SAFETY DATA SHEET

Prepared in accordance with the Canada's Workplace Hazardous Materials Information System (WHMIS 2015)

CARBON BLACK

SECTION 1: Identification

1.1 GHS Product Identifier

Chemical name: Carbon black

Other means of identification:

Birla Carbon™
3031
3034
3035
3051

1.2 Recommended use of the chemical — Additive/filler for plastic and rubber, pigment, chemical reagent, refractories, various.

1.3 Restrictions on use — Not recommended for use as a human tattoo pigment.

1.4 Supplier — See Section 16

Birla Carbon U.S.A., Inc.
1800 West Oak Commons Court
Marietta, Georgia 30062, USA
+1 (770) 792-9400
bc.hse@adityabirla.com

1.5 Emergency Telephone Numbers

Global Incident Response Hotline					
Argentina	+54 11 5219 8871	China/Asia Pacific	+86 4001 2035 72	Americas	+1 760 476 3961
Australia	+61 280 363 166	Korea	+82 070 4732 5813	Asia Pacific	+1 760 476 3960
Brazil	+55 11 4349 1907	Mexico	+52 55 41696225	Europe	+1 760 476 3962
Chile	+56 44 8905208	Peru	+51 1 708 5593	Middle East/Africa	+1 760 476 3959
Colombia	+57 601 344 1317	Thailand	+66 2105 6177	Non-Region Specific	+1 760 476 3971
China	+86 4001 2001 74	United Kingdom	+0 800 680 0425	US & Canada	+1 866 519 4752

SECTION 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

Canada: According to the criteria in the Canadian Hazardous Product Regulation (HPR) known as Worker Hazardous Material Information System 2015 (WHMIS 2015) carbon black is not classified for any health hazards. Carbon Black is classified as a Combustible Dust.

GHS: According to the criteria in GHS (7th Revised Edition) for classifying hazardous substances, Carbon Black is not classified for any physico-chemical, toxicological or eco-toxicological endpoint. See 2.4 "Other Hazards"

2.2 GHS Label Elements

Signal word:	WARNING
Hazard statements:	May form combustible dust concentrations in air.
Pictogram:	None. Not currently available for combustible dust hazard.
Precautionary statements:	Keep away from all ignition sources including heat, sparks, and flame. Prevent dust accumulations to minimize explosion hazard. Control dust exposures to below applicable occupational exposure limits.

2.3 Hazards Not Otherwise Classified (HNOC): Carbon black may form an explosible dust-air mixture if dispersed. Carbon black can burn or smolder at temperatures greater than 400ºC (>752ºF) releasing hazardous products such as carbon monoxide (CO), carbon dioxide, and oxides of sulfur. Effective engineering practices, good housekeeping practices, and effective dust removal systems are necessary to minimize carbon black emissions and resultant build-up on horizontal and vertical surfaces. Fugitive carbon black emissions should be minimized and housekeeping practices should be instituted.

2.4 Other Hazards

Eye: May cause reversible mechanical irritation.

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

Inhalation: Dust may be irritating to the respiratory tract. Provide local exhaust ventilation. See Section 8.

Ingestion: Adverse health effects are not expected.

Carcinogenicity: Carbon black is listed by the International Agency for Research on Cancer (IARC) as a Group 2B substance (*possibly carcinogenic to humans).* See Section 11.

SECTION 3: Composition/information on ingredients

3.1 Substance

Carbon Black (amorphous)100%

Common name(s), synonym(s) of the substance: furnace black

CAS number and other unique identifiers for the substance

CAS number: 1333-86-4
EINECS-RN: 215-609-9

SECTION 4: First-aid measures

4.1 Description of first-aid measures

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 persist, seek medical attention.

Eye: Rinse eyes thoroughly with large volumes of water keeping eyelids 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 Most important symptoms, both acute and delayed

Symptoms: Irritating to the eyes and respiratory tract if exposed above the occupational exposure limits. See Section 2.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physicians: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use foam, carbon dioxide (CO_2), dry chemical, or water fog. A fog spray is recommended if water is used.

Unsuitable extinguishing media: Do not use high pressure media which could cause the formation of a potentially explosible dust-air mixture.

5.2 Special hazards arising from the substance or mixture

Special hazards arising from the chemical: 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 closely observed for at least 48 hours to ensure no smoldering material is present.

Hazardous Combustion Products: Carbon monoxide (CO), carbon dioxide (CO_2), and oxides of sulfur.

5.3 Advice for fire fighters

Special protective equipment for fire-fighters: Wear full protective firefighting gear, including self-contained breathing apparatus (SCBA). Wet carbon black produces very slipper walking surfaces.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Wet carbon black produces slippery walking surfaces. Avoid dust formation. Wear appropriate personal protective equipment and respiratory protection. See Section 8.

For emergency responders: Use personal protective equipment recommended in section 8.

6.2 Environmental precautions

Environmental precautions: Carbon black poses no significant environmental hazards. Contain spilled product on land, if possible. As a matter of good practice, minimize contamination of sewage water, soil, groundwater, drainage systems, or bodies of water.

6.3 Methods and materials for containment and cleaning up

Methods for containment: Prevent further leakage or spillage if safe to do so.

Methods for cleaning up: Small spills should be vacuumed when possible. Dry sweeping is not recommended. A vacuum equipped with high efficiency particulate air (HEPA)

filtration is recommended. If necessary, light water spray will reduce dust for dry sweeping. Large spills may be shoveled into containers. See Section 13.

6.4 Reference to other sections

Reference to other sections: See section 8. See section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Avoid dust formation. Do not breathe dust. Provide appropriate local exhaust to minimize dust formation. Do not use compressed air.

Take precautionary measures against static discharges. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Grounding of equipment and conveying systems may be required under certain conditions. Safe work practices include the elimination of potential ignition sources in proximity to carbon black dust; good housekeeping to avoid accumulations of dust on all surfaces; appropriate exhaust ventilation design and maintenance to control airborne dust levels to below the applicable occupational exposure limit. If hot work is required, the immediate work area must be cleared of carbon black dust.

General hygiene considerations: Handle in accordance with good industrial hygiene and safety practices.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Keep in a dry, cool, and well-ventilated location. Store away from heat, ignition sources, and strong oxidizers.

Carbon black is not classifiable as a Division 4.2 self-heating substance under the UN test criteria. However, current UN criteria for determining if a substance is self-heating is volume dependent. This classification may not be appropriate for large volume storage container.

Before entering vessels and confined spaces containing carbon black, test for adequate oxygen, flammable gases and potential toxic air contaminants. Do not allow dust to accumulate on surfaces.

Incompatible materials: Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Exposure limit values

Canada:	3.0 mg/m^3 TWA, inhalable
Mexico:	3.5 mg/m^3 TWA
US ACGIH - TLV:	3.0 mg/m^3 TWA, inhalable
US OSHA - PEL:	3.5 mg/m^3 TWA, inhalable

8.2 Exposure controls

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

Personal Protective Equipment (PPE)

Respiratory: Approved air purifying respirator (APR) 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.

When respiratory protection is required to minimize exposures to carbon black, programs should follow the requirements of the appropriate governing body for the country, province or state. Selected references to respiratory protection standards are provided below:

- OSHA 29CFR1910.134, Respiratory Protection
- CR592 Guidelines for Selection and Use of Respiratory Protective Devices (CEN)
- German/European Standard DIN/EN 143, Respiratory Protective Devices for Dusty Materials (CEN)

Hand protection:	Wear protective gloves. Use a barrier cream. Wash hands and skin with mild soap and water.
Eye/face protection:	Wear safety glasses or goggles.
Skin protection:	Wear general protective clothing to minimize skin contact. Wash clothing daily. Work clothes should not be taken home.
Other:	Emergency eyewash and safety showers should be in close proximity. Wash hands and face thoroughly with mild soap before eating or drinking.

Environmental exposure controls: In accordance with all local legislation and permit requirements.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	powder or pellet
Color:	black
Odor:	odorless
Odor threshold:	not applicable
Melting point/freezing point:	not applicable
Boiling point/range:	not applicable
Vapor pressure:	not applicable
Vapor Density:	not applicable
Oxidizing properties:	not applicable
Flash Point:	not applicable
Flammability:	not flammable
Explosive properties:	Dust may form explosible mixture in air
Explosion limits (air):	
Upper:	not available
Lower:	50 g/m^3 (dust)
Evaporation rate:	not applicable
Relative Density: (20ºC):	1.7 – 1.9 g/cm^3
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, 68ºF (20ºC)]
Partition coefficient (n-octanol/water):	not applicable
Viscosity:	not applicable
Decomposition temperature:	not applicable
Auto-ignition temperature:	>400ºC

Minimum Ignition temperature:	>600ºC(BAM Furnace) (ASTM 1491-97)
Minimum Explosible Concentration:	60-500 g/m^3 (ASTM E1515)
Minimum ignition energy:	>0.5 kJ (ASTM E2019-03)
Ignition energy:	not available
Maximum absolute explosion pressure:	6-10 bar (VDI 2263 and ASTM E1226-10)
Maximum rate of pressure rise:	30-400 bar/sec (VDI 2263 and ASTM E1226-88)
Burn Velocity:	> 45 seconds (not classified as “highly flammable” or “easily ignitable”)
Kst Value:	20-100 bar-m/sec
Dust explosion classification:	ST1
Decomposition temperature:	not applicable

9.2 Other information

Particle characteristics: Nanoform (Spherical, Amorphous, No Surface Treatment)

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactivity: May react exothermically upon contact with strong oxidizers.

10.2 Chemical stability

Stability: Stable under normal ambient conditions.

Explosion data

Sensitivity to mechanical impact: Not sensitive to mechanical impact

Sensitivity to static discharge: Dust may form explosible mixture in air. Avoid dust formation. Do not create a dust cloud. Take precautionary measures against static discharges. Ensure all equipment is earthed/grounded before beginning transfer operation.

10.3 Possibility of hazardous reactions

Hazardous polymerization: Does not occur.

Possibility of hazardous reactions: None under normal conditions.

10.4 Conditions to avoid

Conditions to avoid: Avoid high temperatures >400°C (>752°F) and sources of ignition.

10.5 Incompatible materials

Incompatible materials: Strong oxidizers.

10.6 Hazardous decomposition products

Hazardous decomposition products: Carbon monoxide, carbon dioxide, organic products of combustion, oxides of sulfur.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute Toxicity:

Oral LD50: LD_{50} (rat) > 8000 mg/kg. (Equivalent to OECD TG 401)

Inhalation LD50: No data available

Dermal LD50: No data available

Skin corrosion/irritation: Rabbit: not irritating. (Equivalent to OECD TG 404)

Edema = 0 (max. attainable irritation score: 4)
Erythema = 0 (max. attainable irritation score: 4)
Assessment: Not irritating to skin.

Serious eye damage/irritation:

Rabbit: not irritating. (OECD TG 405)
Cornea: 0 (max. attainable irritation score: 4)
Iris: 0 (max. attainable irritation score: 2)
Conjunctivae: 0 (max. attainable irritation score: 3)
Chemosis: 0 (max. attainable irritation score: 4)
Assessment: Not irritating to the eyes.

Sensitization:

Guinea pig skin (Buehler Test): Not sensitizing (OECD TG 406)
Assessment: Not sensitizing in animals.
No cases of sensitization in humans have been reported.

Germ cell mutagenicity:

In vitro: Carbon black is not suitable to be tested directly in bacterial (Ames test) and other *in vitro* systems because of its insolubility. However, when organic solvent extracts of carbon black have been tested, results showed no mutagenic effects. Organic solvent extracts of carbon black can contain traces of polycyclic aromatic hydrocarbons (PAHs). A study to examine the bioavailability of these PAHs showed that they are very tightly bound to carbon black and are not bioavailable (Borm, 2005).

In vivo: In an experimental investigation, mutational changes in the *hprt* ene were reported in alveolar epithelial cells in the rat following inhalation exposure to carbon black (Driscoll, 1997). This observation is considered to be rat-specific and a consequence of "lung overload," which leads to chronic inflammation and release of reactive oxygen species. This is considered to be a secondary genotoxic effect and, thus, carbon black itself would not be considered to be mutagenic.

Assessment: *In vivo* mutagenicity in rats occurs by mechanisms secondary to a threshold effect and is a consequence of "lung overload," which leads to chronic inflammation and the release of genotoxic oxygen species. This mechanism is considered to be a secondary genotoxic effect and, thus, carbon black itself would not be considered to be mutagenic.

Carcinogenicity:

Animal 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.

Rat, inhalation, duration 2 years.
Target organ: lungs.
Effect: inflammation, fibrosis, tumors.

Note: Tumors in the rat lung are considered to be related to "lung overload" 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 (ILSI, 2000). 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.

Mortality studies (human data)
A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study), found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (Dell, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was *inadequate* (IARC, 2010).

Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington.

Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

IARC cancer classification
In 2006 IARC re-affirmed its 1995 finding that there is *"inadequate evidence"* from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is *"sufficient evidence*" in experimental animal studies for the carcinogenicity of carbon black. IARC's overall evaluation is that carbon black is *"possibly carcinogenic to humans (Group 2B)".* This conclusion was based on IARC's guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was *"sufficient evidence"* that carbon black extracts can cause cancer in animals (Group 2B).

ACGIH cancer classification
Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

Assessment: Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rat tumors are a result of a secondary non-genotoxic mechanism associated with the phenomenon of lung overload. This is a species-specific mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity – Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk of carcinogenicity.

Reproductive and developmental toxicity: Assessment: No effects on reproductive organs or fetal development have been reported in long-term repeated dose toxicity studies in animals.

Specific target organ toxicity – single exposure (STOT-SE): Assessment: Based on available data, specific target organ toxicity is not expected after single oral, single inhalation, or single dermal exposure.

Specific target organ toxicity – repeated exposure (STOT-RE):

Animal toxicity

Repeated dose toxicity: inhalation (rat), 90 days, No Observed Adverse Effect Concentration (NOAEC) = 1.1 mg/m^3 (respirable)

Target organ/effects at higher doses are lung inflammation, hyperplasia, and fibrosis.

Repeated dose toxicity: oral (mouse), 2 yrs, No Observed Effect Level (NOEL) = 137 mg/kg (body wt.)

Repeated dose toxicity: oral (rat), 2 yrs, NOEL = 52 mg/kg (body wt.)

Although carbon black produces pulmonary irritation, cellular proliferation, fibrosis, and lung tumors in the rat under conditions of lung overload, there is evidence to demonstrate that this response is principally a species-specific response that is not relevant to humans.

Morbidity studies (human data)

Results of epidemiological studies of carbon black production workers suggest that cumulative exposure to carbon black may result in small, non-clinical decrements in lung function. A U.S. respiratory morbidity study suggested a 27 ml decline in FEV_1 from a 1 mg/m^3 8 hour TWA daily (inhalable fraction) exposure over a 40-year period (Harber, 2003). An earlier European investigation suggested that exposure to 1 mg/m^3 (inhalable fraction) of carbon black over a 40-year working lifetime would result in a 48 ml decline in FEV_1 (Gardiner, 2001). 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.

In the U.S. study, 9% of the highest non-smokers 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.

Assessment:

Inhalation - Applying the guidelines of self-classification under GHS, carbon black is not classified under STOT-RE for effects on the lung. Classification is not warranted on the basis of the unique response of rats resulting from "lung overload" following exposure to poorly soluble particles such as carbon black. The pattern of pulmonary effects in the rat, such as inflammation and fibrotic responses, are not observed in other rodent species, non-human primates, or humans under similar exposure conditions. Lung overload does not appear to be relevant for human health. Overall, the epidemiological evidence from well-conducted investigations has shown no causative link between carbon black exposure and the risk of non-malignant respiratory disease in humans. A STOT-RE classification for carbon black after repeated inhalation exposure is not warranted.

Oral: Based on available data, specific target organ toxicity is not expected after repeated oral exposure.

Dermal: Based on available data and the chemical-physical properties (insolubility, low absorption potential), specific target organ toxicity is not expected after repeated dermal exposure.

Aspiration hazard: Assessment: Based on industrial experience and the available data, no aspiration hazard is expected.

11.2. Information on other hazards

Other adverse effects: No information available.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

Acute fish toxicity:	LC50 (96 hr) > 1000 mg/l. (Method: OECD 203) - Brachydanio rerio.
Acute invertebrate toxicity:	EC50 (24 hr) > 5 600 mg/l. (Method: OECD 202). Daphnia magna.
Acute algae toxicity:	EC50 (72 hr) >10,000 mg/l, NOEC 10,000 mg/l, Species: *Scenedesmus subspicatus*, Method: OECD 201.
Activated sludge:	EC0 (3 hr) > 400 mg/l, EC10 (3h): ca. 800 mg/l, Method: DEV L3 (TTC test).

12.2 Persistence and degradability

Not soluble in water. Expected to remain on soil surface. Not expected to degrade.

12.3 Bioaccumulative potential

Not expected because of the physicochemical properties of the substance.

12.4 Mobility in soil

Not expected to migrate. Insoluble.

12.5 Results of PBT and vPvB assessment

Carbon black is not a PBT or a vPvB.

12.6 Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1 Product disposal

Product should be disposed of in accordance with the regulations issued by the appropriate federal, provincial, state, and local authorities.

Canada:	Not a hazardous waste under provincial regulations
USA:	Not a hazardous waste under U.S. RCRA, 40 CFR 261.

13.2 Container/Packaging disposal

Empty packaging must be disposed of in accordance with national and local laws.

SECTION 14: Transport information

The International Carbon Black Association organized the testing of seven ASTM reference carbon blacks according to the UN method, Self-Heating Solids. All seven reference carbon blacks were found to be “Not a self-heating substance of Division 4.2.” The same carbon blacks were tested according to the UN method, Readily Combustible Solids and found to be “Not a readily combustible solid of Division 4.1;” under current UN Recommendations on the Transport of Dangerous Goods.

The following organizations do not classify carbon black as a “hazardous cargo” if it is “carbon, non-activated, mineral origin.” Birla Carbon’s carbon black products meet this definition.

	DOT	IMDG	RID	ADR	ICAO (air)	IATA
14.1	UN/ID No		Not regulated			
14.2	Proper shipping name		Not regulated			
14.3	Hazard class		Not regulated			
14.4	Packing group		Not regulated			

SECTION 15: Regulatory information

15.1 Hazard Classification

Canada: WHMIS 2015: Hazardous

International Inventories

Carbon black, CAS number 1333-86-4, appears on the following inventories:

Australia:	AICIS
Canada:	DSL
China:	IECSC
Europe (EU):	EINECS (EINECS-RN: 215-609-9)
Japan:	ENCS
Korea:	KECI
Philippines:	PICCS
Taiwan:	TCSI
New Zealand:	NZIoC
USA:	TSCA
Thailand:	TECI

United States

SARA 313 (TRI): Carbon black is not a SARA 313 chemical.

The reporting threshold for 21 Polycyclic Aromatic Compounds (PACs) has been lowered to 100 pounds per year manufactured, processed, or otherwise used. (64 Fed. Reg. 58666 (Oct. 29, 1999).) The 100 pounds/yr applies to the cumulative total of 21 specific PACs. Section 1.5.1 indicates that the *de minimis* exemption (i.e., disregarding amounts less than 0.1%) has been eliminated for PACs. Carbon black may contain certain of these PACs and the user is advised to evaluate their own TRI reporting responsibilities. (Note: Benzo (g,h,i) perylene is listed separately and has a 10 lb. reporting threshold.)

SARA 311/312: applies if carbon black is present at any one time in amounts equal to or greater than 10,000 pounds.

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

California Proposition 65:

WARNING: 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. Certain polycyclic aromatic hydrocarbons (PAHs) that may be found adsorbed onto the surface of carbon black are California Proposition 65 listed substances. Certain metals, including arsenic, cadmium, lead, mercury, and nickel, may be present on and/or in carbon black and are California Proposition 65 listed substances. “Carbon-black extracts” is a California Proposition 65 listed substance.”

Canada

Worker Hazardous Material Information System (WHMIS), Classification Combustible Dust

Statement of Equivalence: "This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations."

Ingredients Disclosure List: Contains carbon black. See Section 2.

SECTION 16: Other Information

Contact Information

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Borm, P.J.A., Cakmak, G., Jermann, E., Weishaupt C., Kempers, P., van Schooten,FJ., Oberdorster, G., Schins, RP. (2005) Formation of PAH-DNA adducts after in-vivo and vitro exposure of rats and lung cell to different commercial carbon blacks. Tox.Appl. Pharm. 1:205(2):157-67.

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Driscoll KE, Deyo LC, Carter JM, Howard BW, Hassenbein DG and Bertram TA (1997) Effects of particle exposure and particle-elicited inflammatory cells on mutation in rat alveolar epithelial cells. Carcinogenesis 18(2) 423-430.

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ILSI Risk Science Institute Workshop: The Relevance of the Rat Lung Response to Particle to Particle Overload for Human Risk Assessment. Inh. Toxicol. 12:1-17 (2000).

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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 health and safety 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 SDS is updated on a periodic basis in accordance with applicable health and safety standards.

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