

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

2.4 Other adverse effects

Flammable substance, with very low predisposition to self-ignition. Carbon black dust is hardly ignitable, but spreads fire well. With regard to very long induction time (ca 14 months), high ignition temperature and low content of volatile combustibles, Carbon black has very low predisposition to self-ignition as a result of oxidation by air oxygen. Settled dust is hardly ignitable, but spreads fire very readily. Product is not ignitable through electrostatic sparks up to 40 J of energy at standard conditions. Dust is non-explosive at initiatory energy up to 9 kJ.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical substance (CAS No. 1333-86-4, ES No 215-609-9)

4. FIRST AID MEASURES

4.1 General advice

In case of health troubles or doubts, seek medical advice immediately and show this Material Safety Data Sheet. Ensure activity of vitally important functions until the arrival of the doctor (artificial respiration, inhalation of oxygen, heart massage). If patient is unconscious, or in case of danger of blackout (apsychia), transport patient in a stabilised position. In case of first degree burns (painful redness), and second degree burns (painful blisters), cool the affected area with cold running water for a long time. In case of third degree burns (redness, cracking pale skin, usually without pain), do not cool affected skin, dress the area with sterile dry gauze only.

4.2 Inhalation

Remove patient to fresh air, rinse eyes, mouth and nasal cavity with lukewarm water, keep the patient warm and in order to rest quietly, avoid walking. Consult a doctor in case of persisting troubles.

SYMPTOMS AND EFFECTS: mechanical irritation

4.3 Skin contact

Take off immediately all contaminated clothing and footwear, flush effected area with copious quantities of lukewarm water and soap or another suitable cleaning agent (if the skin is not injured), and after complete washing use a mild cream to treat skin. Seek medical advice if symptoms of skin disorders occur.

SYMPTOMS AND EFFECTS: mechanical irritation

4.4 Eye contact

Immediately flush eyes with strong stream of clean lukewarm water and continue flushing for at least 15 minutes – keep the eyelids widely apart and flush thoroughly with mild water stream from the inner to the outer canthus. Seek medical advice.

SYMPTOMS AND EFFECTS: mechanical irritation

4.5 Swallowing

If patient is conscious and without convulsion, flush out mouth with water, do not try to induce vomiting. Never give anything by mouth to an unconscious person, just put patient into a stabilised position. If vomiting occurs spontaneously, put patient into a stabilised position to prevent aspiration of vomits. Seek medical advice.

SYMPTOMS AND EFFECTS: possible irritation

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

Water spray, foam.

5.2 Extinguishing media to be avoided

Water jet.

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

5.3 Caution about specific danger in case of fire and fire-fighting procedures

Generation of a pungent, irritating fume and possible emission of carbon monoxide.

5.4 Special protective equipment for fire-fighters

Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1 Person-related safety precautions

Isolate hazard area. Evacuate all unauthorised personnel not participating in rescue operations from the area. Avoid entry into danger area. Remove all possible sources of ignition. Stop traffic and switch off the motors of the engines. Do not smoke and do not handle with naked flame. Use explosion-proof lamps and non-sparking tools. Avoid contact with the substance. Apply recommended full protective personal equipment to paralyse the accident.

6.2 Precautions for protection of the environment

Prevent from further leaks of substance.

6.3 Recommended methods for cleaning and disposal

Sweep up spilled material and place into suitable dry container for further treatment or later disposal. Dispose of under valid legal waste regulations.

7. HANDLING AND STORAGE

7.1 Information for safe handling

Observe all fire-fighting measures (no smoking, do not handle with naked flame and remove all possible sources of ignition). Wear recommended personal protective equipment and observe instructions to prevent possible contact of substance with skin and eyes and inhalation. Avoid leak to environment.

7.2 Information for storage

Storerooms should meet the requirements for the fire safety of constructions and electrical facilities and should be in conformity with valid regulations. Store in dry, cool, well-ventilated place with effective exhaust, away from heat and all sources of ignition. Store in roofed areas protected from direct sunshine. Do not store together with water, oils, other flammable material or oxidizing agents. Product can be stored in undamaged containers during the whole lifetime of the packaging, if temperature does not exceed 63 °C. Product can be kept in dry environs without packaging for the period of 12 months, as far as temperature does not exceed 50 °C, but do avoid contact with water, oils or oxidising agents, and it is recommended to use this material preferably, to prevent initiation of a self-ignition process, if large amounts are stored. Avoid leak to environment.

7.3 Information for specific use

Not applicable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limit values

Czech Republic (Order-in-Council No 361/2007 Sb.):

| Name | PEL_r [mg.m ⁻³] | PEL_c [mg.m ⁻³] |
|--------------|----------------------------------|----------------------------------|
| carbon black | - | 2 |

PEL_r Permissible exposure level for respirable dust

PEL_c Permissible exposure level for total dust concentration

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

European Union (Directive 2006/15/EC): no limits set

Recommended determination method in the workplace atmosphere: gravity surveying, dust meter.

8.2 Occupational exposure controls

Collective protection measures

General and local ventilation, effective exhaust

Individual protection measures

Personal protective equipment (PPE) for the protection of eyes, hands and skin corresponding with the performed labour has to be kept at disposition for the employees. In cases, where the workplace exposure control limits cannot be observed with the help of technical equipment or where it is not possible to ensure that the respiratory system exposure does not represent a health hazard for the personnel, adequate respiratory protection have to be kept at disposition. In the case of continuous use of this equipment during constant work, safety breaks have to be scheduled, if the PPE-character requires this. All PPE have to be kept in disposable state and the damaged or contaminated equipment has to be replaced immediately.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

- *respiratory protection:* anti-dust respirator, self-contained breathing apparatus
- *eye protection:* safety goggles
- *hand protection:* protective gloves

| | <i>glove material</i> | <i>layer thickness</i> | <i>breakthrough time</i> |
|--|-----------------------|------------------------|--------------------------|
| routine work (possibility of staining) | natural latex | 1 mm | 480 Min. |
| outflow / accident disposal | nitrile | 0,4 mm | 480 Min. |

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374, for example KCL 395 Combi Latex (splash contact) and KCL 730 Camatril®Velours (outflow). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. The recommended time applies to the product stated in the safety data sheet as well as to the purpose specified here. Under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL CZ s.r.o., Suderova 2013, 709 00 Ostrava 9, www.klc.de.)

- *skin protection:* protective coveralls, sealed footwear
- *General safety and hygienic measures:* Observe personal hygienic regulations. Do not eat, drink or smoke during work! Wash thoroughly hands and uncovered body parts with soap and water after handling and before eating or drinking, and treat skin with a mild skin restoring cream.

8.3 Environmental exposure controls

Proceed in accordance with valid air and water legislative regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 General information

- *Physical state at 20°C:* solid
- *Colour:* black
- *Odour:* odourless

9.2 Important health, safety and environmental information

- *pH-value:* 6,5 - 9,5
- *Boiling point [°C]:* not applicable
- *Flash point (granules)[°C]:* to 600 no inflammation

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

| | |
|--|---------------------------------|
| • <i>Inflammability</i> | flammable |
| • <i>Explosion limits - lower [Vol.%]:</i> | at energy of 9 kJ not explosive |
| - <i>upper [Vol.%]:</i> | not applicable |
| • <i>Oxidising properties:</i> | none |
| • <i>Vapour pressure at 20°C [kPa]:</i> | not applicable |
| • <i>Density [kg.m⁻³]:</i> | 69-71 |
| • <i>Solubility</i> | not applicable |
| • <i>Solubility in water at 20°C [g.l⁻¹]:</i> | insoluble |
| • <i>Partition coefficient n-octanol/ water [log Kow]:</i> | not applicable |
| • <i>Viscosity at 20°C [mPa.s]:</i> | not applicable |
| • <i>Vapour density (air=1):</i> | not applicable |
| • <i>Evaporation rate</i> | not applicable |
| 9.3 Other information | |
| • <i>Self-ignition</i> | very low expectation |
| • <i>Ignition temperature (granules) [°C]:</i> | to 600 no ignition |
| • <i>Glowing temperature [°C]:</i> | 435-483 |
| • <i>Heat value [MJ.kg⁻¹]:</i> | 33-34,4 |
| • <i>Bulk density [g.l⁻¹]:</i> | min.115 |

10. STABILITY AND REACTIVITY

10.1 Conditions to avoid

Sources of ignition (naked flame, hot surface).

10.2 Material to avoid

Oils, oxidizing agents.

10.3 Hazardous decomposition products

Thermal decomposition may liberate CO.

11. TOXICOLOGICAL INFORMATION

11.1 Acute effects

Dust is harmful especially if inhaled, may irritate respiratory mucous membranes and skin.

Acute toxicity

LD₅₀ oral - rat > 15400 mg.kg⁻¹

LD₅₀ dermal - rabbit > 3000 mg.kg⁻¹

11.2 Repeated dose toxicity

After long-term impact on skin and mucous membranes skin diseases, conjunctivitis and respiratory system inflammations may occur.

11.3 Sensitisation

It has no sensitisation effects.

11.4 CMR effects (carcinogenicity, mutagenicity, toxicity for reproduction)

It has no CMR effects.

11.5 Toxicokinetics, metabolism, distribution

Not applicable.

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Not applicable.

12.2 Mobility

Not applicable.

12.3 Persistence and degradability

Not applicable.

12.4 Bioaccumulative potential

Not applicable.

12.5 Results of PBT assessment

Not applicable.

12.6 Other adverse environmental effects

According to the Water-Act No 254/2001 Sb. the product is not considered to be a defective substance or a hazardous substance according to Annex No 1 to the Water-Act.

13. DISPOSAL CONSIDERATIONS

13.1 Recommended disposal methods for the substance / mixture (preparation)

Product reuse or disposal in accordance with valid waste legislative regulations.

Recommended method: Energetic utilization (combustion)

Classification according to Waste Catalogue on the basis of waste attributes at the time of its origin.

Recommended classification according to Waste Catalogue: 06 13 03

06 13 02

13.2 Recommended disposal methods for contaminated packaging

Energetic utilization.

13.3 Waste management measures that control exposure of humans and environment

Proceed in accordance with valid health, air and water legislative regulations.

13.4 Waste regulation

Czech Republic

Act No 185/2001 Sb. on wastes and on the amendment of some additional acts, as amended.

Regulation No 381/2001 Sb. establishing the Waste Catalogue, as amended.

European Union

Directive 2006/12/ES on waste

14. TRANSPORT INFORMATION

14.1 Transport classification

Product is not classified as dangerous good according to transport regulations.

14.2 Special transport precautionary measures

Not applicable.

15. REGULATORY INFORMATION

15.1 Chemical Safety Assessment

Not applicable.

15.2 Labelling of the substance / mixture (preparation)

Not applicable (product is not classified as dangerous according to the Czech Act No. 356/2003 Sb. and Regulation (EC) No 1272/2008 (Directive 67/548/EEC or Directive 1999/45/EC).

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

15.3 Regulatory Data relating to the substance / mixture (preparation)

European Union

Regulation (EC) No 1907/2006 REACH

Regulation (EC) No 1272/2008

Czech Republic:

Act No 356/2003 Sb., on chemical substances and chemical preparations and on the amendment of some additional acts, in the wording of posterior regulations

Act No. 258/2000 Sb. on the Protection of Public Health and on the amendments of some related acts, as amended.

Order-in-Council No. 361/2007 Sb., regulating Safety Occupational Health Conditions in the workplace, as amended.

16. OTHER INFORMATION

Information communication in accordance with Article 32 of the Regulation (EC) No 1907/2006 (REACH)

Product is classified as substance without dangerous properties. From this reason, in compliance with Article 31 of the REACH Regulation, no obligation to provide Material Safety Data Sheet (MSDS) applies.

This document, by which we perform our obligation to provide information to the customer in accordance with Article 32 of the REACH Regulation, has been elaborated in good faith in accordance with the Annex II of the REACH Regulation. The content of MSDS, however, does not necessarily have to correspond with the REACH requirements, as these have been formulated for substances and preparations, which are classified as dangerous.

Fulfilling the obligations related to Regulation (EC) No. 1907/2006 - REACH

The stated chemical substance was pre-registered in accordance with the REACH regulation.

Training instructions

Personnel handling the product has to be instructed about the handling risks and the health protection and environmental requirements (see the relevant Employment Law provisions)

Access to information

Employer must in accordance with Articles 35 of the Regulation (EC) No 1907/2006 enable access to the information from MSDS workers and their representatives who this product use or may be exposed to in the course of their work.

Sources of data used to compile the Material Safety Data Sheet

Record on the classification of hazardous properties of the product

Annex No. 1 to the Regulation No 232/2004 Sb., as amended.

Annex No VI to the Regulation (EC) No 1272/2008 (Table No 3.2)

Annex No 1F to the Directive No 2008/58/EC

Annex No 1A to the Directive No 2009/2/ES

First aid principles in case of exposition to chemical substances (doc. MUDr. Daniela Pelclová et al.)

MSDS_Nappar 6

Revised information

01.12.2006: Revised data under headings 1, 2, 4, 8, 12.5, 13, 16

01.03.2007: Revised data under headings 1 and 16

01.06.2007: General update according to Regulation (EC) No 1907/2006 REACH

01.03.2007: Revised data under headings 1, , 8.1, 15.3, 16 and "Statement"

01.03.2007: Revised data under headings 1, 2, 9, 15 and 16

MATERIAL SAFETY DATA SHEET

Date of issue: 10.09.2004
Reviewed on: 01.12.2009 6th Edition

CARBON BLACK

Statement: This Material Safety Data Sheet has been elaborated in accordance with the Regulation (EC) No 1907/2006. This MSDS contains information necessary for the protection of health and environment. The information does not substitute the quality specification of products and should not be construed as any guarantee of suitability for particular applications. The data contained are based on the present state of knowledge and current national legislation. The user is responsible for ensuring that the requirements of relevant regional legislation are complied with.

According to an authorisation form on behalf of UNIPETROL RPA s.r.o., elaborated by:
Environmental and standardisation department HSE&Q, UNIPETROL SERVICES, s.r.o.