0 (inhalable)
United States - OSHA-PEL	3.5 TWA
ACGIH-TLV	3.0 TWA Inhalable
NIOSH -REL	3.5 TWA (see Section 11)

TWA = 8-hour time-weighted-average, except as noted. MAK = Maximale Arbeitsplatz-Konzentration (maximum workplace concentration) (advisory). TRGS = Technische Regeln für Gefahrstoffe (regulatory limits). OES = occupational exposure standard. STEL = short-term exposure limit. OSHA-PEL = Occupational Safety and Health Administration - Permissible Exposure Limit. ACGIH-TLV = American Conference of Governmental Industrial Hygienists-Threshold Limit Value. NIOSH-REL = National Institute of Occupational Safety and Health - Recommended Exposure Limit.

^A annual average. ^B applies to all activities except those exempted, consult regulatory agency.

^C applies to certain exempt industries, consult regulatory authority. ^D effective April 2004, consult regulatory agency.

8.2 Engineering Controls:

Use process enclosures and/or exhaust ventilation to keep airborne dust concentrations below the applicable occupational exposure limit.

8.3 Personal Protective Equipment (PPE)

8.3.1 Eye/Face Protection:

Safety glasses or goggles recommended as a matter of good practice

8.3.2 Skin Protection:

Wear general protective clothing to minimize skin contact. Work clothes should not be taken home and should be washed daily.

No special glove composition is required for carbon black. Gloves may be used to protect hands from carbon black soiling. Use of a barrier cream may help to prevent skin drying. Wash hands and other exposed skin with mild soap and water.

8.3.3 Respiratory Protection:

Approved air purifying respirator (APR) for particulates should be used where airborne dust concentrations are expected to exceed occupational exposure limits. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or in circumstances where APRs may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices.

8.3.4 General Hygiene Considerations:

Emergency eyewash and safety shower should be in close proximity as a matter of good practice. Wash hands and face thoroughly with mild soap before eating and drinking.

9.0 Physical and Chemical Properties

Appearance:	powder or pellet
Color:	black
Odor	odorless
Odor threshold:	not applicable
Melting point/range	not applicable
Boiling point/range	not applicable
Vapor pressure	not applicable
Evaporation rate	not applicable
Density: (20°C)	1.7 – 1.9 g/ml
Bulk density:	1.25-40 lb/ft ³ , 20-640 kg/m ³
Pellets	200-680 kg/m ³
Powder (fluffy)	20-380 kg/m ³
Solubility (in Water):	insoluble
pH value: (ASTM 1512)	4-11 [50 g/l water, 68°F (20°C)]
Partition coefficient (n-octanol/water):	not applicable
Viscosity:	not applicable
Decomposition temperature:	572°F (300°C)
Auto-inflammability temperature	>284°F (>140°C*)

(*100 mm sample cube temperature did not exceed 392°F (200°C). Not classifiable as a Division 4.2 self-heating substance as defined by UN Recommendations on the Transport of Dangerous Goods and (IMDG²⁰))

9.1 Explosive Properties:

Explosibility - Kst ASTM (E1226) 23 bar-m/s (30 kJ). ST1 hazard class.
 - Pmax ASTM (E1226) 6.7 barg (30 kJ)
 Minimum Explosible Concentration (MEC) ASTM (1515) 375 g/m³ (30kJ**)
 **Note: ASTM explosion methods recommended 10 kJ energy sources, no explosion occurred until 30 kJ where used.
 Dust Cloud, Minimum Auto Ignition Temperature (MAIT), Godberg Greenwald Furnace
 ASTM (E1491) 800°C
 Minimum Ignition Energy (MIE) ASTM E20-19-99: 5130 mJ

10.0 Stability and Reactivity

10.1 Chemical Stability:

Carbon black cannot easily be caused to explode and therefore there is no danger in practical use. However, in special test procedures a carbon black/air mixture can be made to explode.

10.2 Conditions to Avoid:

Prevent exposure to high temperatures and open flames. Avoid temperatures above 183°C in 27 m³ volumes

10.3 Incompatible Materials:

Strong oxidizers such as chlorates, bromates, and nitrates

10.4 Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide, organic products of decomposition, oxides or sulfur (sulfoxides) form if heated above decomposition temperature.

10.5 Possibility of Hazardous Reaction

Will not occur.

11.0 Toxicological Information

Acute Toxicity:

Acute oral toxicity:	LD ₅₀ (rat), > 8000 mg/kg
Acute dermal toxicity	no data
Acute inhalation toxicity	no data
Skin Irritation: rabbit:	non-irritative, index score 0.6/8 (4.0 = severe edema)
Eye irritation: rabbit:	non-irritative, Draize score 10-17/110 (100 = maximally irritating)
Respiratory sensitization:	No data
Specific target organ toxicity (single exposure)	Not applicable
Specific target organ toxicity (repeated exposure) or Subchronic toxicity:	
Rat, inhalation, duration 90 days, NOAEL = 1.1 mg/m ³ (respirable)	
Target organ: lungs;	
Effect: inflammation, hyperplasia, fibrosis	
Rat / Mouse, inhalation, duration 2 years	
Target organ: lungs;	
Effect: inflammation, fibrosis, tumors	

Effects in the rat lung are considered to be related to the “lung overload phenomenon” (1 & 6 & 7 & 8 & 9) rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles.

Chronic Toxicity:

Rat, oral, duration 2 years
Effect: no tumors

Mouse, oral, duration 2 years
Effect: no tumors

Mouse, dermal, duration 18 months
Effect: no skin tumors

Mouse / Hamster, inhalation, duration 12~24 months
Effect: no lung tumors

Rat, inhalation, duration 2 years
Target organ: lungs

Effect: inflammation, fibrosis, tumors Note: Tumors in the rat lung are considered to be related to the “particle overload phenomenon” rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions.

Sensitization:

No evidence of sensitization was found in animals.
No cases of sensitization in humans have been reported.

Carcinogenicity Assessment:

Tumor development in Rats caused by lung overload, no epidemiological evidence for lung tumors in Humans

Lung tumors in rats are the result of exposure under “lung overload” conditions. The development of lung tumors in rats is specific to this species. Mouse and hamster do not develop lung tumors under similar test conditions. The CLP guidance on classification and labelling states, that „lung overload“ in animals is listed under mechanism not relevant to humans. ⁽⁴⁾

IARC listed: *Group 2B (possibly carcinogenic to humans)*. Not listed as a human carcinogen by NTP, ACGIH, OSHA, or the European Union. ACGIH listed as A3 Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

Mutagenic Effects:*In Vitro*

Carbon black is not suitable to be tested in bacterial (Ames test) and other *in-vitro* systems because of its insolubility. When tested, however, results for carbon black showed no mutagenic effects. Organic solvent extracts of carbon black can, however, contain traces of polycyclic aromatic hydrocarbons (PAHs). A study to examine the bioavailability of these PAHs showed that PAHs are very tightly bound to carbon black and not bioavailable⁽⁵⁾.

In Vivo

In an experimental investigation, mutational changes in the *hprt* gene were reported in alveolar epithelial cells in the rat following inhalation exposure to carbon black. This observation is believed to be rat specific and a consequence of “lung overload” which led to chronic inflammation and release of oxygen species. (see Chronic toxicity above). This is thus considered to be a secondary genotoxic effect and thus carbon black itself would not be considered to be mutagenic.

Reproductive Effects:

No effects have been reported in long-term animal studies.

Epidemiology:

Results of epidemiological studies of carbon black production workers suggest that cumulative exposure to carbon black may result in small decrements in lung function. A recent U.S. respiratory morbidity study suggested a 27 ml decline in FEV₁ from a 1 mg/m³ (inhalable fraction) exposure over a 40-year period. An older European investigation suggested that exposure to 1 mg/m³ (inhalable fraction) of carbon black over a 40-year working-lifetime would result in a 48 ml decline in FEV₁. However, the estimates from both studies were only of borderline statistical significance. Normal age related decline over a similar period of time would be approximately 1200 ml.

The relationship between other respiratory symptoms and exposure to carbon black is even less clear. In the U.S. study, 9% of the highest exposure group (in contrast to 5% of the unexposed group) reported symptoms consistent with chronic bronchitis. In the European study, methodological limitations in the administration of the questionnaire limit the conclusions that can be drawn about reported symptoms. This study, however, indicated a link between carbon black and small opacities on chest films, with negligible effects on lung function.

A study on CB production workers in the UK⁽¹⁰⁾ found an increased risk of lung cancer in two of the five plants studied, however, the increase was not related to the dose of CB. Thus, the authors did not consider the increased risk in lung cancer to be due to CB exposure. A German study of CB workers at one plant^(11 & 12 & 13 & 14) found a similar increase in lung cancer risk but, like the 2001 UK study⁽¹⁰⁾, found no association with CB exposure. In contrast, a large US study⁽¹⁵⁾ of 18 plants showed a reduction in lung cancer risk in CB production workers. Based upon these studies, the February 2006 Working Group at IARC concluded that the human evidence for carcinogenicity was *inadequate*⁽¹⁾

Since this IARC evaluation of Carbon Black, Sorahan and Harrington ⁽¹⁶⁾ re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with CB exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney ^(17 & 18) to the German cohort; in contrast, they found no association between CB exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington. Morfeld and McCunney ⁽¹⁹⁾ applied a Bayesian approach to unravel the role of uncontrolled confounders and identified smoking and prior exposure to occupational carcinogens received before being hired in the carbon black industry as main causes of the observed lung cancer excess risk.

Overall, as a result of these detailed investigations, no causative link between CB exposure and cancer risk in humans has been demonstrated. This view is consistent with the IARC evaluation in 2006.

Several epidemiological and clinical studies of workers in the carbon black production industries show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

No dose response relationship was observed in workers exposed to carbon black.

Aspiration Toxicity: No data

12.0 Ecological Information

Aquatic Toxicity:

Acute fish toxicity: LC50 (96 h) > 1000mg/l,
Species: *Brachydanio rerio* (zebrafish),
Method: OECD Guideline 203

Acute invertebrate toxicity:
EC50 (24 h) > 5600 mg/l.
Species: *Daphnia magna* (waterflea),
Method: OECD Guideline 202

Acute algae toxicity:
EC 50 (72 h) >10,000 mg/l
NOEC 50 ≥10,000 mg/l
Species: *Scenedesmus subspicatus*,
Method: OECD Guideline 201

Activated sludge:
EC0 (3 h) >= 800 mg/l.
Method: DEV L3 (TTC test)

Environmental Fate:

Mobility
Not soluble in water. Not expected to migrate.
Known or predicted distribution
Not soluble in water. Expected to remain on soil surface. Chemically inert

Bioaccumulation Potential:

Bioaccumulation is not expected due to physicochemical properties of the substance.

Effects of Other Hazards: no data

13.0 Disposal Considerations

Product can be burned in suitable incineration plants or disposed of in a suitable landfill in accordance with the regulations issued by the appropriate federal, provincial, state and local waste management laws.

EU:	EU Waste Code No. 61303 per Council Directive 75/422/EEC
U.S.:	Not a hazardous waste under U.S. RCRA, 40 CFR 261.
Canada:	Not a hazardous waste under provincial regulations.

Container/Packaging. Return reusable containers to manufacturer. Paper bags may be incinerated, or recycled, or disposed of in an appropriate landfill in accordance with national and local laws.

14.0 Transport Information

UN number: not applicable

UN proper shipping name: not applicable

Transport hazard class: not applicable

Packing group: not applicable

Marine pollutant: not applicable

Information on any special precautions, which a user needs to be aware of, or which is necessary, in connection with transport or conveyance: no data

Classifications and rules under transport related other foreign regulations:

Not classified as dangerous in the meaning of transport regulations.

Non-activated carbon black of mineral origin.

No hazardous material of division 4.2

15.0 Regulatory Information

Korea:

Industrial Safety and Health Law, a hazardous factor for which the exposure limit has been established (TWA 3.5 mg/m³). Dangerous Substance Safety Management Law, not applicable. Wastes Management Law. Dispose of contents/containers in accordance with regulations prescribed in the Wastes Management Law. This substance is not classified as designated wastes.

European Union:

Label Information

Carbon black is not defined as a dangerous substance or preparation according to Council Directive 67/548/EEC or EC CLP 1272/2008 and its various amendments and adaptations.

Symbol – none required.

Germany:

Water classification. WGK Number (Kenn-Nr): 1742. WGK Class (Wassergefährdungsklasse): nwg (non-hazardous to waters). Not a hazardous substance as defined by the Chemicals Act or Hazardous Substance Ordinance.

Canada:

Worker Hazardous Material Information System (WHMIS), Classification D2A.

Statement of Equivalence

“This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and MSDS contains all the information required by the Controlled Products Regulations.”

Ingredients Disclosure List

Contains carbon black. See Section 3.

United States:

Carbon black is not a dangerous substance under the following regulations: CERCLA (40, CFR 303), CWA (40 CFR 116), CAA 40 CFR.

Carbon black is on the Chemical Hazard Information Profile (CHIP) list under TSCA.

Superfund Amendments and Reauthorization Act (SARA) Title III

Section 313 Toxic Substances: Does not contain any components subject to this section.

OSHA, Hazard Communication Standard, 29 CFR 1910.1200

Toxic Release Inventory (TRI)

Under EPA’s Toxics Release Inventory (TRI) program the reporting threshold for 21 Polycyclic Aromatic Compounds (PACs) has been lowered to 100 pounds per year manufactured, processed, or otherwise used. (64 CFR 58666, Oct. 29, 1999) The 100 pounds/yr applies to the cumulative total of 21 specific PACs. Carbon black may contain certain of these PACs and the user is advised to evaluate their own TRI reporting responsibilities.

California Safe Drinking Water and Toxics Enforcement Act of 1986 (Proposition 65):

"Carbon black (airborne, unbound particles of respirable size)" is a California Proposition 65 listed substance.

Inventory Status:

All components either are listed on or exempt from the following inventories:

Europe: (EU): EINECS (European Inventory of Existing Commercial Chemical Substances), EINECS-RN: 215-609-9.

Australia: AICS (Australian Inventory of Chemical Substances)

Canada: CEPA (Canadian Environmental Protection Act), domestic substance list (DSL).

China: Inventory of Existing Chemical Substances

Japan: MITI (Ministry of International Trade and Industry) List of Existing Chemicals Substances. 10-3074/5-3328 and 10-3073/5-5222 (Section-Structure No./Class Reference No.)

Korea: TCC-ECL (Toxic Chemical Control Law Existing Chemical List) KE-04682

Philippine: Philippine Inventory of Chemicals and Chemical Substances (PICCS)

United States: SARA (Super Fund Amendments and Reauthorization Act), Sections 311/312 apply if carbon black is present at any one time in amounts equal to or greater than 10,000 pounds. Under Section 311/312 – MSDS requirements, carbon black is determined to be hazardous according to the following EPA hazard categories:

Immediate health hazard:	No
Delayed (chronic) health hazard:	Yes
Sudden release of pressure hazard:	No
Reactive hazard:	No

16.0 Other Information

National Fire Protection Association (NFPA) Rating:

Health: 0 Flammability: 1 Reactivity: 0

0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe

Hazardous Materials Identification System[®] (HMIS[®]) Rating:

Health: 1* (*designates chronic hazard) **Flammability: 1** **Physical Hazard: 0**

0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe

HMIS[®] is a registered trademark of the National Paint and Coatings Association.

In-Country Chemtrec Numbers	Local # Provided in Country	Toll Free in Country
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Argentina (Buenos Aires)	+(54)-1159839431	
Australia (Sydney)	+(61)-290372994	
Bahrain (Bahrain)	+(973)-16199372	
Brazil (Rio De Janeiro)	+(55)-2139581449	
Chile (Santiago)	+(56)-25814934	
China	4001-204937*	
Colombia		01800-710-2151
Czech Republic (Prague)	+(420)-228880039	
France	+(33)-975181407	
Germany		800-181-7059
Hong Kong (Hong Kong)		800-968-793
Hungary (Budapest)	+(36)-18088425	
India		000-800-100-7141
Indonesia		001-803-017-9114*
Israel (Tel Aviv)	+(972)-37630639	
Italy		800-789-767
Japan (Tokyo)	+(81)-345209637	
Malaysia		1-800-815-308
Mexico		01-800-681-9531*
Netherlands	+(31)-858880596	
Philippines		1-800-1-116-1020
Poland (Warsaw)	+(48)-223988029	
Singapore	+(65)-31581349	
South Africa		0-800-983-611*
South Korea		00-308-13-2549*
Spain		900-868538
Sweden (Stockholm)	+(46)-852503403	
Taiwan		00801-14-8954*
Thailand		001-800-13-203-9987
UK (London)	+(44)-870-8200418	
Vietnam (Ho Chi Minh City)	+(84)-838012436	

***Must be dialed from within country**

Sources of Reference Materials:

- 1) Baan, R. Carcinogenic Hazards from Inhaled Carbon Black, Titanium Dioxide, and Talc not Containing Asbestos or Asbestiform Fibers: Recent Evaluations by an IARC Monographs Working Group. *Inhalation Toxicology*, 19 (Suppl. 1); 213-228 (2007).
- 2) UN: *Globally harmonized system of classification and labelling of chemicals (GHS)*. Revision 3, 2009. http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html.)
- 3) EU: *Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006*. 2008:1-1355. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:EN:PDF>
- 4) *Guidance to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures*. 14 May 2009- IHCP, DG Joint Research Centre, European Commission http://ecb.jrc.ec.europa.eu/documents/Classification-Labelling/CLP_Guidance_to_Regulation.pdf
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The data and information presented herein corresponds to the present state of our knowledge and experience and is intended to describe our product with respect to possible occupational safety and health concerns. The user of this product has sole responsibility to determine the suitability of the product for any use and manner of use intended, and for determining the regulations applicable to such use in the relevant jurisdiction. This MSDS is updated on a periodic basis in accordance with applicable health and safety standards.

Prepared by: Cancarb - Safety, Health and Environmental Department
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