



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878 and
Regulation (EC) No. 1272/2008

Issuing Date 16-Jun-2018

Revision Date 23-Jun-2023

Revision Number 10

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name	CARBON BLACK
REACH registration number	01-2119384822-32-0144
CAS No	1333-86-4
Synonyms	Sold under KOHLENSTOFF(R), KLAREX, JETEX, ONYX, VIRTEX, ELECTRA, COLORX, and TYRE GOLD (nanofom products)
Pure substance/mixture	Substance

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Additive for plastic and rubber; Pigment for coatings, paints and lacquers; Special applications such as semi conductive compounds, UV filters, additive for batteries, refractories, etc.
Uses advised against	Not recommended for use as a human tattoo pigment For professional use only

1.3. Details of the supplier of the safety data sheet

Importer	Supplier
Only Representative: Intertek France Ecoparc II, 27400 Heudebouville, FRANCE	Himadri Speciality Chemical Ltd. 8, India Exchange Place, 2nd Fl Kolkata, WB 700 001 INDIA +91-33 2230 4363 +91-33 2230 9953
REACH contact person: Emilie Savides Telephone No.: +33 2 79 23 03 49 Email: if.reach@intertek.com	

For further information, please contact

E-mail address carbonblack@himadri.com

1.4. Emergency telephone number

Emergency telephone	CHEMTREC: +44 20 3885 0382 +1 703 527 3887 (CHEMTREC International)
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Emergency telephone - §45 - (EC)1272/2008

Europe | 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

This substance is classified as not hazardous according to regulation (EC) 1272/2008 [CLP].

2.2. Label elements**Hazard statements**

Not classified.

2.3. Other hazards

May form combustible dust concentrations in air. Contact with dust can cause mechanical irritation or drying of the skin. Dust contact with the eyes can lead to mechanical irritation. Inhalation of dust in high concentration may cause irritation of respiratory system. Do not expose to temperatures above 400 °C.

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Carbon black 1333-86-4	100	01-211938482 2-32	215-609-9	[A]	-	-	-

Additional information

HS Code: 2803.00.00

Classification according to Regulation (EC) No. 1272/2008 [CLP] - Notes

[A] - Not classified, Data are conclusive but insufficient for classification

Full text of H- and EUH-phrases: see section 16**Acute Toxicity Estimate**

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Carbon black 1333-86-4	> 8000	-	-	-	-

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Nanoforms

Carbon black (1333-86-4)

Name of (set of) nanoform(s)	Particle characteristics	Value	Method
carbon black, solid, nanoform, no surface treatment	Particle Size distribution - d10	> 6 - < 71 nm	No information available
carbon black, solid, nanoform, no surface treatment	Particle Size distribution - d50	> 7 - < 101 nm	No information available
carbon black, solid, nanoform, no surface treatment	Particle Size distribution - d90	> 21 - > 178 nm	No information available
carbon black, solid, nanoform, no surface treatment	Shape of particles	Spherical; Aspect ratio Up to 3:1	No information available
carbon black, solid, nanoform, no surface treatment	Crystallinity	Amorphous; Not crystalline	No information available
carbon black, solid, nanoform, no surface treatment	Specific surface area	18 - 310 m ² /g	BET
carbon black, solid, nanoform, no surface treatment	Level of dustiness	High	DIN-EN 15051-2
carbon black, solid, nanoform, no surface treatment	Surface treatment	None	No information available
carbon black, solid, nanoform, no surface treatment	Agglomeration state	Micron-sized agglomerates	No information available
carbon black, solid, nanoform, no surface treatment	Dissolution Rate	Not soluble	No information available
carbon black, solid, nanoform, no surface treatment	Dispersion stability	Intermediate stability	OECD 318

SECTION 4: First aid measures**4.1. Description of first aid measures**

Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a doctor.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if symptoms occur.
Skin contact	Wash skin with soap and water. If symptoms persist, call a doctor.
Ingestion	Do NOT induce vomiting. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Irritating to the eyes and respiratory tract if exposed above the occupational exposure limits. See Section 11 for additional Toxicological Information.
Effects of Exposure	See Section 11 for additional Toxicological Information.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable Extinguishing Media	Foam, Dry chemical, Carbon dioxide (CO ₂), Fog. A fog spray is recommended if water is
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used.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical 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 closely observed for at least 48 hours to ensure no smoldering material is present.

Burning produces irritant fumes. Product is insoluble and floats on water. If possible, try to contain floating material. Dusts or fumes may form explosive mixtures in air. Avoid generation of dust.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking and explosion proof. Take precautionary measures against static discharge.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Material becomes extremely slippery when wet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Material becomes extremely slippery when wet. Avoid generation of dust. All equipment used when handling the product must be grounded. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Use personal protective equipment as required. See section 8 for more information.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. The product is insoluble and floats on water. Any product that reaches water should be contained.

Methods for cleaning up Avoid sweeping spilled dry material. If possible, vacuum using an explosion-proof vacuum and/or cleaning system suitable for combustible dusts. Cleaning system/vacuum equipped with high efficiency particulate air (HEPA) filtration is recommended. Transfer to properly labelled containers. See Section 13 for additional waste treatment information.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information See section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin and eyes. Avoid generation of dust. Do not breathe dust. Do not use compressed air. Take precautionary measures against static discharges. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Fine dust is capable of penetrating electrical equipment and may cause electrical shorts. Safe work practices include the elimination of potential ignition sources in proximity to carbon black dust; good housekeeping to avoid accumulations of dust on all surfaces; appropriate exhaust ventilation design and maintenance to control airborne dust levels to below the applicable occupational exposure limit. If hot work is required, the immediate work area must be cleared of carbon black dust.

General hygiene considerations

Contaminated work clothing should not be allowed out of the workplace. Take off all contaminated clothing and wash it before reuse. Wash hands and face before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep in a dry, cool and well-ventilated place. Store away from heat, ignition sources, volatile chemicals and strong oxidizers. Do not store together with volatile chemicals as they may be adsorbed onto the product.

Carbon black is not classifiable as a Division 4.2 self-heating substance under the UN test criteria. However, UN criteria for determining if a substance is self-heating is volume dependent (i.e., the auto-ignition temperature decreases with increasing volume). This classification may not be appropriate for large volume storage container.

Before entering vessels and confined spaces containing carbon black, test for adequate oxygen, flammable gases and potential toxic air contaminants. Do not allow dust to accumulate on surfaces.

7.3. Specific end use(s)

Specific use(s)

The identified uses for this product are detailed in Section 1.2.

Exposure scenario

Per Article 14.4 of the REACH Regulation, no exposure scenario has been developed as the substance is not hazardous.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Carbon black 1333-86-4	-	-	TWA: 3 mg/m ³	-	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Carbon black 1333-86-4	-	TWA: 2.0 mg/m ³ dust	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³	TWA: 3 mg/m ³	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Carbon black 1333-86-4	TWA: 3.5 mg/m ³ inhalable	-	-	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³	TWA: 3 mg/m ³ respirable
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable STEL: 15 mg/m ³	-	TWA: 3 mg/m ³	-	-

Chemical name	Calculated, inhalable				
Carbon black 1333-86-4	-	-	-	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³ calculated	TWA: 4 mg/m ³ inhalable
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Carbon black 1333-86-4	-	-	TWA: 2 mg/m ³ respirable TWA: 10 mg/m ³ respirable	-	TWA: 3.5 mg/m ³
Chemical name	Sweden		Switzerland	United Kingdom	
Carbon black 1333-86-4	NGV: 3 mg/m ³ Inhalable		-	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³	

Other information on limit values NOTE: Unless otherwise indicated as "respirable" or "inhalable", the exposure limit represents a "total" value. The inhalable exposure limit has been demonstrated to be more restrictive than the total exposure limit, by a factor of approximately 3

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Carbon black 1333-86-4	-	-	2 mg/m ³ inhalable 0.5 mg/m ³ respirable

Derived No Effect Level (DNEL) - General Public Not applicable.

8.2. Exposure controls

Engineering controls

Use process enclosures and/or exhaust ventilation to keep airborne dust concentrations below the occupational exposure limit. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.

Hand protection

Protective gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must conform to standard EN 374.

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

Approved air purifying respirator (APR) for particulates may be used where airborne dust concentrations are expected to exceed occupational exposure limits. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or in circumstances where APRs may not provide adequate protection. When respiratory protection is required to minimize exposures to carbon black, programs should follow the requirements of the appropriate governing body for the country, province or state. Selected references to respiratory protection standards are provided

below:

EU: CR592 Guidelines for Selection and Use of Respiratory Protective Devices (CEN).

Germany: DIN/EN 143 Respiratory Protective Devices for Dusty Materials.

UK: BS 4275 Recommendations for the Selection, Use and Maintenance of Respiratory Protective Equipment. HSE Guidance Note HS (G)53 Respiratory Protective Equipment.

General hygiene considerations Contaminated work clothing should not be allowed out of the workplace. Take off all contaminated clothing and wash it before reuse. Wash hands and face before breaks and immediately after handling the product.

Environmental exposure controls See Section 12 for additional Ecological Information.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Black powder or pellet	
Physical state	Solid	
Colour	Black	
Odour	Odourless	
Odour threshold	Not applicable	
Property	Values	Remarks • Method
Melting point / freezing point		Not applicable
Initial boiling point and boiling range		Not applicable
Flammability	> 45 sec	Not flammable
Flammability Limit in Air		
Upper flammability or explosive limits		Not applicable
Lower flammability or explosive limits	50 g/m ³	dust
Flash point		Not applicable
Autoignition temperature	> 140 °C	Transport - IMDG Code
Decomposition temperature		Not applicable
pH	4 - 11	50 g/L Water, 20°C/68°F (ASTM 1512)
pH (as aqueous solution)		Not applicable
Kinematic viscosity		Not applicable
Dynamic viscosity		Not applicable
Water solubility	Insoluble	
Solubility(ies)		None known
Partition coefficient		Not applicable
Vapour pressure		Not applicable
Relative density	1.7 - 1.9 g/cm ³	@20°C
Bulk density	1.25 - 40 lb/ft ³ , 20 - 640 kg/m ³	Pellets: 200 - 680 kg/m ³ ; Powder: 20 - 380 kg/m ³
Liquid Density		Not applicable
Relative vapour density		Not applicable
Particle characteristics		
Particle Size		See Section 3.1 for more information
Particle Size Distribution		See Section 3.1 for more information

9.2. Other information

9.2.1. Information with regards to physical hazard classes

Explosives

Explosive properties Dust explosive, Dust explosion category: ST 1

9.2.2. Other safety characteristics

Formation of explosible dust/air mixtures

Maximum Pressure Rise (bar)	10 bar (VDI 2263)
Maximum Rate of Pressure Rise (bar/sec)	30-400 bar/sec (VDI 2263 and ASTM E1226-88)
Minimum Ignition Energy (MIE)	> 10,000 mJ (VDI 2263)
Minimum Ignition Temperature (°C):	> 500°C (BAM Furnace) (VDI 2263)
	> 315°C (Godberg-Greenwald Furnace) (VDI 2263)

Evaporation rate Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity May react exothermically upon contact with strong oxidizers.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes. Fine dust dispersed in air, in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerisation Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Conditions to avoid Temperatures above > 400 °C / > 752 °F. Eliminate sources of ignition. Incompatible materials. Avoid accumulation of airborne dusts.

10.5. Incompatible materials

Incompatible materials Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon monoxide. Carbon dioxide (CO₂). Sulphur oxides. Organic products of combustion.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust contact with the eyes can lead to mechanical irritation.

Skin contact Contact with dust can cause mechanical irritation or drying of the skin.

Ingestion No known hazard by swallowing.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms None known.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon black	> 8000 mg/kg (Rat) Equivalent to OECD TG 401	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Component Information	
Carbon black (1333-86-4)	
Method	Equivalent to OECD TG 404
Species	Rabbit
Results	non-irritant; Product score: Erythema: 0, edema: 0

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Component Information	
Carbon black (1333-86-4)	
Method	OECD TG 405
Species	Rabbit
Results	non-irritant; Product score: Iris: 0, Chemosis: 0, Cornea: 0, Conjunctivae: 0

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Component Information	
Carbon black (1333-86-4)	
Method	OECD TG 406
Species	Guinea pig
Results	Not a skin sensitiser

Germ cell mutagenicity

In vitro: Carbon black is not suitable to be tested directly in bacterial (Ames test) and other in vitro systems because of its insolubility. However, when organic solvent extracts of carbon black have been tested, results showed no mutagenic effects. Organic solvent extracts of carbon black can contain traces of polycyclic aromatic hydrocarbons (PAHs). A study to examine the bioavailability of these PAHs showed that they are very tightly bound to carbon black and are not bioavailable (Borm, 2005).

In vivo: 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 (Driscoll, 1997). This observation is considered to be rat-specific and a consequence of "lung overload," which leads to chronic inflammation and release of reactive oxygen species. This is considered to be a secondary genotoxic effect and, thus, carbon black itself would not be considered to be mutagenic.

Assessment: In vivo mutagenicity in rats occurs by mechanisms secondary to a threshold effect and is a consequence of "lung overload," which leads to chronic inflammation and the 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.

Carcinogenicity**Animal 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.
Target organ: lungs.
Effect: inflammation, fibrosis, tumors.

Note: Tumors in the rat lung are considered to be related to “lung overload” 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 (ILSI, 2000). 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.

Mortality studies (human data):

A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study), found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (Dell, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010).

Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington. Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

IARC cancer classification:

In 2006 IARC re-affirmed its 1995 finding that there is “inadequate evidence” from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is “sufficient evidence” in experimental animal studies for the carcinogenicity of carbon black. IARC’s overall evaluation is that carbon black is “possibly carcinogenic to humans (Group 2B)”. This conclusion was based on IARC’s guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was “sufficient evidence” that carbon black extracts can cause cancer in animals (Group 2B).

ACGIH cancer classification:

Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

Assessment:

Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labelling of Chemicals, carbon black is not classified as a carcinogen.

Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rat tumors are a result of a secondary non-genotoxic mechanism associated with the phenomenon of lung overload. This is a species-specific mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity – Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk of carcinogenicity.

Reproductive toxicity**Assessment:**

No effects on reproductive organs or fetal development have been reported in long-term repeated dose toxicity studies in animals.

STOT - single exposure**Assessment:**

Based on available data, specific target organ toxicity is not expected after single oral, single inhalation, or single dermal exposure.

STOT - repeated exposure**Animal toxicity:**

Repeated dose toxicity: Inhalation (rat), 90 days, No Observed Adverse Effect Concentration (NOAEC) = 1.1 mg/m³ (respirable). Target organ/effects at higher doses are lung inflammation, hyperplasia, and fibrosis.

Repeated dose toxicity: oral (mouse), 2 yrs, No Observed Effect Level (NOEL) = 137 mg/kg (body wt.)

Repeated dose toxicity: oral (rat), 2 yrs, NOEL = 52 mg/kg (body wt.)

Although carbon black produces pulmonary irritation, cellular proliferation, fibrosis, and lung tumors in the rat under conditions of lung overload, there is evidence to demonstrate that this response is principally a species-specific response that is not relevant to humans.

Morbidity studies (human data):

Results of epidemiological studies of carbon black production workers suggest that cumulative exposure to carbon black may result in small, non-clinical decrements in lung function. A U.S. respiratory morbidity study suggested a 27 ml decline in FEV1 from a 1 mg/m³ 8 hour TWA daily (inhalable fraction) exposure over a 40-year period (Harber, 2003). An earlier European investigation suggested that exposure to 1 mg/m³ (inhalable fraction) of carbon black over a 40-year working lifetime would result in a 48 ml decline in FEV1 (Gardiner, 2001). However, the estimates from both studies were only of borderline statistical significance. Normal age-related decline over a similar period of time would be approximately 1200 ml.

In the U.S. study, 9% of the highest non-smokers 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 conclusions that can be drawn about reported symptoms. This study, however, indicated a link between carbon black and small opacities on chest films, with negligible effects on lung function.

Assessment:

Inhalation: Applying the guidelines of self-classification under GHS, carbon black is not classified under STOT-RE for effects on the lung. Classification is not warranted on the basis of the unique response of rats resulting from “lung overload” following exposure to poorly soluble particles such as carbon black. The pattern of pulmonary effects in the rat, such as inflammation and fibrotic responses, are not observed in other rodent species, non-human primates, or humans under similar exposure conditions. Lung overload does not appear to be relevant for human health. Overall, the epidemiological evidence from well-conducted investigations has shown no causative link between carbon black exposure and the risk of non-malignant respiratory disease in humans. A STOT-RE classification for carbon black after repeated inhalation exposure is not warranted.

Oral: Based on available data, specific target organ toxicity is not expected after repeated oral exposure.

Dermal: Based on available data and the chemical-physical properties (insolubility, low absorption potential), specific target organ toxicity is not expected after repeated dermal exposure.

Aspiration hazard

Assessment:

Based on industrial experience and the available data, no aspiration hazard is expected.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Carbon black 1333-86-4	EC50: >10,000 mg/L (72h, Scenedesmus subspicatus) NOEC: ≥10,000 mg/L (Scenedesmus subspicatus) Method: OECD Guideline 201	LC50: >1000mg/L (96h, Brachydanio rerio (zebrafish)) Method: OECD Guideline 203	EC0: 800 mg/L (3h, Activated sludge) Method: DEV L3 (TTC test)	EC50: > 5600 mg/l (24h, Daphnia magna (waterflea)) Method: OECD Guideline 202

12.2. Persistence and degradability

Persistence and degradability Insoluble in water. The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Bioaccumulation Not expected because of the physicochemical properties of the substance.

12.4. Mobility in soil

Mobility in soil Insoluble. Not expected to migrate.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Dispose of contents/containers in accordance with local regulations.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. EWC: 06 13 03.

SECTION 14: Transport information

Note: The International Carbon Black Association organized the testing of seven ASTM reference carbon blacks according to the UN method, Self-Heating Solids. All seven reference carbon blacks were found to be "Not a self-heating substance of Division 4.2." The same carbon blacks were tested according to the UN method, Readily Combustible Solids and found to be "Not a readily combustible solid of Division 4.1;" under current UN Recommendations on the Transport of Dangerous Goods.

The following organizations do not classify carbon black as a "hazardous cargo" if it is "carbon, non-activated, mineral origin." Himadri Speciality Chemical Ltd's carbon black products meet this definition.

IMDG

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable

14.6 Special Precautions for Users

Special Provisions	None
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IATA

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None
Note:	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Germany**

Water hazard class (WGK)	non-hazardous to water (nwg)
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European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

TSCA	Active
DSL/NDSL	Listed on DSL.
EINECS/ELINCS	Listed. RN: 215-609-9.
ENCS	Listed.
IECSC	Listed.
KECL	Listed.
PICCS	Listed.
AIIC	Listed.
NZIoC	Listed.
TCSI	Listed.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory

15.2. Chemical safety assessment

Chemical Safety Report

A Chemical Safety Assessment has been carried out for this substance

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

ATE: Acute Toxicity Estimate
 SVHC: Substances of Very High Concern for Authorisation:
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
SCBA	Self-contained breathing apparatus		

Key literature references and sources for data used to compile the SDS

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Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Disclaimer

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End of Safety Data Sheet