

RIF: J-00050787-2

According to Article 31 of the Regulation (EC) No 1907/2006 (REACH), a Safety Data Sheet (SDS) must be provided for hazardous substances or preparations. This product does not meet the classification criteria of the Regulation (EC) No 1272/2008 (CLP) . Therefore such document is outside the scope of Article 31 of REACH and the requirements for content in each section do not apply.

Revision Date: JUNE 2023

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING****1.1 Product Identifier****Product Name:** CARBON BLACK**Synonyms:** Furnace Black**CAS Number:** 1333-86-4**REACH Registration Number:****This SDS is valid for the following grades:** N220, N234, N326, N330, N339, N375, N347, N550, N550T, N550 GOLD, N660, N772**1.2. Relevant identified uses of the substance or mixture and uses advised against****Recommended use:** Additive/Filler for plastic and rubber, Pigment, Chemical reagent, Batteries, Refractories, Ink, Various.**Uses advised against:** Negroven, S.A. does not endorse the use of its products in any direct application or applications that will be in contact with food, cosmetics or medicines.  
Not recommended as a human tattooing pigment.**1.3. Details of the supplier of the safety data sheet**Negroven, S.A.  
Ave. Domingo Olavarría.  
Zona Industrial Municipal Sur  
Valencia, Venezuela  
Tel.: +58241 5133500/ 3510  
Fax: +582415133510**E-Mail Address:** [negroven@negroven.com](mailto:negroven@negroven.com)**1.4 Emergency Telephone Number:** See Section 16**2. HAZARDS IDENTIFICATION**

In accordance with Regulation (EC) No. 1272/2008, it is not necessary to classify or label the product. This information sheet has been developed in good faith to provide customers with sufficient information to enable you to take the necessary safety measures.

**2.1. Classification of the substance or mixture**

Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations and Directive 67/548/EEC.

Non-hazardous substance or mixture according to the Globally Harmonized System (GHS).

ONU Method for Self-Heating Solids: "It is not a liable to spontaneous combustion substance of Division 4.2"

ONU Method for Easily Combustible Solids: "It is not a flammable Solid of Division 4.1"

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**2.2 Others Hazards**

Dust may irritate the respiratory tract and eyes, in case it coming into contact with the mucosa.

Do not expose to temperatures above 400°C.

According to the OSHA Hazard Communication Standard (29 CFR 1910.1200) 2012, Carbon Black is not classified for any toxicological or ecotoxicological endpoints. As a combustible dust, OSHA considers it a hazardous substance. Canada's Hazardous Products Regulation (HPR) 2015 classifies this substance as a Combustible Dust.

Note: The signal word, hazard statement, and precautionary statements for the United States and Canada are: WARNING, may form dust concentrations in air, which, depending on conditions, could cause combustion. Keep away from sources of ignition including heat, sparks and flames. Prevent atmospheres with accumulations of dust, to minimize explosion hazard.

As a combustible dust, it is considered a hazardous substance by OSHA and the 2015 Hazardous Products Regulation (HPR) of Canada, this substance is classified as a Combustible Dust.

**GHS Label Elements**

<b>Pictogram:</b>	None
<b>Signal Word:</b>	Warning
<b>Hazard statements:</b>	May form combustible dust concentrations in air, which depending on conditions could cause combustion.
<b>Precautionary Statements - Prevention</b>	<ul style="list-style-type: none"> <li>• Keep away from all ignition sources including heat, sparks and flame</li> <li>• Prevent dust accumulations to minimize explosion hazard</li> </ul>
<b>Hazards not otherwise classified (HNOC)</b>	Do not expose to temperatures above 400°C. Hazardous products of combustion can include carbon monoxide, carbon dioxide, oxides of sulfur, and organic products.
<b>Precautionary advice:</b>	<ul style="list-style-type: none"> <li>• Wear suitable respiratory protector when the dust level exceeds the permissible environmental concentration (CAP) = 3.5 mg / m<sup>3</sup></li> <li>• Wear safety glasses, gloves, respiratory protection and suitable clothing.</li> </ul>

**Poetential Health Effects**

<b>Principle Routes of Exposure:</b>	Inhalation, Eye contact, Skin contact
<b>Eye Contyact:</b>	May cause mechanical irritation. Avoid contact with eyes.
<b>Skin Contact:</b>	May cause mechanical irritation, soiling, and skin drying. Avoid contact with skin. No cases of sensitization in humans have been reported.
<b>Inhalation:</b>	Dust may be irritating to respiratory tract. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. See also Section 8.
<b>Ingestion:</b>	Adverse health effects are not expected. See Section 11.
<b>Carcinogenicity:</b>	Carbon Black is listed as an IARC (International Agency for Research on Cancer) Group 2B substance (possibly carcinogenic to humans). See also Section 11.
<b>Target Organ Effects:</b>	Lungs, See Section 11
<b>Medical Copnditions Aggravated by Exposure:</b>	Asthma, Respiratory disorder
<b>Potential Environmental Effects:</b>	None known.

**Endocrine Disruptor Información:** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

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Chemical Name	CAS Number	EC Number	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Weight %	REACH registration number	M-Factor	M-Factor (long-term)
Carbon Black	1333-86-4	215-609-9	-	100	-	-	-

**4. FIRST AID MEASURES**

**4.1. Description of first aid measures**

- Skin Contact:** Wash thoroughly with soap and water. Seek medical attention if symptoms develop.
- Eye Contact:** Flush eyes immediately with large amounts of water for 15 minutes. Seek medical attention if symptoms develop.
- Inhalation:** If cough, shortness of breath or other breathing problems occur, move to fresh air. Seek medical attention if symptoms persist. If necessary, restore normal breathing through standard first aid measures.
- Ingestion:** Do not induce vomiting. If conscious, give several glasses of water. Never give anything by mouth to an unconscious person.

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

**Symptoms:** The most important known symptoms and effects are described in Section 2 and/or in Section 11.

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

**Notes to Physician:** Treat Symptomatically

**5. FIRE-FIGHTING MEASURES**

**5.1 Extinguishing Media:**

- Suitable Extinguishing Media** Use foam, carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), dry chemical or water spray. A fog spray is recommended if water is used
- Unsuitable Extinguishing Media** DO NOT USE a solid water stream as it may scatter and spread fire. DO NOT USE high pressure media which could cause formation of a potentially explosible dust-air mixture.

**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 embers and/or sparks are apparent. Carbon black that has been on fire should be observed closely for at least 48 hours to ensure no smoldering material is present. Burning produces irritant fumes. The product is insoluble and floats on water. If possible, try to contain floating material.

**Hazardous Combustion Products:** Carbon monoxide, Carbon dioxide, Sulphur oxides.

**5.3. Advice for firefighters**

**Special Protective Equipment for Firefighters:** Wear suitable protective equipment. In the event of fire, wear self-contained breathing apparatus. Wet carbon black produces very slippery walking surfaces.

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**6. ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures****Personal Precautions:**

CAUTION: Wet carbon black produces slippery walking surfaces. Avoid dust formation. Ensure adequate ventilation. Use personal protective equipment recommended in Section 8.

**For emergency responders:**

Use personal protection recommended in Section 8.

**6.2. Environmental precautions****Environmental Precautions:**

Contain spilled product on land, if possible. The product is insoluble and floats on water. Any product that reaches water should be contained. Local authorities should be advised if spillages cannot be contained.

**6.3. Methods and material for containment and cleaning up****Methods for containment:**

Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up:**

If the spilled material contains dust or has the potential to create dust, use explosion-proof vacuums and/or cleaning systems suitable for combustible dusts. Use of a vacuum with high efficiency particulate air (HEPA) filtration is recommended. Do not create a dust cloud by using a brush or compressed air. Dry sweeping is not recommended. Water spray will produce very slippery walking surfaces and will not result in satisfactory removal of carbon black contamination. Pick up and transfer to properly labelled containers. See Section 13.

**6.4. Reference to other sections**

See section 8 for more information. See section 13 for more information.

**7. HANDLING AND STORAGE****7.1. Precautions for safe handling****Advice on safe handling:**

Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Do not create a dust cloud by using a brush or compressed air. Dust may form explosible mixture in air.

Fine dust is capable of penetrating electrical equipment and may cause electrical shorts.

Take precautionary measures against static discharge. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations. If hot work (welding, torch cutting, etc.) is required the immediate work area must be cleared of carbon black product and dust.

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**General hygiene considerations:** Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Condition:**

Keep in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Do not store together with strong oxidizing agents. Do not store together with volatile chemicals as they may be adsorbed onto product. Keep in properly labeled containers. Carbon black is not classifiable as a Division 4.2 self-heating substance under the UN test criteria. However, the UN criteria for determining if a substance is selfheating is volume dependent, i.e., the auto-ignition temperature decreases with increasing volume. This classification may not be appropriate for large volume storage containers. Before entering vessels and confined spaces containing carbon black, test for adequate oxygen, flammable gases and potential toxic air contaminants. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosible mixture if they are released in the atmosphere in sufficient concentrations.

**Incompatible materials:** Strong oxidizing agents.

### 7.3. Specific end use(s)

**Risk Management Measures (RMM)** Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance is not hazardous.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

**Exposure guidenlines:** The table below is a summary. Please see the specific legislation for complete information.

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**Carbon Black, CAS RN 1333-86-4:**

Argentina: 3.5 mg/m<sup>3</sup>, TWA  
Australia: 3.0 mg/m<sup>3</sup>, TWA inhalable  
Belgium: 3.6 mg/m<sup>3</sup>, TWA  
Brazil: 3.5 mg/m<sup>3</sup>, TWA  
Canada (Ontario): 3.0 mg/m<sup>3</sup>, TWA inhalable  
China: 4.0 mg/m<sup>3</sup>, TWA; 8.0 mg/m<sup>3</sup>, STEL  
Colombia: 3.0 mg/m<sup>3</sup>, TWA inhalable  
Czech Republic: 2.0 mg/m<sup>3</sup>, TWA  
Finland: 3.5 mg/m<sup>3</sup>, TWA; 7.0 mg/m<sup>3</sup>, STEL  
France - INRS: 3.5 mg/m<sup>3</sup>, TWA/VME inhalable  
Germany - TRGS 900: 3.0 mg/m<sup>3</sup>, TWA respirable; 10.0 mg/m<sup>3</sup>, TWA inhalable  
Germany - AGW: 1.5 mg/m<sup>3</sup>, TWA respirable; 4.0 mg/m<sup>3</sup>, TWA inhalable  
Hong Kong: 3.5 mg/m<sup>3</sup>, TWA  
Indonesia: 3.5 mg/m<sup>3</sup>, TWA/NABs  
Ireland: 3.5 mg/m<sup>3</sup>, TWA; 7.0 mg/m<sup>3</sup>, STEL  
Italy: 3.0 mg/m<sup>3</sup>, TWA inhalable  
Japan MHLW: 3.0 mg/m<sup>3</sup>  
Japan SOH: 4.0 mg/m<sup>3</sup>, TWA; 1.0 mg/m<sup>3</sup>, TWA respirable  
Korea: 3.5 mg/m<sup>3</sup>, TWA  
Malaysia: 3.5 mg/m<sup>3</sup>, TWA  
Netherlands - MAC: 3.5 mg/m<sup>3</sup>, TWA inhalable  
Mexico: 3.5 mg/m<sup>3</sup>, TWA  
Norway: 3.5 mg/m<sup>3</sup>, TWA  
Spain: 3.5 mg/m<sup>3</sup>, TWA (VLA-ED)  
Sweden: 3.0 mg/m<sup>3</sup>, TWA  
United Kingdom - WEL: 3.5 mg/m<sup>3</sup>, TWA inhalable; 7.0 mg/m<sup>3</sup>, STEL inhalable  
US ACGIH - TLV: 3.0 mg/m<sup>3</sup>, TWA inhalable  
US OSHA - PEL: 3.5 mg/m<sup>3</sup>, TWA  
Venezuela - COVENIN: 3.5 mg/m<sup>3</sup>, TWA

**NOTE:**

- (1) 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.
- (2) Negroven, S.A. manages to the US ACGIH TLV of 3.0 mg/m<sup>3</sup> TWA inhalable.
- (3) As required under the EU Registration, Evaluation and Authorization of Chemicals (REACH) regulation, the Carbon Black REACH Consortium, developed a Derived No Effect Level (DNEL) for carbon black of 2 mg/m<sup>3</sup> inhalable based on human health studies.

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**AGW: Arbeitsplatzgrenzwert****INRS: Institut National de Recherche et de Securite (National Institute of Research and Security)****MAC: Maximaal Aanvaarde Concentraties (Maximum allowed concentration)****MHLW: Ministry of Health, Labor and Welfare****NABS: Nilai Ambang Batas (threshold limit value)****OEL: Occupational Exposure Limit****PEL: Permissible Exposure Limit****SOH: Society of Occupational Health****STEL: Short Term Exposure Limit****TLV: Threshold Limit Value****TRGS: Technische Regeln für Gefahrstoffe (Technical Rule for Hazardous Materials)****TWA: Time Weighted Average****US ACGIH: United States American Conference of Governmental Industrial Hygienists****US OSHA: United States Occupational Safety and Health Administration****VME: Valeur Moyenne d'Exposition (Average Level of Exposure)****WEL: Workplace Exposure Limit****VLA-ED: Valor límite ambiental de exposición diaria (environmental value of daily exposure limit)****Derived No Effect Level (DNEL)**

As required under the EU Registration, Evaluation and Authorization of Chemicals (REACH) regulation, the Carbon Black REACH Consortium developed a Derived No Effect Level (DNEL) for carbon black of 2 mg/m<sup>3</sup> inhalable based on human health studies, and 0.5 mg/m<sup>3</sup> respirable based on animal studies.

**Predicted No Effect Concentration (PNEC)**

Not Applicable

**8.2. Exposure controls****Engineering Control:**

Ensure adequate ventilation to maintain exposures below occupational limits.  
Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

**Personal Protective Equipment****Respiratory Protection:**

An approved air-purifying respirator (APR) for particulates may be permissible where airborne concentrations are expected to exceed occupational exposure limits.  
Protection provided by air-purifying respirators is limited. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any circumstances where air-purifying respirators may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices.

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The following agencies/organizations approve respirators and/or criteria for respirator programs:  
 US: NIOSH approval under 42 CFR 84 required.  
 OSHA (29 CFR 1910.134). ANSI Z88.2-1992 (Respiratory Protection).  
 EU: CR592 Guidelines for the Selection and Use of Respiratory Protection.  
 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.

**Hand Protection:** Wear protective gloves to prevent soiling of hands. Use protective barrier cream before handling the product. Wash hands and other exposed skin with mild soap and water.

**Eye and Face Protection:** Wear eye/face protection. Safety glasses with side-shields. Goggles.

**Skin and Body Protection:** Wear suitable protective clothing. Wash clothing daily. Work clothing should not be allowed out of the workplace.

**Other:** Handle in accordance with good industrial hygiene and safety practice. Emergency eyewash and safety shower should be located nearby.

**Environmental exposure controls:** In accordance with all local legislation and permit requirements.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid

**Appearance:** Black Powder or Pellets

**Odor:** None

**Odor Threshold:** Not applicable

<u>Properties:</u>	<u>Values</u>	<u>Remarks / Method</u>
<b>pH:</b>	2 -11	2 - 4 (oxidized carbon black) and 4 - 11 (non-oxidized carbon black) [50 g/l water, 68°F (20°C)] Method ASTM D1512
<b>Melting Point/Freezing Point:</b>		Not applicable
<b>Boiling Point/Boiling Range:</b>		Not applicable
<b>Evaporation Rate:</b>		Not applicable



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<b>Vapor Pressure:</b>		Not applicable
<b>Vapor Density:</b>		Not applicable
<b>Density:</b>	1.7 - 1.9 g/cm <sup>3</sup>	@ 20°C
<b>Bulk Density:</b>	200-680 kg/m <sup>3</sup> 20-380 kg/m <sup>3</sup>	(Pellets) (Fluffy)
<b>Specific Gravity at 20°C:</b>	1.7-1.9	
<b>Water Solubility:</b>	Insoluble	
<b>Solubilities</b>	Insoluble	
<b>Partition Coefficient (n-octanol/water):</b>		Not applicable
<b>Decomposition Temperature:</b>		Not applicable
<b>Viscosity:</b>		Not applicable
<b>Kinematic viscosity:</b>		Not applicable
<b>Dynamic viscosity:</b>		Not applicable
<b>Oxidizing Properties:</b>		Not applicable
<b>Softening point:</b>		Not applicable
<b>VOC content (%):</b>		No information available
<b>% Volatile (by Volume):</b>		No information available
<b>% Volatile by Weight</b>	< 2.5% 2 - 8%	(950°C) (non-oxidized carbon black) (oxidized carbon black)
<b>Surface Tension:</b>		No information available
<b>Explosive properties:</b>		Dust may form explosible mixture in air
<b>Flash Point:</b>		Not applicable
<b>Flammability (solid, gas):</b>		No information available
<b>Flammability Limit in Air:</b>		No information available
<b>Explosion Limits in Air - Upper (g/m<sup>3</sup>):</b>		Not Determined
<b>Explosion Limits in Air - Lower (g/m<sup>3</sup>):</b>	50 g/m <sup>3</sup>	(dust)
<b>Constante Kst</b>	110 bar m/s (ST class 1)	

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<b>Autoignition Temperature:</b>	> 140 °C	(transport) IMDG-Code
<b>Minimum Ignition Temperature:</b>	> 500 °C > 315 °C	(BAM Furnace) VDI 2263 (Godberg-Greenwald Furnace) VDI 2263
<b>Minimum Ignition Energy:</b>	> 10,000 mJ	VDI 2263
<b>Ignition Energy:</b>		No information available
<b>Maximum Absolute Explosion Pressure:</b>	10 bar	VDI 2263 10 bar at an initial starting pressure of 1 bar. Higher starting initial pressures will yield higher explosion pressures
<b>Maximum Rate of Pressure Rise:</b>	30 - 400 bar/sec	VDI 2263 and ASTM E1226-88
<b>Burn Velocity:</b>	> 45 seconds	(not classifiable as "Highly Flammable", or "Easily Ignitable")
<b>Kst Value:</b>	110 bar m/s (Class ST1)	
<b>Dust Explosion Classification:</b>	ST1	

**9.2. Other information**

None

**10. STABILITY AND REACTIVITY**

**10.1. Reactivity**

**Reactivity:** May react exothermically upon contact with strong oxidizers.

**10.2. Chemical stability**

**Stability:** Stable under recommended handling and storage conditions.

**Explosion data**

**Sensitivity to Mechanical Impact:** Not sensitive to mechanical impact

**Sensitivity to Static Discharge:**

Dust may form explosible mixture in air. Avoid dust formation. Do not create a dust cloud by using a brush or compressed air. Take precautionary measures against static discharges. All metal parts of the mixing and processing equipment must be earthed/grounded. Ensure all equipment is electrically earthed/grounded before beginning transfer operations.

**10.3. Possibility of hazardous reactions**

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Possibility of hazardous reactions:** None under normal processing.

**10.4. Conditions to avoid**

**Conditions to Avoid:** Do not expose to temperatures above 300°C. Keep away from heat and sources of ignition. Avoid dust formation.

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### 10.5. Incompatible materials

**Incompatible Materials:** Strong oxidizers such as chlorates, bromates, and nitrates.

### 10.6. Hazardous decomposition products

**Hazardous Decomposition Products:** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Oxides of sulphur, Organic products of combustion.

## 11. TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Acute Toxicity

**Oral LD50:** LD50/oral/rat = > 8000 mg/kg. (Equivalent to OECD TG 401).

**Inhalation LC50:** No data available.

**Dermal LD50:** No data available.

**Skin corrosion/irritation:** Rabbit: not irritating. (Equivalent to OECD TG 404). Edema = 0 (max. attainable irritation score: 4). Erythema = 0 (max. attainable irritation score: 4). Assessment: Not irritating to skin.

**Serious eye damage/eye irritation:** Rabbit: not irritating. (OECD TG 405). Cornea: 0 (max. attainable irritation score: 4). Iris: 0 (max. attainable irritation score: 2). Conjunctivae: 0 (max. attainable irritation score: 3). Chemosis: 0 (max. attainable irritation score: 4).  
Assessment: Not irritating to the eyes.

**Sensitization:** Guinea pig skin (Buehler Test): Not sensitizing (OECD TG 406).  
Assessment: Not sensitizing in animals. No cases of sensitization in humans have been reported.

**Germ Cell Mutagenicity** In Vitro  
Carbon black is not suitable to be tested 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 PAHs are very tightly bound to carbon black and not bioavailable. (Borm, 2005)

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**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. This observation is believed to be rat specific and a consequence of "lung overload" (Driscoll, 1997) which led 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 the "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.

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**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).

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**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 Labeling 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 and Developmental 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.

**ANIMAL TOXICITY:**

Repeated dose toxicity: inhalation (rat), 90 days, No Observed Adverse Effect Concentration (NOAEC) = 1.1 mg/m<sup>3</sup> (respirable). Target organ effects at higher doses are lung inflammation, hyperplasia, and fibrosis.

**STOT - repeated exposure:**

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.

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**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/m<sup>3</sup> 8 hour TWA daily (inhalable fraction) exposure over a 40-year period (Harber, 2003). An earlier European investigation suggested that exposure to 1 mg/m<sup>3</sup> (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.

**INHALATION ASSESSMENT:**

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 the "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 ASSESSMENT:**

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

**DERMAL ASSESSMENT:**

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

**ASSESSMENT:**

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

**Aspiration Hazard:**

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## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Aquatic Toxicity:

Fish (Brachydanio rerio): LC50 (96hr) > 1,000 mg/L. (Method: OECD 203).  
Daphnia magna: EC50 (24hr) > 5,600 mg/L. (Method: OECD 202).  
Algae (Scenedesmus subspicatus): EC50 (72hr) > 10,000 mg/L.  
Algae (Scenedesmus subspicatus): NOEC >= 10,000 mg/L.  
Activated sludge: EC0 (3hr) >= 800 mg/L. (Method: DEV L3 TTC test).

**12.2. Persistence and degradability** The methods for determining biodegradability are not applicable to inorganic substances

**12.3. Bioaccumulative potential** Not expected due to physicochemical properties of the substance.

### 12.4. Mobility in soil

#### Mobility:

Not expected to migrate. Insoluble.

### 12.5. Results of 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. Other adverse effects

No information available.

## 13. DISPOSAL CONSIDERATIONS

Disclaimer: Information in this section pertains to the product as shipped in its intended composition as described in Section 3 of this MSDS. Contamination or processing may change waste characteristics and requirements. Regulations may also apply to empty containers, liners or rinsate. State/provincial and local regulations may be different from federal regulations.

#### List of Wastes Code:

EU Waste Code No. 61303

### 13.1. Waste treatment methods

#### Waste from residues/unused products:

Waste should not be released to sewers. Product, as supplied, can be burned in suitable incineration facilities or should be disposed of in accordance with the regulations issued by the appropriate federal, state and local authorities. Same consideration should be given to containers and packaging.



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**14. TRANSPORT INFORMATION**

Additional Information: Seven (7) ASTM reference carbon blacks were tested according to the UN method, Self Heating Solids, and 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". Negroven carbon blacks meets this definition.

**DOT**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

**IMDG**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

**RIT**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

**ADR**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

**ICAO (air)**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

**IATA**

<b>14.1 UN/ID no</b>	Not regulated
<b>14.2 Proper Shipping Name</b>	Not regulated
<b>14.3 Hazard Class</b>	Not regulated
<b>14.4 Packing group</b>	Not regulated

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<b>Custom Tariff Number:</b> <b>(Armonized System)</b>	<b>2803.00.00</b>
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**15. REGULATORY INFORMATION**

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**European Union**

**Indication of danger:** Not a hazardous substance according to Regulation (EC) 1272/2008 (CLP), its various amendments and adaptations and Directive 67/548/EEC.

**EU Food Contact Information:** This product may be acceptable for applications coming in contact with food. However, due to national regulation variations within the European Union, the applicable laws of each member state should be consulted. Please contact your Negroven area sales manager for more specific information.

**Pharmaceutical Use:** Not permitted.

**National Regulations**

**Germany Water hazard class (WGK):** nwg (not water endangering) **WGK ID Nr.: 1742**

**Swiss Poison class:** --(tested and found to be not toxic): G-8938

**International Inventories**

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

**15.2. Chemical safety assessment**

**EU Chemical Safety Assessment:** Per Article 14.1 of the REACH Regulation a Chemical Safety Assessment has been carried out.

**EU Exposure Scenarios:** Per Article 14.4 of the REACH Regulation no exposure scenario has been developed as the substance is not hazardous.

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#### 16. OTHER INFORMATION

This product is not considered hazardous according to Regulation No. 1272/2008 (CLP / GHS) and does not contain substances classified as hazardous in accordance with Regulation (EC) N.1272 / 2008.

According to the above, this product is not necessary to provide a material safety data sheet according to Regulation (EC) No 1907/2006 (articles 31.1, 31.2). This product safety information sheet is provided on a voluntary basis, it is not a material safety data sheet and does not meet the requirements of Annex II to Regulation (EC) N ° 1272/2008

##### Carbon Black Extracts:

Manufactured carbon blacks generally contain less than 0.1% of solvent extractable polycyclic aromatic hydrocarbons (PAH). Solvent extractable PAH content depends on numerous factors including, but not limited to, the manufacturing process, desired product specifications, and the analytical procedure used to measure and identify solvent extractable materials. Questions concerning PAH content of carbon black and analytical procedures should be addressed to your carbon black supplier.

##### General Information:

The carbon black industry continues to sponsor research designed to identify adverse health effects from long term exposure to carbon black. This MSDS will be updated as new safety and health information may become available.

##### Food, Cosmetic or Medical Use:

Negroven, S.A. does not endorse the use of its products in any direct application or applications that will be in contact with food, cosmetics or medicines.

##### References:

Globally Harmonized Chemical Product Labeling System (GHS). Seventh revised edition. United Nations. New York and Geneva 2017

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## PRODUCT SAFETY INFORMATION SHEET (PSIS)

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### General Information:

The carbon black industry continues to sponsor research designed to identify adverse health effects from long term exposure to carbon black. This MSDS will be updated as new safety and health information may become available.

### Contacts:

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