



SAFE USE INSTRUCTION SHEET

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Version 2

0. General Information

This Safe Use Instruction Sheet is the document provided by Owens Corning to communicate recommended safe handling and use instruction for articles not regulated by OSHA Hazard Communication Standard, 29 CFR 1910.1200

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Carbon Fiber Rebar
Synonyms	Carbon Fiber Reinforced Polymer Bar, CFRP Bar, CFRP Rebar, CFRP Laminates, CFRP Tapes, ASLAN™200 CFRP Bar, ASLAN™400 CFRP Laminates, ASLAN™500 CFRP Tapes
Document code	OCCM10052
Recommended Use	Industrial and professional use: reinforcement of structures of cement, concrete and others mineral matrix; reinforcement of resins in corrosive medium
Supplier Address	Owens Corning Infrastructure Solutions, LLC One Owens Corning Parkway Toledo, Ohio 43659
Company Phone Number	1-800-GET-PINK or 1-800-438-7465
E-mail address	productcompliance@owenscorning.com
Company Website	http://www.owenscorning.com/

2. HAZARDS IDENTIFICATION

Regulatory Status	This product is not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200. Carbon Fiber Rebar products are articles. Articles which meet the definition of 29 CFR 1910.1200 (b)(6)(v) (a manufactured item other than a fluid or a particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical (as determined in paragraph (d) of this section), and does not pose a physical hazard or health risk to employees) are not regulated by OSHA HazCom Standard
Other Information	May cause skin abrasion in case of direct manual handling. When being cut or grinded these products may release dust (Particles Not Otherwise Regulated). See Section 8 for Exposure Limit Data. As supplied, the product is not explosive. However, the built-up of carbon fiber fines and dust can lead to a risk of dust explosion. Carbon material dust may cause electrical shorts in electrical devices.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Carbon Fiber Rebars are made of ca. 70 - 80% (w/w) of Carbon Fibers and ca. 20 - 30% (w/w) of cured thermoset resin. They are available in the form of cylindrical bars, of several nominal diameters and lengths, laminates and tapes.

4. FIRST AID MEASURES

Description of First Aid Measures

Eye contact	• DO NOT rub or scratch eyes • Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes • If eye irritation persists: Get medical advice/attention
Skin contact	• DO NOT rub or scratch affected area • Wash off immediately with soap and plenty of cold water • If skin irritation persists, call a physician
Inhalation	• Inhalation of this product is unlikely
Ingestion	• Accidental ingestion of this product is unlikely • Rinse mouth with water and drink water to remove fibers from the throat • If symptoms persist, call a physician

5. FIRE-FIGHTING MEASURES

Flammable properties	• In case of major and prolonged heat or fire carbon fiber may burn and lead to a Class A type of fire. • Class A fire: fires involving solid materials, usually of an organic nature, in which combustion normally takes place with formation of glowing embers.
Suitable extinguishing media	• Flood fire area with water from a distance
Protective equipment and precautions for firefighters	• As in any fire, wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	• Accidental release of this product is unlikely
Methods for cleaning up	• Accidental release of this product is unlikely

7. HANDLING AND STORAGE

Precautions for safe handling	• Prevent and/or minimize dust formation • Wear appropriate personal protective equipment in case of direct contact with the product • Protect all electrical equipment, in or near areas in which carbon fiber is handled or used, from contact with carbon airborne particles and filaments to avoid possible damage caused by electrical shorts. Carbon airborne particles and filaments should be controlled so as to minimize (1) skin irritation, (2) electrical shorts in switch gear, etc. due to electrical conductivity of carbon fiber • Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Storage Conditions	• Do not store Carbon Fiber Rebars directly on ground. Place timber pallets under bars to keep them free from dirt & mud and to provide easy handling. Store Carbon Fiber Rebars under covers to avoid direct sunlight & other chemical substances contact • Keep away from open flames and other ignition sources.
Incompatible materials	• Do not store together with oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

There is no Occupational Exposure Limit directly associated with Carbon Fiber Rebars, except airborne nuisance dust which may

occur under certain process conditions (e.g. cutting and grinding)

The occupational exposure limits below mentioned are applicable to airborne fibre exposure and/or to dust exposure.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
Carbon fiber, not respirable -	TWA: 1 fiber/cm ³ respirable fibers: length >5 µm, diameter less than 3 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable particulate matter	-	-

NIOSH REL *Immediately Dangerous to Life or Health*

OSHA PEL: TWA for Inert or Nuisance Dust are: 5 mg/m³ (Respirable fraction) and 15 mg/m³ (Total dust)

ACGIH : TWA for Inert or Nuisance Dust are: 3 mg/m³ (Respirable fraction) and 10 mg/m³ (Inhalable fraction)

Engineering Controls

If and when cutting or grinding Carbon Fiber Rebars in confined spaces provide local exhaust and/or general ventilation to maintain exposure below applicable occupational exposure limits

Electrical equipment shall be designed/protected in order to prevent electrical short circuit caused by infiltration of carbon dust.

Individual protection measures, such as personal protective equipment

Eye/face protection

- Avoid contact with eyes
- Personal Protective Equipments usually used on Construction jobsite are appropriate

Skin and body protection

- Avoid contact with skin
- Wear protective gloves
- Personal Protective Equipments usually used on Construction jobsite are appropriate

Respiratory protection

- If and when cutting or grinding Carbon Fiber Rebars in confined spaces provide local exhaust and/or general ventilation to maintain exposure below applicable occupational exposure limits
- Personal Protective Equipments usually used on Construction jobsite are appropriate

General Hygiene Considerations • Wash hands before breaks and immediately after handling products

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Appearance	In the form of cylindrical bars, of various diameter (1/4 to 1-5/8 in); laminates; tapes
Odor	Odorless
Color	Black
Water solubility	Insoluble in water
Density	ca. 1.4 - 1.7 (H ₂ O = 1)
Explosive properties	Carbon fiber dust can form an explosive mixture with air.
Electrical properties	Carbon fiber is electrically conductive.
Decomposition temperature	The hardened thermoset resin starts to decompose at about 200°C

10. STABILITY AND REACTIVITY

Stability

- Stable under normal conditions
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Possibility of Hazardous Reactions • Carbon fiber dust can form an explosive mixture with air.

Hazardous Decomposition Products • None under normal use conditions

- Small quantities of undetermined hazardous decomposition products may be released in case of heat exposure or during a fire

- Carbon fiber burning will produce CO₂, CO and minute amounts of N₂, HCN.

11. TOXICOLOGICAL INFORMATION

Product Information

Under normal conditions of use no health effect is anticipated. Dusts and fibers may cause temporary skin and mucous membranes itching due to mechanical abrasion effect of fibers. Mechanical abrasion is not considered as a health hazard in the meaning of the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Inhalation may cause coughing, nose and throat irritation and sneezing. High exposures may cause difficult breathing, congestion and chest tightness

Components Information

Carbon fibers are not respirable according to the World Health Organization (WHO) definition. Respirable fibers have a diameter (d) smaller than 3µm, a length (l) larger than 5µm and a l/d-ratio larger than or equal to 3. Fibers with diameters greater than 3 microns, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease. Small amounts of respirable carbon fibers can be generated from this product under very particular circumstances. Carbon Fibers Subchronic Toxicity: Two subchronic inhalation tests in rats exposed to carbon fibers have been conducted. In one test, rats were exposed to fibers for 16 weeks. Pulmonary function tests performed on the test animals before necropsy did not show any significant or consistent changes. The only pulmonary finding related to exposure was the occurrence of phagocytosis by alveolar macrophages. No inflammation or fibrosis was observed. In the second study, rats were also exposed to carbon fibers for 16 weeks. Based on clinical signs, no effects due to exposure were observed. Histopathological evaluation revealed non-fibrous particles in the pulmonary lymphoid clearance system and in alveolar macrophages. There were no signs of fibrosis. Carbon Fibers Mutagenicity: Several in vitro mutagenicity tests have been performed on carbon fibers. Carbon fibers have been found to be negative in the gene mutation assay in bacteria (Ames test), did not cause sister chromatid exchanges in Chinese hamster ovary (CHO) cells, and did not cause unscheduled DNA synthesis in rat liver cells or forward mutations in studies with CHO cells.

12. ECOLOGICAL INFORMATION

This product is not expected to be hazardous for the environment

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods according to international transport regulations

15. REGULATORY INFORMATION

International Inventories

These products are articles. Articles are exempted from registration or listing under chemicals inventories like TSCA (USA), DSL/NDL (CAN), REACH (EU), ENCS (JP), IECSC (CN), KECL (KR), PICCS (PH), AICS (AUS), TCSI (Taiwan)

California Proposition 65

This product is not regulated under California Proposition 65

16. OTHER INFORMATION

Prepared By
Creation Date

FCs
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21-Oct-2020

Revision Note

complete review and Supplier Address

Disclaimer

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use

End of Safe Use Instruction Sheet