

SAFETY DATA SHEET

valid for CF.OS.P cut carbon fibers

in accordance with regulation (EC) N°1907/2006 – REACH

1 – PRODUCT AND COMPANY IDENTIFICATION

Product name	CARBISOT™ OS / CF.OS.P
Relevant uses	Thermoplastic resins, rubber belts, thermosetting composites, coatings, paints, non-wovens, abrasives and friction materials
Uses advised against	None
Company name	APPLY CARBON S.A.
Address	ZA Lanveur F-56440 LANGUIDIC
Telephone number	+33 2 97 65 10 89
Fax number	+33 2 97 65 11 20

2 – HAZARDS IDENTIFICATION

Main product risks Electricity conducting material. Airborne fibers can short circuit electrical equipment. The build-up of fine dust can lead to a risk of explosion.

Human health risks

Product	% wt	Classification	CLP CLASSIFICATION or Risk
Carbon Fiber	> 90		Fine dust can irritate skin, eye, & mucous membranes
Sizing			
Polyethylene	< 1,1	1999/45/CE 67/548/EEC	Eye Dam. 1 Aquatic Acute 1 Aquatic Chronic 2
5-chloro-2-methyl-3(2H)-isothiazolone / 2-methyl-3(2H)-isothiazolone (3:1)...	< 0,01	1999/45/CE 67/548/EEC	Acute Tox. 3 Skin Corr. 1B Acute Tox. 3 Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1 Acute Tox. 3
Other (Amine)	< 0,35	1999/45/CE 67/548/EEC	Acute Tox. 4, H302 Acute Tox. 4, H312 Eye Dam. 1, H318 Aquatic Chronic 2, H411

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	Polyurethane	< 0,5	Directive 1999/45/CE 2012 OSHA Hazard Communication Standard	Skin Sens. 1B hazardous
	Original Sizing	0,5-2	Mixture of unknown toxicity	

Environmental risks

Mainly composed of non-polluting product. Too low concentration of product considered toxic.

Specific risks

Avoid breathing fumes/gas/mist/vapors. If skin irritation get medical advice.

3 – COMPOSITION / COMPONENT INFORMATION

Substance/mixture

> 90 % of carbon in graphite form + sizing

Standard or chemical name

Carbon fiber on basis polyacrylonitrile (Carbon)

CAS number

7440-44-0

EINECS/ELINCS number

Polymer (231-153-3)

GHS/CLP or hazard symbols

Not applicable

R-phrase

Not applicable

Substances of Very High Concern (SVHC)

None or below 0.1%

CMR

None or below 0.1%

Sizing or other components

Sizing ≤ 6.5 % (Very low concentration of Eye/skin/aquatic toxicity product)

4 – FIRST AID MEASURES

General advice

Dust may be irritating. Change clothing. Show this MSDS to the doctor.

Eye contact

Rinse thoroughly with plenty of water, lifting the eyelids frequently for at least 15 min. Call immediately a doctor. Remove contact lenses if the victim door and if they can be easily removed. Continue rinsing.

Skin contact

Seek medical advice immediately. Remove clothes or shoes in contact with product. Wash thoroughly with water and soap for 10 minutes at least.

Inhalation

Seek medical advice immediately. Remove subject to fresh air. Seek medical attention if symptoms persist. If smokes are suspected to be still present, rescuer need to wear a respiratory

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protection. If person don't breath or painfully, don't make mouth-to-mouth and wait qualified person to put a respiratory mask.

Ingestion

Get medical attention immediately. Call a poison control center or doctor. Rinse mouth with water. Remove dental prostheses if necessary.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If a person has swallowed this product and is conscious, get him to drink small amounts of water. If the person is indisposed, stop drinking it as vomiting may cause an additional risk. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, hold the head down to prevent vomiting in the lungs. Chemical burns should be treated promptly by a doctor. Never give anything by mouth to an unconscious person. In the event of fainting, place the person in a lateral position of safety and call a doctor immediately. Ensure good air circulation. Remove anything that could be tight, such as a collar, tie or belt.

Note to physician

Inhalation: Possible release of gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects of exposure may be delayed. Symptomatic treatment and supportive therapy as indicated. After severe exposure the patient should be kept under medical supervision for at least 48 hours.

Skin contact: Harmful in contact with skin.

Eye contact: Causes serious eye damage.

Treatment: Not available

5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media

All usual extinguishing products appropriate for the surrounding fire are allowed. Avoid full water jet.

Specific hazards

Not flammable or combustible under normal uses.

Burning may cause degradation of chemicals and release hazardous & irritating gases (COx NOx, cyanidic acid...). Avoid breathing fumes or gas. Wear complete breathing equipment.

Special protective equipment for firefighters

In the event of fire, the site should be rapidly decontaminated by evacuating all persons near the scene of the accident. No action shall be taken involving any personal risk or without suitable training. Wear full-face, self-contained breathing apparatus, full

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protective gear, MSHA/NIOSH (approved or equivalent) to avoid inhalation of fumes or decomposition products and skin contact. Wear special chemical risk equipment.

None

Specific methods

6 – ACCIDENTAL RELEASE MEASURES

Individual precautions

No action shall be taken involving any personal risk or without suitable training. Evacuate the surroundings. Prevent access to persons not required and not wearing protective clothing. DO NOT TOUCH or walk through spilled material. Do not breathe vapor or mist. Ensure adequate ventilation. Wear suitable respiratory protection when ventilation is inadequate. Wear suitable personal protective equipment. Use a full individual chemical protection equipment. Ensure adequate ventilation. Avoid contact with the skin and the eyes.

Environmental precautions

Avoid worsening the dispersion. Prevent entry into waterways, sewers, basements or confined areas

Cleaning methods

Avoid dust formation. Clean up with sweep or vacuum.

7 – HANDLING AND STORAGE

Handling precautions

Dust can form an explosive mixture with air. Ensure adequate ventilation. Keep away from sources of ignition – no smoking. Avoid the dispersion of discharging loose fibres into open air. Wash thoroughly after handling.

Avoid contact with skin and eyes. Keep away from foodstuffs, drink, and tobacco.

No electrical appliances or protect them in sealed or pressurised cases. Insulating varnish may be applied to electronic boards and electrical terminals.

Technical measures

Electrical conducting material – do not cut the carbon fibre unnecessarily – do not allow contact with electric current sources.

Storage

Keep package close and store in a cool (<50°C), dry and well-ventilated area. Away from sunlight.

8 – EXPOSURE CONTROLS / INDIVIDUAL PROTECTION

Engineering measures

Ensure adequate ventilation on workstation to avoid dust accumulation. Showers, Eyewash stations, Ventilation systems.

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Contains trace of products considered as TWA: 0.2 mg/m³
Ceiling / Peak: 0.4 mg/m³ (Germany); Skin TWA: 0.05 mg/m³
(Austria) + Eye and skin damaging product.

See local regulations. VME for total dust: 10 mg/m³.

Long-term exposure for carbon fibers: 0.5 mg/m³ or 0.5
RFP/ml (breathable fiber-shaped particles).

Use appropriate certified breathing apparatus in the event of
high concentrations (poor ventilation, fine dust production).

NIOSH/MSHA approved respiratory protection should be worn.
Filter Gloves and protective clothing. Avoid skin contact
Safety glasses with side shields or face protection.

Wash face and hands before eating, drinking or smoking and
do it in separate areas. Use barrier skin cream or baby
cleansing milk to wash hands and face.

Control parameters

Personal protective equipment:

Respiratory protection

Skin/hand protection

Eye protection

Hygiene measures:

9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	solid
Form	Fibers/pellets
Colour	black or charcoal grey
Odour	none
pH	not applicable
Boiling point	not applicable
Melting point	> 3500 °C (carbon fiber), Sizing (160–200°C)
Vapour pressure/ Vapour density	not applicable
Specific gravity (filament)	1.6 to 2.0 no value. Can be assimilated to g/ml or g.cm ⁻³
Bulk density (short fibers)	0.3 to 0.55 kg/dm ³ depending on whether the fiber is cut, chopped or milled; depending on its length and the sizing type.
Flash point	no information available
Viscosity	no information available
Flammability	not applicable
Auto-ignition temperature	Not applicable; Sizing can be Flammable
Oxidizing properties	not applicable
Decomposition temperature	> 650 in air, > 290 in preparation
Solubility in water and solvents used	insoluble fibre – sizing agent is normally soluble in hot water
Partition coefficient (n-octanol/water)	no information available

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10 – STABILITY AND REACTIVITY

Stability	Stable. No waited reaction under normal conditions.
Conditions to avoid	See section 7 + avoid contact with heat, flame, spark
Hazardous reactions	Reactions with strong oxidizing agents. Risk of dust explosion if accumulation of fine dust in the air.
Acute toxicity	Product presumed nontoxic.
Hazardous decomposition products	Volatile Organic Compound (COx, NOx, ...)

11 – TOXICOLOGICAL INFORMATION

Local effects	Carbon fibers and dust may cause mechanical irritation of the eyes, skin, nose and throat. The filament is not breathable (IARC). None carbon fibers with diameter below 3.5 μm ($\geq 7 \mu\text{m}$) and length below 80 μm , therefore they are not considered as “respirable fiber-shaped particles” (RFP $\leq 3.5 \mu\text{m}$ diameter).
Other components (sizing...) <i>Toxicity</i>	The product is not considered globally toxic. Following data are just informative. Trace of Mixture ($< 0,01\%$) , 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone: <ul style="list-style-type: none">• LD50 Oral: 481 mg/kg (Rat); Amine: > 550 mg/Kg• LD50 dermal: 1008 mg/kg (Rat); Amine: > 1000 mg/Kg• LC50 Inhalation: 1.23 mg/L (Rat) 4 h Other (amine): <ul style="list-style-type: none">• LD50 Oral: 550 mg/Kg (OECD 404)• LD50 dermal: > 1000 mg/Kg• EYE: OECD 405 (powerful irritating product)
<i>Carcinogenicity</i>	Contains no ingredients reportable quantities above listed as a carcinogen
<i>Irritation</i>	No information available.
<i>Sensitization</i>	No information available.
<i>Mutagenic effects</i>	No information available.
<i>Reprotoxic</i>	Other (amine): > 100 mg/Kg NOAEL
<i>Endocrine system</i>	No information available.

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12 – ECOLOGICAL INFORMATION

Ecotoxicity

This material is not considered as dangerous for the environment. However, it contains Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone:

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to micro organism	Daphnia magna
Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone	EC50 0.03 – 0.13 mg/L 96 h EC50 0.11 – 0.16 mg/L 72 h EC50 = 0.31 mg/L 120 h	LC50= 1.6 mg/L Oncorhynchus mykiss 96 h		EC50 = 4.71 mg/L 48 h EC50 0.12 – 0.3 mg/L 48 h EC50 0.71 – 0.99 mg/L 48 h
Other	< 0,3	1 mg/L	> 100 mg/L	1000 mg/L

Persistence and degradability

Non-polluting, stable product.

Mobility in soil

No information available.

Bioaccumulation

No information available.

PBT/vPvB

These products are not classified as PBT or vPvB.

13 – DISPOSAL CONSIDERATIONS

Waste disposal

Dispose of wastes in a suitable place according to local regulations – do not incinerate. Incineration may cause carbon fibre particles to be dispersed into the air which may damage electrical equipment.

Treatment of contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product and in accordance with local regulation

14 – TRANSPORT INFORMATION

Carbon oversized products are **not classified as dangerous** in terms of national and international transport regulations – avoid temperature below +5°C or above +50°C even if it could contain product classified as dangerous (< 0.3%; ADR 9, IMDG 9 and IATA 9).

15 – REGULATORY INFORMATION

These products are not submitted to regulations (EC) n°1272/2008 (CLP), 67/548/EEC, nor n°1999/45/EC. Nevertheless, we consider health of our customer as something above all regulation. That is why all our chemicals don't contain substances of very high concern (SVHC, REACH: EC 1907/2006 & 453/2010) or substances submitted to authorization (ANNEX XIV, REACH) and all substances which are submitted to CLP regulation are listed in the table part 2.

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16 – OTHER INFORMATION

We believe that the information contained in this safety data sheet is correct to the best to our knowledge. However, the information contained in this sheet is not exhaustive. This safety data sheet does not anticipate all the circumstances in which the product may be used, nor all the physical and mental characteristics of each individual responsible for its transport or transformation. It is the duty of the user to test and use this product safely, in accordance with the laws and regulations in force. Unless otherwise stated in writing, we accept no responsibility for complaints or damage caused related to the use of this product. For all additional information, please contact the Quality Assurance Department of Apply Carbon.

Apply Carbon transforms the carbon fibers only by cutting, chopping or milling, at very various lengths, to meet the very large needs of its customers.

Apply Carbon sometimes also mixes different carbon fibers for specific applications or customers requirements.

All the information given in this Material Safety Data Sheet are excerpt from these of its carbon fibers suppliers (TORAYCA, TOHO-TENAX, CYTEC [BP-AMOCO], HEXCEL [HERCULES]...).