SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product Identifier


Synonyms: CARBON BLACK


Recommended use of the product and restriction on use

Relevant identified uses: Pigments, Batteries, Additive for plastic and rubber, Chemical reagent, Refractories

Uses advised against: Use in tattoo inks

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Supplier:
Imerys Graphite & Carbon Belgium SA
Brownfieldlaan 19
2830 Willebroek Belgium
+32 (0)3 886 71 81
Fax: +32 (0)3 886 47 73
graphiteandcarbon.be@imerys.com

Emergency telephone number:
CHEMTREC
Within USA and Canada: 0800-424-9300
Outside USA and Canada: + 1 202-483-7616 or +1 703-741-5970 (collect calls accepted)

SECTION 2: HAZARD(S) IDENTIFICATION

GHS Classification
Not a hazardous substance or mixture. There is inadequate evidence in humans for the carcinogenicity of carbon black.

OSHA Regulatory Status
This substance is classified as hazardous as a combustible dust by the United States 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label elements

Hazard pictograms: None
Signal word Warning
Hazard Statements May form combustible dust concentrations in air
Precautionary Statements Keep away from all ignition sources including heat, sparks and flame Prevent dust accumulations to minimize explosion hazard

Hazards not otherwise classified (HNOC): Combustible dusts, potentially causing dust explosion, classified as Dust Explosion Class 1, with low explosion severity. Hazardous products of combustion can include carbon monoxide, carbon dioxide, oxides of sulfur, and organic products.
Other Hazards
Eye: May cause reversible mechanical irritation.
Skin: May cause mechanical irritation, soiling, and drying of skin.
Inhalation: Dust may be irritating to the respiratory tract. Provide local exhaust ventilation.
Ingestion: Adverse health effects are not expected.
Carcinogenicity: Carbon black is listed by the International Agency for Research as a Group 2B substance (possibly carcinogenic to humans) see section 11.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Description Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification</td>
</tr>
<tr>
<td>CAS number:</td>
</tr>
<tr>
<td>1333-86-4</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

<table>
<thead>
<tr>
<th>General notes</th>
<th>If symptoms persist, call a physician. Remove contaminated clothing and shoes</th>
</tr>
</thead>
<tbody>
<tr>
<td>After inhalation:</td>
<td>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.</td>
</tr>
<tr>
<td>After skin contact:</td>
<td>Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician.</td>
</tr>
<tr>
<td>After eye contact:</td>
<td>Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician</td>
</tr>
<tr>
<td>After swallowing:</td>
<td>Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person</td>
</tr>
</tbody>
</table>

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:
Eye contact may cause mechanical irritation through dust particles
Inhalation of dusts may irritate the respiratory tract

Delayed symptoms and effects:
Repeated and prolonged skin contact may cause removal of natural fat from the skin and irritation of the skin

Immediate medical attention and special treatment
Treat symptomatically.

Notes for the doctor:
Not determined or not applicable.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

| Suitable extinguishing media | CO₂, dry chemical, dry sand, alcohol-resistant foam |
| Unsuitable extinguishing media | Do not scatter spilled material with high pressure water streams |

Specific hazards during fire-fighting:
Thermal decomposition can lead to release of irritating and toxic gases and vapors, carbon oxides (CO₂)
Special protective equipment for firefighters

Carbon black does not burn with an open flame and fire may not be noticed until material is pocked to reveal visible sparks. Carbon black that has burnt once should be observed carefully for at least 48 hours. Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed in accordance with local regulations.

Special precautions:

Carbon monoxide and carbon dioxide may form upon combustion
Heating causes a rise in pressure, risk of bursting and combustion

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation, especially in confined areas.
Evacuate personnel to safe areas.
Use personal protection recommended in Section 8.
Avoid contact with skin, eyes or clothing.
Do not touch or walk through spilled material.
Remove all sources of ignition.
Avoid creating dust.
Caution: moist Carbon Black causes dangerously slick surfaces.

Environmental precautions

Should not be released into the environment.
Prevent from reaching drains, sewer or waterway.

Methods and material for containment and cleaning up:

Prevent further leakage or spillage, if safe to do so.
Do not dry sweep dust.
Wet dust with water before sweeping or use a vacuum to collect dust.
Take up mechanically, placing in appropriate containers for disposal.

Reference to other sections:

Not determined or not applicable.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:

Handle in accordance with good industrial hygiene and safety practice.
Ensure adequate ventilation, especially in confined areas.
Use personal protection recommended in Section 8.
Do not eat, drink or smoke when using this product.
Avoid contact with skin, eyes or clothing.
Remove contaminated clothing and shoes.
Wash contaminated clothing before reuse.
Dust can form an explosive mixture with air. Take measures against dust explosion.
Wash thoroughly after handling.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid generation of dust.
Take precautionary measures against static discharges.
Keep away from heat, sparks, flame and other sources of ignition.

Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations.
Keep container away from heat.
Keep containers tightly closed in a dry, cool and well-ventilated place.
**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

Only those substances with limit values have been included below.

<table>
<thead>
<tr>
<th>Country (Legal Basis)</th>
<th>Substance</th>
<th>Identifier</th>
<th>Permissible concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States (OSHA)</td>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>OSHA PEL TWA 3.5 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>NIOSH REL TWA 0.1 mg PAHs/m³ [Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs)]</td>
</tr>
<tr>
<td>NIOSH</td>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>NIOSH REL TWA 3.5 mg/m³ Ca</td>
</tr>
<tr>
<td>ACGIH</td>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>TLV-TWA 3.0 mg/m³</td>
</tr>
</tbody>
</table>

**Biological limit values:**
No biological exposure limits noted for the ingredient(s).

**Information on monitoring procedures:**
Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. Biological monitoring may also be appropriate for some substances.

**Appropriate engineering controls:**
Ensure adequate ventilation, especially in confined areas.

**Personal Protective Equipment**
- **Eye and face protection:** Wear safety glasses with side shields (or goggles).
- **Skin and body protection:** Select glove material impermeable and resistant to the substance.
- **Respiratory protection:** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General hygienic measures:**
Avoid contact with skin, eyes and clothing.
Wash hands before breaks and at the end of work.
Wash contaminated clothing before reuse.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance** Black powder / granulates
- **Odor** Odorless
- **Odor threshold** Not determined.
- **pH** 5 - 11 (ASTM D1512-05)
- **Melting point/freezing point** > 5432°F
- **Initial boiling point/range** > 5432°F
- **Flash point (closed cup)** Not applicable.
- **Evaporation rate** Not determined.
- **Flammability (solid, gas)** Not flammable.
- **Upper flammability/explosive limit** Not determined.
- **Lower flammability/explosive limit** Not determined.
- **Vapor pressure** Not applicable.
Vapor density Not determined.
Density 15.02 - 16.69 lbs. / gallon (77°F)
Relative density Not determined.
Solubilities Insoluble.
Partition coefficient (n-octanol/water) Not determined.
Auto/Self-ignition temperature > 932°F
Decomposition temperature > 752°F
Dynamic viscosity Not applicable.
Kinematic viscosity Not determined.
Oxidizing properties No oxidizing properties
Explosive properties Minimum ignition energy >10 J
Minimum cloud ignition temperature >1112°F
Kst-value: 77 bar.m/s

Dust explosion class 1

Other information

Flammability Limit in Air 50 g/m³
Bulk density 0.12 – 0.25 g/ml

SECTION 10: STABILITY AND REACTIVITY

Reactivity:
Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

Chemical stability:
Stable under normal conditions of use and storage.

Possibility of hazardous reactions:
None under normal conditions of use and storage.

Conditions to avoid:
Extremes of temperature and direct sunlight.

Incompatible materials:
Oxidizing agents.

Hazardous decomposition products:
None known based on information supplied. However, thermal decomposition can lead to release of irritating and toxic gases and vapors of carbon oxides (COx).

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>&gt;8000 mg/kg</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Serious eye damage/irritation
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.
Respiratory or skin sensitization

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met. The International Agency for Research on Cancer (IARC) evaluation (Monographs 65 & 93; 1996 & 2010 publications, respectively) concluded, “There is sufficient evidence in experimental animals for the carcinogenicity of carbon black.” But “inadequate evidence in humans for the carcinogenicity of carbon black”. IARC’s overall evaluation was that carbon black is possibly carcinogenic to humans (Group 2B). Carbon black has been the subject of extensive scientific health studies during the past several decades, as well as clinical and epidemiological studies of carbon black production workers. As a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated. Under the United Nations Global Harmonized System (GHS) framework, the ICBA International Carbon Black Association has determined that carbon black does not meet the criteria for classification as a human carcinogen.

Product data: No data available.

Substance data: No data available.

<table>
<thead>
<tr>
<th>Name</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Black</td>
<td>Carbon Black</td>
<td>The IARC carcinogenic classification and California Proposition 65 Warning only apply to airborne, unbound particles of respirable size of Carbon Black.</td>
</tr>
</tbody>
</table>

International Agency for Research on Cancer (IARC)

<table>
<thead>
<tr>
<th>Name</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Black</td>
<td>Group 2B - Possibly carcinogenic to humans</td>
</tr>
</tbody>
</table>

National Toxicology Program (NTP):

None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.
Information on likely routes of exposure:
No data available.

Symptoms related to the physical, chemical and toxicological characteristics:
No data available.

Other information:
No data available.

SECTION 12: ECOLOGICAL INFORMATION

Acute (short-term) toxicity
Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

Chronic (long-term) toxicity
Product data: No data available.
Substance data: No data available.

Persistence and degradability
Product data: No data available.
Substance data: No data available.

Bioaccumulative potential
Product data: No data available.
Substance data: No data available.

Mobility in soil
Product data: No data available.
Substance data: No data available.

Other adverse effects:
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods:
It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

SECTION 14: TRANSPORT INFORMATION

United States Transportation of dangerous goods (49 CFR DOT)

<table>
<thead>
<tr>
<th>UN number</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN transport hazard class(es)</td>
<td>None</td>
</tr>
<tr>
<td>Packing group</td>
<td>None</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>None</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>None</td>
</tr>
</tbody>
</table>
**SECTION 15: REGULATORY INFORMATION**

**United States regulations**

**Inventory listing (TSCA):** Following ingredients are Hazardous by definition of Hazard Communication Standard:

<table>
<thead>
<tr>
<th>UN number</th>
<th>Carbon Black</th>
<th>Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1333-86-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant New Use Rule (TSCA Section 5):** Not determined.

**Export notification under TSCA Section 12(b):** Not determined.

**SARA Section 311/312 hazards:**

<table>
<thead>
<tr>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Pressure</th>
<th>Reactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**SARA Section 302 extremely hazardous substances:** Not determined.

**SARA Section 313 toxic chemicals:** Not determined.

**CERCLA:** Not determined.

**RCRA:** Not determined.

**Section 112(r) of the Clean Air Act (CAA):** Not determined.

**New York Right to Know:** Not determined.

**Massachusetts Right to Know:**

<table>
<thead>
<tr>
<th>UN number</th>
<th>Carbon Black</th>
<th>Listed</th>
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</thead>
<tbody>
<tr>
<td>1333-86-4</td>
<td></td>
<td></td>
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</tbody>
</table>

**New Jersey Right to Know:**

<table>
<thead>
<tr>
<th>UN number</th>
<th>Carbon Black</th>
<th>Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1333-86-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pennsylvania Right to Know:**

<table>
<thead>
<tr>
<th>UN number</th>
<th>Carbon Black</th>
<th>Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1333-86-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**California Proposition 65:**

⚠️ **WARNING:** This product contains chemicals known to the State of California to cause cancer, birth defects or reproductive harm.
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 are California Proposition 65 listed substances. Carbon-black extracts is a California Proposition 65 listed substance.

For more information go to www.P65Warnings.ca.gov.

SECTION 16: OTHER INFORMATION

Initial preparation date: 29-May-2015
Revision date 19-Oct-2018
Revision note Updated Section 15: California Proposition 65 amended.

Abbreviations and Acronyms:
TWA - TWA (time-weighted average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - China Inventory of Existing Chemical Substances
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Disclaimer
This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 1-1-0
HMIS: 1-1-0

-------- End of Safety Data Sheet --------