47250 Furnace Black

1. Identification of the Substance/Mixture and of the Company/Undertaking

1. 1. Product Identifier

Product Name:	*Furnace Black*
Article No.:	*47250*
UFI:	*--*

1. 2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:

Colored printing inks
Varnishes
Plastics
Special applications
Pigment
Conductivity
Reaction media

Uses advised against:

Tattoo

1. 3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company:	*Kremer Pigmente GmbH & Co. KG*
Address:	*Hauptstr. 41-47, 88317 Aichstetten, Germany*
Tel./Fax.:	*Tel +49 7565 914480, Fax +49 7565 1606*
Internet:	*www.kremer-pigmente.com*
EMail:	*info@kremer-pigmente.com*
Importer:	*--*

1. 4. Emergency No.

Emergency No.:	*+49 7565 914480 (Mon-Fri 8:00 - 17:00)*

1. 4. 2 Poison Center:

2. Hazards Identification

2. 1. Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

This product does not require classification and labelling as hazardous according to CLP/GHS.

Possible Environmental Effects:

2. 2. Label Elements

Classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 (see also Section 11.02)
This product does not require classification and labelling as hazardous according to CLP/GHS.

Hazard designation:

Signal word:

next page: 2

Hazard designation:

Safety designation:

Hazardous components for labelling:

2. 3. Other Hazards

Dust can form explosive mixtures with air.

3. Composition/Information on Ingredients

3. 1. Substance

3. 2. Mixture

Chemical Characterization: *Amorphous carbon black. Pigment Black 7, C.I. 77266*

Information on Components / Hazardous Ingredients:

Carbon Black, amorphous; REACH-Nr. 01-2119384822-32-0032	100 %	CAS-Nr: 1333-86-4 EINECS-Nr: 215-609-9 EC-Nr:

Additional information:

4. First Aid Measures

4. 1. Description of the First Aid Measures

General information:

Seek medical attention in case of complaints.

After inhalation:

Supply fresh air. Consult physician if symptoms persist.

After skin contact:

Wash with soap and rinse with plenty of water.

After eye contact:

Rinse open eyes with plenty of water for at least 15 minutes.
Seek medical attention if irritation persists.

After ingestion:

Rinse mouth with plenty of water.
If symptoms persist consult physician.
Never give anything by mouth to an unconscious person.

4. 2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Inhalation: coughing, sneezing.

Effects:

4. 3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

After swallowing larger amounts of product: give active coal.

5. Fire-Fighting Measures

5. 1. Extinguishing Media

Suitable extinguishing media:

Foam, carbon dioxide (CO2), extinguishing powder, water spray, nitrogen (N2).
Use of atomized spray is recommended if water is used.

Unsuitable extinguishing media:

Water with full jet.

5. 2. Special Hazards arising from the Substance or Mixture

Special hazards:

In case of fire: formation of carbon oxides, sulfur oxides and organic decomposition products.

5. 3. Advice for Firefighters

Protective equipment:

Wear self-contained respiratory protective device.

Further information:

Avoid contamination of sewage system, open water ways and ground water.
Contaminated extinguishing water and debris should be disposed of according to local regulations.

6. Accidential Release Measures

6. 1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear protective clothing.
Avoid formation of dust.
Together with water product causes slippery surfaces.

6. 2. Environmental Precautions

Environmental precautions:

Prevent contamination of soils, drains and surface water.

6. 3. Methods and Material for Containment and Cleaning Up

Methods and material:

Take up mechanically and collect in suitable containers for disposal. Avoid dust formation.

6. 4. Reference to other Sections

See Section 13 for information on disposal.

7. Handling and Storage

7. 1. Precautions for Safe Handling

Instructions on safe handling:

Avoid formation and deposition of dust. Provide adequate ventilation.

Hygienic measures:

Do not eat or drink during work. Do not smoke.
Avoid contact with skin, eyes and clothing. Do not inhale dust.
Wash hands before breaks and after work.

7. 2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store in closed container and keep product dry.
Keep away from ignitable sources, heat and fire.

Requirements for storage areas and containers:

Store product in correctly labelled containers.

Information on fire and explosion protection:

Keep away from sources of ignition - do not smoke. Take measures to prevent electrostatic discharge.
Do not store together with: strong oxidants.
Do not store together with flammable products.
Carbon monoxide can be formed in closed containers or not well ventilated storage rooms.
Should repair work be necessary in the manufacturing facility (e.g. welding), the area has to be completely free from the product.
Dust explosion class 1 (Kst-value > 0 - 200 bar m/s).
Max. pressure increase: 30 - 100 b/s; Ignition energy: > 1 kJ

Storage class:

Further Information:

7. 3. Specific End Use(s)

Further information:

See Section 1.2.; no other uses provided

8. Exposure Controls/Personal Protection

8. 1. Parameters to be Controlled

Parameters to be controlled (DE):

TRGS 900
Carbon Black, amorphous (CAS 1333-86-4):
TLV: 1.25 mg/m3 air-borne fraction (general dust limit)
TLV: 10 mg/m3 inhalable fraction (general dust limit)

Parameters to be controlled:

Carbon Black, amorphous (CAS 1333-86-4), TWA (inhalable fraction): 3.5 mg/m3 (EH40 WEL); STEL (inhalable fraction): 7.0 mg/m3 (EH40 WEL)

Derived No-Effect Level (DNEL):

Predicted No-Effect Concentration (PNEC):

Additional Information:

8. 2. Exposure Controls

Technical protective measures:

Adequate ventilation to control airborne concentrations below the exposure limits.

Personal Protection

General protective measures:

Avoid contact with skin and avoid inhalation of vapour. Do not eat,

drink or smoke while working.
Preventive skin protection by applying protective cream.

Respiratory protection:

Dust mask recommended when very dusty: with particle filter P2.

Hand protection:

Protective gloves

Protective glove material:

Natural rubber (NR), polyvinyl chloride (PVC), nitrile rubber (NBR).

Eye protection:

Safety glasses with protective shields (EN 166).

Body protection:

Not required.

Environmental precautions:

Suppress dust with a water spray jet.

9. Physical and Chemical Properties

9. 1. Information on Basic Physical and Chemical Properties

Form:	*powder*
Color:	*black*
Odor:	*odorless*
Odor threshold:	*no information available*
pH-Value:	*> 6.5 (50 g/l; 20°C)*
Melting temperature:	*> 3000°C*
Boiling temperature:	*> 3000°C*
Flash point:	*not applicable*
Evaporation rate:	*not applicable*
Flammability (solid, gas):	*> 45 s / > 300°C (VDI 2263)*
Upper explosion limit:	*not determined*
Lower explosion limit:	*50 g/m3 (VDI 2263)*
Vapor pressure:	*not applicable*
Vapor density:	*No information available.*
Density:	*1.7 - 1.9 g/cm3 (20°C)*
Solubility in water:	*insoluble*
Coefficient of variation (n-	

Octanol/Water):	
	not applicable
Auto-ignition temperature:	*> 140°C* *Method: IMDG-Code. Cubic sample container of 100 mm side lengths.* *Not classifiable as a Division 4.2 self-heating substance as defined by UN Recommendations on the Transport of Dangerous Goods and IMDG.* *Volume-dependent parameter, measured temperature refers to the 1 l sample.* *Temperature decreases with increasing volume*
Decomposition temperature:	*> 400°C (VDI 2263)*
Viscosity, dynamic:	
	not applicable
Explosive properties:	
	Product is not explosive; however, an explosive dust/air mixture can be formed.
Oxidizing properties:	
	no information available
Bulk density:	*80 - 220 kg/m3*

9. 2. Further Information

Solubility in solvents:	
Viscosity, kinematic:	
Burning class:	
Solvent content:	
Solid content:	
Particle size:	
Other information:	
	Maximum explosion pressure: 10 bar (VDI 2263) *Dust explosion class: ST1* *Dust deflagration index (Kst): 30 - 100 bar.m/s* *Impact sensitivity: no impact sensitive* *Minimum ignition energy: > 1 kJ* *Minimal ignition temperature: >600°C*

10. Stability and Reactivity

10.1. Reactivity

Stable if used according to specifications.

10.2. Chemical Stability

Stable if used according to specifications.

10.3. Possibility of Hazardous Reactions

The product is not dust explosive when delivered. The accumulation of fine dust can however increase the risk of dust explosion.

Hazardous polymerisation will not occur.

10.4. Conditions to Avoid

Conditions to avoid:

Avoid heat and sources of ignition.

Thermal decomposition:

> 400°C

10.5. Imcompatible Materials

Strong oxidizing agents.

10.6. Hazardous Decomposition Products

In case of fire: formation of carbon oxides, organic products of decomposition and sulfoxides.

10.7. Further Information

11. Toxicological Information

11. 1. Information on Hazard Classes as defined in Regulation (EC) No. 1272/2008

Acute Toxicity

LD50, oral: *> 8000 mg/kg (rat; OECD 401)*
Assessment: The substance or mixture has no acute oral toxicity.

LD50, dermal:

No information available.

LC50, inhalation:

No information available.

Primary effects

Irritant effect on skin:

Non irritating (rabbit; OECD 404)

Irritant effect on eyes:

Non-irritating to eyes (rabbit; OECD 405)

Inhalation:

No information available.

Ingestion:

No information available

Sensitization:

Non sensitizing (guinea pig; OECD 406).

Mutagenicity:

In vitro genetic-toxicity:
Carbon Black is not suitable to be tested in bacterial (Ames test) and other in vitro systems because of its insolubility. When tested, however, results for Carbon Black showed no mutagenic effects.
Organic solvent extracts of Carbon Black can, however, contain traces of polycyclic aromatic hydrocarbons (PAHs). A study to examine the bioavailability of these PAHs showed that PAHs are very tightly bound to Carbon Black and not bioavailable 5).
In vivo genetic-toxicity:
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 genotoxic oxygen species.

Assesment: Not a mutagen.

In vivo mutagenicity in rats is occurring by mechanisms secondary to a threshold effect and a consequence of "lung over-load" which led to chronic inflammation and 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.

Reproductive toxicity:

Effect on fertility:

No experimental studies on effects of Carbon Black on fertility and reproduction have been located.

However, based on the toxicokinetics data, Carbon Black is deposited in the lungs and based on its specific chemical-physical properties (insolubility, low absorption potential), it is not likely to distribute in the body to reach reproductive organs, embryo and/or foetus under in vivo conditions.

Therefore, no adverse effects of Carbon Black to foetal development are expected. No effects have been reported in long-term animal studies.

Effects on the development of the unborn child:

No experimental studies on effects of Carbon Black on foetal development have been located.

However, based on the toxicokinetics data, Carbon Black is deposited in the lungs and based on its specific chemical-physical properties (insolubility, low absorption potential), it is not likely to distribute in the body to reach reproductive organs, embryo and/or foetus under in vivo conditions.

Es werden daher keine ungünstigen Auswirkungen durch Kohlenstoffschwarz auf die fötale Entwicklung erwartet.

Assessment: No reproductive effect. No teratogenic effect.

Carcinogenicity:

Oral, rat (2 years; feeding study)

Oral, mouse (2 years; feeding study)

Dermal, mouse: 12-18 months; Target organ: skin; effect: no tumors.

Evaluation: no tumors.

Rat, mouse (2 years). Exposition: Overload Effect). Target organ: lung. Effect: inflammation, fibrosis, tumors.

Target organ: lung. Effect: inflammation, hyperplasia, fibrosis.

Teratogenicity:

Not considered to be teratogenic.

Specific target organ toxicity (STOT):

Single exposure: no organospecific toxicity expected.

Repeated exposure: no organospecific toxicity expected.

NOAEC: 1 mg/m3 inhalaton (respirable fraction) (90d, lungs / inflammatio, hyperplasia, fibrosis); NOEL: 137 mg/kg oral (mouse, 2 years); NOEL: 52 mg/kg oral (rat, 2 years)

Aspiration hazard:

No risk of aspiration.

11. 2. Information on other Hazards

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 animal species exhibits carcinogenicity in two or more studies. Lung tumours in rats are the result of exposure under "lung over-load" conditions. The development of lung tumours in rats is specific to this species. Mouse and hamster showed no carcinogenicity in similar studies.

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

Overall, as a result of the detailed epidemiological investigations, no causative link between Carbon Black exposure and cancer risk in humans has been demonstrated. This view is consistent with the IARC evaluation in 2006.

Furthermore, several epidemiological and clinical studies of workers in the Carbon Black production industries show no evidence of clinically significant adverse health effects due to occupational exposure to Carbon Black. No dose response relationship was observed in workers exposed to Carbon Black.

Applying the rules of the Globally Harmonized System of Classification and Labelling (GHS, e.g. UN `Purple Book´ , EU CLP Regulation) the results of repeated dose toxicity and carcinogenicity studies in animals do not lead to classification of Carbon Black for Specific target organ toxicity (Repeated exposure) and carcinogenicity.

UN GHS says, that even if adverse effects are seen in animal studies or in-vitro tests, no classification is needed if the mechanism or mode of action is not relevant to humans. 2)

The European CLP Regulation also mentions, that no classification is indicated, if the mechanism is not relevant to humans. 3) Furthermore, the CLP guidance on classification and labelling states, that „lung overload" in animals is listed under mechanism not
relevant to humans. 4)

12. Ecological Information

12. 1. Aquatic Toxicity

Fish toxicity:

LC50: > 1000 mg/l (96h, Danio rerio; OECD 203)

LC0: > 5000 mg/l (14d, Leuciscus idus)

Acute / Chronic aquatic toxicity:

Carbon Black is an inert, inorganic and water insoluble substance therefore its bioavailability for aquatic organisms is low. As an element it has not further reactive or functional groups and an acute toxicity is not expected.

Daphnia toxicity:

EC50: > 5600 mg/l (24h, Daphnia magna; OECD 202)

Bacteria toxicity:

EC0: > 400 g/l (3h) DEV L3 (TTC-Test)
EC10: 800 g/l (3h) DEV L3 (TTC-Test)
Toxicity Data on Soil:
As an inert solid substance, insoluble in water and organic solvents diffusion through membranes or uptake and bioaccumulation to terrestrial organisms is not expected. Based on the available data, Carbon Black is not considered as toxic to terrestrial organism.

Algae toxicity:

EC50: > 10000 mg/l (72h, Scenedesmus subspicatus; OECD 201)
NOEC: > 10000 mg/l (72h, Scenedesmus subspicatus; OECD 201)

12. 2. Persistency and Degradability

Carbon Black is substantially elemental carbon. The substance is inorganic and cannot be further biodegraded by microorganisms.
The product floats on the water surface and does not dissolve.

12. 3. Bioaccumulation

Considered unlikely to bioaccumulate.

12. 4. Mobility

Carbon Black is an inert solid. It is stable and insoluble in water or organic solvents. Its vapour pressure is negligible. Based on these properties it is expected that Carbon Black will not occur in air or water in relevant amounts. Also potential for distribution via water or air, respectively, can be dismissed. The deposition in soil or sediments is therefore the most relevant compartment of fate in the environment.

12. 5. Results of PBT- und vPvP Assessment

Not classified as PBT substance / Not classified as a vPvB substance.

12. 6. Endocrine Disrupting Properties

This substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delgated Regulation (EU) No. 2017/2100 or Commission Regulaton (EU) 2018/605 at levels of 0.1 % or higher.

12. 7. Other Adverse Effects

Water hazard class:

Not hazardous.

Behaviour in sewage systems:

Based on the available data, the product is not expected to interfere with the operation of sewage treatment plants

Further ecological effects:

AOX Value:

13. Disposal Considerations

13. 1. Waste Treatment Methods

Product:

In accordance with current regulations, product may be taken to a

waste disposal site or incineration plant, after consultation with site operator and/or with the responsible authority.

European Waste Code (EWC):

The waste code must be determined together with the regional disposal service.

Uncleaned packaging:

Non-contaminated packaging may be recycled.
Contaminated packaging must be disposed like the substance.

Waste Code No.:

14. Transport Information

14. 1. UN Number

ADR, IMDG, IATA

14. 2. UN Proper Shipping Name

ADR/RID:

No hazardous goods according to ADR / DOT (US) (land transportation).

IMDG/IATA:

Not hazardous goods

14. 3. Transport Hazard Classes

ADR Class:

not applicable

Hazard no.:

Classification code:

Tunnel restriction code:

IMDG Class (sea):

not applicable

Hazard no.:

EmS No.:

IATA Class:

not applicable

Hazard no.:

14. 4. Packaging Group

ADR/RID:

not applicable

IMDG:

IATA:

14. 5. Environmental Hazards

None

14. 6. Special Precautions for User

Not classified as a dangerous good under transport regulations.

14. 7. Maritime Transport in Bulk according to IMO Instruments

not applicable

14. 8. Further Information

Not activated carbon black of mineral origin.
No hazardous goods of classification 4.2.

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

0, not hazardous (German Regulation; Self-assessment)

Local regulations on chemical accidents:

Employment restrictions:

Restriction and prohibition of application:

Technical instructions on air quality:

15. 2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this product.

15. 3. Further Information

Listed in the following inventories:
EINECS (215-609-9), TSCA (US), AICS (AUS), DSL (CA), ENCS/ISHL (JP), KECI (KR), PICCS (PH), IECSC (CN), NZIoC (NZ), PICCS (PH), CSNN (TW)

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.

1) Baan, R. Carcinogenic Hazards from Inhaled Carbon Black, Titanium Dioxide, and Talc not Containing Asbestos or Asbestiform Fibers: Recent Evaluations by an IARC Monographs Working Group. Inhalation Toxicology, 19 (Suppl. 1); 213-228 (2007).

2) • UN: Globally harmonized system of classification and labelling of chemicals (GHS).Revision 3, 2009. http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html:)

3) • EU: Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006. 2008:1-1355. http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0 001

4) • Guidance to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures. 14 May 2009- IHCP, DG Joint Research Centre, European Commission http://ecb.jrc.ec.europa.eu/documents/Classification-Labelling/CLP_Guida

6) Elder, A.C.P., Corson, N., Gelein, R., Mercer, P.guyen, K.,

next page: 13

following overloading with carbon black. The Toxicologist., Vol. 54, No 1, p. 315. Cox, C., Keng, P., Finkelstein, J.N. and Oberdörster, G. (2000). Particle surface area-associated pulmonary effects.

7) Carter, J.M., Oberdörster, G. and Driscoll, K.E. (2000). Cytokine, Oxidant, and mutational responses after lung overload to inhaled Carbon Black. The Toxicologist., Vol. 54, No 1, p .315

8) Mauderly, J.L., McCunney, R.J., editors. Particle Overload in the Rat Lung and Lung Cancer, Implications for Human Risk Assessment. Proceedings of a Conference Held at the Massachusetts Institute of Technology, March 29 and 30, 1995. Taylor & Frances, Washington, DC. 1996

9) Mauderly, J.L. (1996). Lung overload: The dilemma and opportunities for resolution. Inhalation Toxicology 8, 1-28