













# SOLTEX ACETYLENE BLACK

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

### SECTION 10: Stability and reactivity

- 10.1. Reactivity** : Stable under normal conditions.  
Carbon black cannot easily be caused to explode and therefore there is no danger in practical use.  
However, in special test procedures a carbon black/air mixture can explode.
- 10.2. Chemical stability** : The product is chemically stable.
- 10.2. Possibility of hazardous reactions** : Hazardous polymerization does not occur.  
Will not occur under normal conditions.  
Carbon black cannot easily be caused to explode and therefore there is no danger in practical use.  
However, in special test procedures a carbon black/air mixture can explode.  
Take measures to prevent electrostatic discharges. Avoid dust formation.  
All metal parts of the mixing and processing machines must be earthed.  
Make sure all equipment is grounded before loading operations.
- 10.4. Conditions to avoid** : Avoid heat effect and sources of ignition.  
Avoid temperatures above 400 °C (752 °F).
- 10.5. Incompatible materials** : Avoid contact with strong oxidants.
- 10.6. Hazardous decomposition products** : Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Organic products of decomposition sulphoxides

### SECTION 11: Toxicological information

#### 11.1. Information on likely routes of exposure

Inhalation  
Eye contact  
Skin contact

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 (Rat): > 8,000 mg/kg  
Method: Equivalent to OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

#### Skin corrosion/irritation

##### Product:

Species: Rabbit  
Method: Equivalent to OECD Test Guideline 404  
Result: not irritating  
Remarks:  
Oedema = 0 (max. attainable irritation score: 4)  
Erythema = 0 (max. attainable irritation score: 4)

#### Serious eye damage/eye irritation

##### Product:

Species: Rabbit  
Result: not irritating  
Method: OECD Test Guideline 405

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### Remarks:

Cornea = 0 (max. attainable irritation score: 4)  
Iris = 0 (max. attainable irritation score: 2)  
Conjunctiva = 0 (max. attainable irritation score: 3)  
Chemosis = 0 (max. attainable irritation score: 4)

## Respiratory or skin sensitisation

### Product:

Test Type: Buehler Test  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: not sensitizing to the skin  
Remarks: No evidence of sensitization was found in animals. No cases of sensitization in humans have been reported.

## Germ cell mutagenicity

### Product:

Genotoxicity in vitro : Remarks: 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).

Genotoxicity in vivo : Remarks: 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.

Germ cell mutagenicity - Assessment : Not a mutagen

In vivo mutagenicity in rats is occurring by mechanisms secondary to a threshold effect and a consequence of "lung overload" 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.

## Carcinogenicity

### Product:

Species: Rat  
Application Route: Oral  
Exposure time: 2 years  
Remarks: no tumours

Species: Rat  
Application Route: Inhalation  
Exposure time: 2 years



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Remarks: lungs / inflammation, fibrosis, tumours

Remarks: exposure under overload conditions

Remarks: Note: Tumours in the rat lung are considered to be related to the "particle overload phenomenon" 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. Tumours 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.

Remarks: Lung tumours in rats are the result of exposure under "lung overload" conditions. The development of lung tumours in rats is specific to this species. Mouse and hamster do not develop lung tumours under similar test conditions. The CLP guidance on classification and labelling states, that "lung overload" in animals is listed under mechanism not relevant to humans.

Species: Mouse

Application Route: Oral

Exposure time: 2 years

Remarks: no tumours

Species: Mouse Application

Route: Dermal

Exposure time: 18 months

Remarks: no tumours

Carcinogenicity - Assessment : Not carcinogenic

**IARC** : Group 2B: Possibly carcinogenic to humans

**OSHA** : Not classifiable as a human carcinogen

**NTP** : Not classifiable as a human carcinogen

### Reproductive toxicity

#### **Product:**

Effects on fertility : Remarks: 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 fertility/reproduction are expected. No effects have been reported in longterm animal studies.

Effects on foetal development : Remarks: 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. Therefore, no adverse effects of Carbon Black to foetal development are expected.

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Reproductive toxicity - Assessment : Not a reproductive toxin  
Not a teratogen

### STOT - single exposure

#### Product:

Remarks: Based on the information available, organ-specific toxicity is not to be expected after one single exposure.

### STOT - repeated exposure

#### Product:

Remarks: Effects in the rat lung are considered to be related to the "lung overload phenomenon" 1 & 6 & 7 & 8 & 9) 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.

Remarks: Based on the information available, organ specific toxicity is not to be expected after repeated exposure.

### Repeated dose toxicity

#### Product:

Species: Rat

NOAEC: 1 mg/m<sup>3</sup>

Application Route: inhalation (respirable fraction)

Exposure time: 90 d

Target Organs: lungs / inflammation, hyperplasia, fibrosis

Species: Mouse

NOEL: 137 mg/kg

Application Route: Oral

Exposure time: 2 yr

Species: Rat

NOEL: 52 mg/kg

Application Route: Oral

Exposure time: 2 yr

### Aspiration toxicity

#### Product:

No aspiration toxicity classification

### Experience with human exposure

#### Product:

General Information : 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 overload" conditions. The development of lung tumours in rats is specific to this species. Mouse and hamster showed no carcinogenicity in similar studies.

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In 2006 IARC reaffirmed 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 invitro 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 labeling states, that "lung overload" in animals is listed under mechanism not relevant to humans. 4) Results of epidemiological studies of Carbon Black production workers suggest that cumulative exposure to Carbon Black may result in small decrements in lung function. A recent U.S. respiratory morbidity study suggested a 27 ml decline in FEV1 from a 1 mg/m<sup>3</sup> (inhalable fraction) exposure over a 40-year period. An older 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. 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. The relationship between other respiratory symptoms and exposure to Carbon Black is even less clear. In the U.S. study, 9% of the highest 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.

A study on Carbon Black production workers in the UK 10) 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 11 & 12 & 13 & 14) found a similar increase in lung cancer risk but, like the 2001 UK study 10), found no association with Carbon Black exposure. In contrast, a large US study 15) of 18 plants showed a reduction in lung cancer risk in Carbon Black production workers. Based upon these studies, the February 2006 Working Group at IARC concluded that the human evidence for carcinogenicity was inadequate. 1) Since this IARC evaluation of Carbon Black, Sorahan and Harrington 16) reanalyzed 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 17 & 18) 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 16). Morfeld and McCunney 19) applied a Bayesian approach to unravel the role of uncontrolled cofounders and identified smoking and prior exposure to

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occupational carcinogens received before being hired in the Carbon Black industry as main causes of the observed lung cancer excess risk. Overall, as a result of these detailed 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. 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.

## SECTION 12: Ecological information

### 12.1. Ecotoxicity

#### Product:

- Toxicity to fish : LC0 ((Brachydanio rerio)): 1,000 mg/L  
Exposure time: 96 h  
Method: OECD 203
- LC0 (Leuciscus idus melanotus): > 5,000 mg/L  
Exposure time: 14 d  
Method: DIN 38412 part 15
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): > 5,600 mg/l  
Exposure time: 24 h  
Method: OECD 202
- Toxicity to algae : EC50 (scenedesmus subspicatus): > 10,000 mg/L  
Exposure time: 72 h  
Method: OECD 201
- NOEC (scenedesmus subspicatus): > 10,000 mg/L  
Exposure time: 72 h  
Method: OECD 201
- Toxicity to microorganisms : ECO (local activated sludge): > 400 mg/L  
Exposure time: 3 h  
Method: DEV L3 (TTC test)
- : EC10 (local activated sludge): 800 mg/L  
Exposure time: 3 h  
Method: DEV L3 (TTC test)

#### **Ecotoxicology Assessment**

- Acute 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.
- 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 a chronic toxicity is not expected.
- 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.

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### 12.2. Persistence and degradability

#### Product:

- Biodegradability : Remarks: Carbon Black is substantially elemental carbon. The substance is inorganic and cannot be further biodegraded by microorganisms
- Physico-chemical removability : Remarks: Carbon Black is substantially elemental carbon. It is inert and contains no functional or water-soluble groups. It cannot be further degraded by hydrolysis, light or by photo degradation in air or in surface water.
- Stability in water : Remarks: The product is insoluble and floats on water.
- Impact on Sewage Treatment : Based on the available data, Carbon Black is not expected to interfere with the operation of sewage treatment plants.

### 12.3. Bioaccumulative potential

#### Product:

- Bioaccumulation : Remarks: Based on the physical-chemical properties of Carbon Black as an inert solid, its insolubility and stability in water and in organic solvents, diffusion through membranes of organisms and therefore bioaccumulation is not expected.

### 12.4. Mobility in soil

#### Product:

- Stability in soil : Remarks: 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. Other adverse effects

#### Product:

- Results of PBT and vPvB assessment : Not a PBT, vPvB substance as per the criteria of the REACH Ordinance.
- Additional ecological information : No negative effects known.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

- Waste from residues : In accordance with local and national regulations.  
Observe national regulations.  
Product can be burned in suitable incineration plants or disposed of in a suitable landfill in accordance with the regulations issued by the appropriate federal, provincial, state and local authorities.  
US: Not a hazardous waste under U.S. RCRA, 40 CFR 261.
- Contaminated packaging : Return reusable containers to manufacturer.  
Paper bags may be incinerated, or recycled, or disposed of in an appropriate landfill in accordance with national and local laws. Noncontaminated packaging may be reused. Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging which cannot be decontaminated should be disposed of like the material.

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## SECTION 14: Transport information

In accordance with DOT / ADR / RID / ADN / IMDG / ICAO / IATA

### 14.1. UN number

US DOT - Not regulated as a hazardous material.

ICAO / IATA - Not regulated as a hazardous material.

### 14.2. UN proper shipping name

Not regulated as a hazardous material.

### 14.3. Transport hazard class(es)

Not regulated as a hazardous material.

### 14.4. Packing group

Not regulated as a hazardous material.

### 14.5. Environmental hazards

Not regulated as a hazardous material.

### 14.6. Special precautions for user

Remarks : U.S. DOT Transport Information: not regulated.  
U.S. Rail Regulations: not classified.  
Not classified as dangerous in the meaning of transport regulations.  
Non-activated carbon black of mineral origin.  
No hazardous material of division 4.2  
  
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.  
  
Not dangerous goods in the meaning of ADR/RID, ADN, IMDG Code, ICAO/IATA-DGR

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Carbon black (1333-86-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Superfund Amendments and Reauthorization Act (SARA) Sections 311/312 apply if carbon black is present at any one time in amounts equal to or greater than 10,000 pounds. Under these sections, carbon black is determined to be hazardous according to the following EPA hazard categories:

Immediate health hazard:	No
Delayed (chronic) health hazard:	Yes
Sudden release of pressure hazard:	No
Reactive hazard:	No

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Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 Toxic Substances: Does not contain any components subject to this section.

### 15.2. US State regulations

Carbon black (1333-86-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes				

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

"Carbon black (airborne, unbound particles of respirable size)" is a California Proposition 65 listed substance.

Carbon black (1333-86-4)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

### 15.3. Additional regulatory information

#### OSHA Hazard Communication Standard (29 CFR 1910.1200)

According to the criteria in OSHA HCS (2012) 29 CFR 1910.1200 for classifying hazardous substances, Carbon Black is not classified for any toxicological or eco-toxicological endpoint. As a combustible dust it is designated by OSHA as a hazardous chemical.

#### Toxic Release Inventory (TRI)

Under EPA's Toxics Release Inventory (TRI) program the reporting threshold for 21 Polycyclic Aromatic Compounds (PACs) has been lowered to 100 pounds per year manufactured, processed, or otherwise used. (64 CFR 58666, Oct. 29, 1999) The 100 pounds/yr applies to the cumulative total of 21 specific PACs. Section 1.5.1 indicates that the de minimis exemption (i.e., disregarding amounts less than 0.1%) has been eliminated for PACs. Carbon black may contain certain of these PACs and the user is advised to evaluate their own TRI reporting responsibilities. (Note: Benzo (g,h,i) perylene is listed separately and has a 10 lb. reporting threshold.)

## SECTION 16: Other information

**Revision Date** : 10/23/2023

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### Party Responsible for the Preparation of This Document

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Soltex US GHS SDS