



## **MATERIAL SAFETY DATA SHEET**

(ISO 11014-1 / ANSI Z 400.1-1998 / 2001/58/EC)

### **Carbon Black**

#### **1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY UNDERTAKING**

- 1.1 Product information: Product name (as used on product label): Carbon Black – Grades N-120, N-234, N-326, N-330, LH30, N-339, N-351, N-550, N-650, N-660, N-683, N-762, N-774.
- 1.2 Manufacturer/supplier: KINEMATICS INC.  
5761 Schaefer Ave, Chino, California- USA
- 1.3 Phone number : +1 630 444 7528
- 1.4 Use of substance/preparation : Used as filler in rubber products, pigment in polymers and printing inks.

#### **. 2. HAZARDS IDENTIFICATION**

##### **2.1 Emergency Overview [EU: Most Important Hazards]**

A black, odorless, insoluble, powder 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.



## 2.2 Regulatory Status:

- 2.2.1 EU Not defined as a dangerous substance or preparation according to Council Directive 67/548/EEC and its various amendments and adaptations
- 2.2.2 WHMIS This material is classified as D2A under Canadian Worker Hazardous Materials Information System (WHMIS) criteria.
- 2.2.3 OSHA Classified as hazardous. See 29 CFR 1910.1000, Table Z-1

## 2.3 Potential Health Effects

Routes of Exposure : Inhalation, Eye, Skin

Note: Ingestion of carbon black is not considered a likely route of exposure.

2.3.1. Acute Effects: Acute Inhalation. Temporary discomfort to upper respiratory tract may occur due to mechanical irritation when exposures are well above the occupational exposure limit.

- Acute Ingestion No evidence of adverse effects from available data.
- Acute eye High dust concentrations may cause mechanical irritation to eye.
- Acute skin May cause mechanical irritation, soiling, and skin drying.
- Sensitization No cases of sensitization in humans have been reported.

### 2.3.2 Chronic Effects

Inhalation Long-term exposure below the occupational exposure limit of  $3.5 \text{ mg/m}^3$  (when measured as "total dust" may result in a small loss in one aspect of lung function ( $\text{FEV}_1$ ) over a working lifetime.



#### Carcinogenicity

IARC listed; *Group 2B (possibly carcinogenic to humans)*. Not listed as a carcinogen by NTP, ACGIH, OSHA or the European Union. There are no known human carcinogenic effects related to the PAH content of carbon blacks. Recent research has shown that the PAH content of carbon blacks is not released in biological fluids and thus not available for biological activity.

#### 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. COMPOSITION/INFORMATION ON INGREDIENTS

#### Component(s)

Carbon Black, Amorphous (>98%)

Chemical formula: C

CAS number: 1333-86-4

European Inventory of Existing Chemical Substances (EINECS) number: 215-609-9EU  
Classification: Not Classified



#### 4. FIRST-AID MEASURES

##### 4.1 First aid procedures:

Inhalation	Take affected persons out in 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, rinse mouth with water. Never give anything by mouth to an unconscious person.
Note to physicians	Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

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 on package and MSDS). See Section 9, Chemical and Physical Properties.



Extinguishing Media : Use foam, carbon dioxide (CO<sub>2</sub>), dry chemical, or water fog.  
DO NOT USE high pressure water stream as this may spread burning powder (burning powder will float).

Protection of Firefighters :

Wear full protective firefighting gear (Bunker gear) including self-contained breathing apparatus (SCBA). Special hazards arising from the  
(e.g. nature of any hazardous combustion products) include carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), and oxides of sulfur. NOTE: Wet carbon black produces slippery walking surfaces.

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear appropriate personal protective equipment and respiratory protection. See section 8.3
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.
Methods for Containment	Carbon black is not a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302), or the Clean Water Act (40 CFR 116), or a hazardous air pollutant under the Clean Air Act Amendments of 1990 (CAAA-90, 40 CFR 63).



#### Methods for Cleaning Up

Small spills should be vacuumed when possible. Dry sweeping is not recommended except with HEPA equipped machinery. A vacuum equipped with HEPA (high efficiency particulate air) filtration is 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.

## 7. HANDLING AND STORAGE

#### Handling

Avoid dust exposures above the occupational exposure limit.

Use local exhaust ventilation to control exposures to below occupational exposure limit. Avoid contact with skin and eyes. If exposed, wash to avoid mechanical irritation and soiling.

Dust may cause electrical shorts and is capable of penetrating electrical equipment unless tightly sealed. 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.

#### Storage

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

Before entering closed vessels and confined spaces containing carbon black test for adequate oxygen percent content, flammable gases and potential toxic air contaminants (e.g., CO, SO<sub>2</sub>). Follow safe practices when entering confined spaces.



## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Engineering Controls

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

### 8.2 Personal Protective Equipment

#### Respiratory

Approved respirators should be used where airborne concentrations are expected to exceed occupational exposure limits.

#### Hand Protection

Wash hands and other exposed skin with mild soap. Use of a barrier cream may help to prevent skin drying. General protective gloves may be used to protect hands from carbon black soiling.

#### Eye Protection

Wear safety glasses or goggles.

#### Skin Protection

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

#### General Hygiene Considerations

Emergency eyewash and safety shower should be in close proximity. Wash hands and face thoroughly with mild soap before eating and drinking.



## 9. 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) density:	1.7 – 1.9 g/mlBulk 200-680 kg/m <sup>3</sup>
Solubility (in Water)	Insoluble
pH value: (ASTM 1512)	>7 [50 g/l water, 68oF (20oC)]
Partition coefficient (n-octanol/water)	not applicable
Viscosity	not applicable
Decomposition temperature	572°F (300°C)
<u>Flammable and Explosive Properties</u>	
Flashpoint	not applicable
Flammability Classification (as defined by OSHA1910.1200))	not applicable
Explosive Limits (dust): -Furnace black: (VDI 2263)	
Lower	50 g/m <sup>3</sup>





-Thermal black: (VDI 2263)

Lower	375 g/m <sup>3</sup>
Upper	not determined
Dust Explosion Class (VDI 2263, EC 84/449)	ST 1
Maximum Absolute Explosion Pressure	10 bar
Maximum Rate of Pressure Rise	30-100 bar/sec
Spontaneous Ignition (Autoignition)	>284°F (>140°C)
Minimum Ignition Temperature (VDI 2263)	Godbert-Greenwald Furnace >600°F (>315°C)
BAM Furnace >932°F (>500°C)	
Minimum Ignition Energy	>10 J
Burn Rate (VDI 2263, EC 84/449)	>45 seconds  (not classifiable as “Highly Flammable”, or “Easily Ignitable”)

## 10. STABILITY AND REACTIVITY

Stability	stable under normal ambient conditions
Conditions to avoid	prevent exposure to high temperatures and open flames
Materials to avoid	strong oxidizers such as chlorates, bromates, and nitrates
Hazardous decomposition products	Carbon monoxide, carbon dioxide, organic products of decomposition, oxides of sulfur (sulfoxides) form if heated above decomposition temperature.
Hazardous polymerization	will not occur



## 11. TOXICOLOGICAL INFORMATION

### 11.1 Acute toxicity

Acute oral toxicity

LD<sub>50</sub> (rat), > 8000 mg/kg

Primary skin irritation:

rabbit:

non-irritative, index score 0.6/8 (4.0 = severe edema)

Primary eye irritation

rabbit:

non-irritative, Draize score 10-17/110  
(100 = maximally irritating)

### 11.2 Subchronic toxicity:

Rat, inhalation, duration 90  
days

NOAEL - 1.0 mg/m<sup>3</sup> (respirable)

Target organ: lungs

Effect: inflammation, hyperplasia, fibrosis

### 11.3 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

Rat, inhalation,  
duration 2 years

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.



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

#### 11.5 Carcinogenicity

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

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 species exhibits carcinogenicity in two or more studies.

Carbon Black is not a hazardous substance or preparation according to the Global Harmonization System (GHS).

### 13. DISPOSAL CONSIDERATIONS

13.1 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 authorities.

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
U.N	United Nations (no U.N. Number)



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. TRANSPORT INFORMATION:** Carbon black is not restricted for transport by the following regulations:

- Canadian Transport of Dangerous Goods (TDG)
- European Carriage of Dangerous Goods by Rail (RID), by Road (ADR), or on the Rhine (ADNR)
- International Air Transport Association (IATA)  
Note: listed as “carbon black, non-activated, mineral origin”
- International Civil Air Organization-Technical Instructions (ICAO-TI)  
Note: listed as “carbon black, non-activated, mineral origin”
- International Maritime Dangerous Goods Code (IMDG)  
Note: listed as “carbon black, non-activated, mineral origin”
- United Nations Recommendations on the Transport of Dangerous Goods
- United States Department of Transportation Hazardous Materials Regulations (DOT)
- International Civil Air Organization-Technical Instructions (ICAO-TI)  
Note: listed as “carbon black, non-activated, mineral origin”
- International Maritime Dangerous Goods Code (IMDG)  
Note: listed as “carbon black, non-activated, mineral origin”



- United Nations Recommendations on the Transport of Dangerous Goods
- United States Department of Transportation Hazardous Materials Regulations (DOT)

## 15. REGULATORY INFORMATION

### European Union

#### Label Information

Carbon black is not defined as a dangerous substance or preparation according to Council Directive

67/548/EEC and its various amendments and adaptations. Carbon black is subject to REACH regulations depending upon the importer status within the regulations.

Symbol – non required.

### Germany

#### Water Classification

WGK Number (Kenn-Nr): 1742

WGK Class: nwg (non- hazardous to waters)

### Canada

Worker Hazardous Material Information System

(WHMIS), Classification D2A

(See label information Section 16.4)

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 2



United States

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:

May contain any components subject to this section.

Toxic Release Inventory (TRI), Form R's: 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 (defined as 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

CHINO, CALIFORNIA- USA

---



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-04882
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. OTHER INFORMATION

### 16.1 Polycyclic Aromatic Hydrocarbon (PAH) Content

Manufactured carbon blacks generally contain less than 0.1% of solvent extractable polycyclic aromatic hydrocarbons (PAH). Solvent extractable PAH content depends on numerous factors including, but not limited to, the manufacturing process, desired product specifications, and the analytical procedure used to measure and identify solvent extractable materials.

Questions concerning PAH content of carbon black and analytical procedures should be addressed to your carbon black supplier.

### 16.2 National Fire Protection Association (NFPA) Rating:

Health: 0  
Flammability: 1  
Reactivity: 0  
0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe

### 16.3 Hazardous Materials Identification System<sup>®</sup> (HMIS<sup>®</sup>) Rating:

Health: 1\* (\*designates chronic hazard)  
Flammability: 1  
Physical Hazard: 0  
0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe

HMIS<sup>®</sup> is a registered trademark of the National Paint and Coatings Association

### 16.4 WHMIS Label Information:







## **CARBON BLACK**

**May cause discomfort to the respiratory tract, skin and eyes. The International Agency for Research on Cancer has classified carbon black as possibly carcinogenic to humans based on laboratory animal inhalation studies.**

**Avoid breathing dust and prolonged contact with skin and eyes. Use only with adequate ventilation. Wear suitable protective clothing, gloves, and eye protection. In case of contact: Wash skin thoroughly with soap and water. Flush eyes with plenty of water. See Material Safety Data Sheet for important additional information.**

*All information contained herein is reliable and is provided on a good faith basis. This information is without any express or implied guarantee and no responsibility is assumed for any loss, damage, or expense, direct or consequential, arising out of their use.*