Safety Data Sheet

according to 29 CFR 1910.1200(g)

RAVEN 410 Carbon Black

1. Identification

Product identifier

RAVEN 410 Carbon Black

CAS No: 1333-86-4

Details of the supplier of the safety data sheet

Company name:	Powder Technology Inc.
Street:	1300 Grey Fox Road
Place:	USA-55112 Arden Hills, MN
Telephone:	+1 952 894 -8737
e-mail:	sales@powdertechnologyinc.com
Internet:	http://www.powdertechnologyinc.com

Emergency phone number: +1 952 894 -8737

Further Information

This safety data sheet was created by: ECI EnviroConsult Ingenieurbüro Dr. Lux e.K.

2. Hazard(s) identification

Classification of the chemical

Label elements

Signal word: Warning

Pictograms: exclamation mark

Hazard statements

Harmful if inhaled

Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a poison center/doctor if you feel unwell.

Hazards not otherwise classified

No information available.

3. Composition/information on ingredients

Substances

Chemical characterization

carbon black with <0,1 wt% PAH

4. First-aid measures

Description of first aid measures

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration.

After contact with skin

After contact with skin, wash immediately with: Water and soap. In case of skin irritation, seek medical

treatment.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. In case of eye irritation consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Foam Carbon dioxide (CO2) Extinguishing powder. Water fog.

Unsuitable extinguishing media

High power water jet. High power water jet.

Specific hazards arising from the chemical

In case of fire may be liberated: Carbon monoxide. Carbon dioxide (CO2). Sulfur oxides.
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 48h to ensure no smoldering material is present.

Special protective equipment and precautions for fire-fighters

In case of fire: Wear self-contained breathing apparatus. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid generation of dust. Do not breathe dust. Special danger of slipping by leaking/spilling product.

Environmental precautions

No special environmental measures are necessary. Clean contaminated objects and areas thoroughly observing environmental regulations.

Methods and material for containment and cleaning up

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

7. Handling and storage

Precautions for safe handling

Advice on safe handling

Avoid generation of dust. Do not breathe dust. All work processes must always be designed so that the following is as low as possible: inhalation.

Advice on protection against fire and explosion

Avoid generation of dust. Keep away from sources of ignition. - No smoking. Fine dust may cause electrical shorts and is capable of penetrating electrical equipment unless tightly sealed.

Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Handle and open container with care. Keep container dry. Conditions to avoid: Dust deposits.

Advice on storage compatibility

Materials to avoid: Oxidizing agents, strong.

8. Exposure controls/personal protection

Control parameters

Additional advice on limit values

Germany: MAK: 1.0 mg/m³ TWA (respirable), 4.0 mg/m³ TWA (inhalable)

Exposure controls

Protective and hygiene measures

Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink.

Eye/face protection

Wear eye/face protection. Suitable eye protection: Tightly sealed safety glasses.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Suitable respiratory protective equipment: particulates filter device (DIN EN 143).

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state:	solid
Color:	black
Odor:	odourless

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point/freezing point:	not determined	
Initial boiling point and boiling range:	not determined	
Flash point:	not applicable	
Flammability		
Solid:	not determined	
Gas:	not applicable	
Lower explosion limits:	60 g/m³	
Upper explosion limits:	not determined	
Auto-ignition temperature		
Solid:	>140 °C	

Gas:	not applicable
Decomposition temperature:	300 °C

Oxidizing properties

Not oxidizing.

Vapor pressure:	not determined
Density:	1,9 g/cm³
Water solubility:	insoluble

Solubility in other solvents

not determined

Partition coefficient:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

Other information

Solid content:	100,00 %

10. Stability and reactivity

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stability: Stable

The product is stable under storage at normal ambient temperatures.

Possibility of hazardous reactions

Hazardous reactions: Will not occur

No information available.

Conditions to avoid

none

Incompatible materials

Oxidizing agents.

Hazardous decomposition products

Sulfur oxides. Carbon monoxide. Carbon dioxide.

11. Toxicological information

Information on toxicological effects

Route(s) of Entry

inhalation

Carcinogenic/mutagenic/toxic effects for reproduction

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. In its 1987 review IARC concluded, “There is sufficient evidence in experimental animals for the carcinogenicity of carbon black extracts.” Carbon black extracts are classified as, possibly carcinogenic to humans (Group 2B). Carbon black is not designated a carcinogen by the U.S. National Toxicology Program (NTP), the U.S. Occupational Safety and Health Administration (OSHA) or the European Union (EU). The American Conference of Governmental Industrial Hygienists classifies carbon black as A4, Not Classifiable as a Human Carcinogen. The U.S. National Institute of Occupational Safety and Health (NIOSH) 1978 criteria document on carbon black recommends that only carbon blacks with PAH contaminant levels greater than 0.1% require the measurement of PAHs in air. As some PAHs are possible human carcinogens, NIOSH recommends an exposure limit of 0.1 mg/m 3 for PAHs in air, measured as the cyclohexane-extractable fraction.

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.

Carcinogenicity (IARC): Carbon black (CAS 1333-86-4) is listed in group 2B.

Further information

Results of epidemiological studies of carbon black production workers suggest that cumulative exposure to carbon black may result in small decrements in lung function, as measured by FEV1. 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 an exposure to 1 mg/m 3 (inhalable fraction) of carbon black over a 40-year working-lifetime will result in a 48 ml decline in FEV1. In contrast, normal age related decline over a similar period of time would be approximately 1200 ml. The relationship between symptoms and exposure to carbon black is 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 drawing of definitive conclusions about symptoms. This study, however, indicated a link between carbon black and small opacities on chest films, with negligible effects on lung function. A study of carbon black workers in the UK showed an elevated incidence of lung cancer but it was not considered to be related to carbon black.

12. Ecological information

Ecotoxicity

The product is not: Ecotoxic.

Persistence and degradability

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

Bioaccumulative potential

The product has not been tested.

Mobility in soil

The product has not been tested.

Other adverse effects

No information available.

Further information

Avoid release to the environment.

13. Disposal considerations

Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

14. Transport information

US DOT 49 CFR 172.101

Proper shipping name: Not a hazardous material with respect to these transport regulations.

Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

Special precautions for user

No information available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

U.S. Regulations

National Inventory TSCA

Carbon black is registered in the TCSA.

State Regulations

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)

This product contains no chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other information

Hazardous Materials Information Label (HMIS)

Health:	*1
Flammability:	1
Physical Hazard:	0

NFPA Hazard Ratings

Health:	0
Flammability:	1
Reactivity:	0
Unique Hazard:	

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Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Other data

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.