

## 1. Product and company identification

### Product identifier

Trade name: 616XXX - Carbon Fiber

This safety data sheet pertains to the following products:

Article No. 616G12 - Carbon Fiber Cloth

Article No. 616G15 - Woven Carbon Fiber Stockinette

### Relevant identified uses of the substance or mixture and uses advised against

General use: Article: carbon-fibers. For orthopedic procedures  
Reserved for industrial and professional use.

### Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care  
Street/POB-No.: 3820 W. Great Lakes Drive  
Postal Code, city: Salt Lake City, UT 84120  
USA

WWW: [www.ottobockus.com](http://www.ottobockus.com)

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,  
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),  
Email: [USRegulatory@ottobock.com](mailto:USRegulatory@ottobock.com)

Additional information: Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency phone number

CHEMTREC, Telephone: +1 (800) 424-9300

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

## 2. Hazards identification

### Emergency overview

Appearance: Form: solid  
Color: gray up to black

Odor: odorless

Classification: Article not subject to hazard labelling or classification.

### Regulatory status

This material is not considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Hazards not otherwise classified

Processing, e.g. by cutting, sawing or grinding, can produce particles and dust. For risks which have to be observed thereby, see section 7: Handling, section 8: Exposure controls / personal protection and section 11: Toxicology.

Carbon Fiber is electrically conductive. It can cause short circuits within electrical equipment, if material dusts penetrate into the ambient air.

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

see section 11: Toxicological information

## 3. Composition / Information on ingredients

Chemical characterization: Carbon fibers >95%, Fibers: not respirable

## 4. First aid measures

General information: For mechanical processing: dust formation.

In case of inhalation: In case of troubles after inhalation of dust:  
Move victim to fresh air. Seek medical attention.

Following skin contact: Dust:  
Remove residues with soap and water. Seek medical treatment in case of troubles.

After eye contact: Dust:  
Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After swallowing: Ingestion is not considered a possible route of exposure.  
Dust:  
Rinse mouth and drink large quantities of water. Seek medical attention if problems persist.

### Most important symptoms/effects, acute and delayed

For mechanical processing: mild irritant

### Information to physician

Treat symptomatically.

## 5. Fire fighting measures

Flash point/flash point range:

No data available

Auto-ignition temperature: No data available

Suitable extinguishing media:

Water spray jet, foam, dry chemical powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

Full water jet.

### Specific hazards arising from the chemical

In case of fire may be liberated: carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

## 6. Accidental release measures

Personal precautions:	Avoid generation of dust. Provide adequate ventilation. In the case of the formation of dust: Eliminate all ignition sources if safe to do so. Do not breathe dust. Ensure adequate ventilation, especially in confined areas. Wear protective equipment. Avoid contact with skin and eyes.
Environmental precautions:	Discharge into the environment must be avoided.
Methods for clean-up:	Take up mechanically, placing in appropriate containers for disposal.

## 7. Handling and storage

### Handling

Advices on safe handling:	For mechanical processing: Provide adequate ventilation. Avoid generation of dust. Wear protective equipment. The use of local exhaust ventilation is recommended. Do not breathe dust. Avoid contact with skin and eyes.
Precautions against fire and explosion:	Fine dust: danger of dust explosion. Carbon Fiber is electrically conductive. It can cause short circuits within electrical equipment, if material dusts penetrate into the ambient air.

### Storage

Requirements for storerooms and containers:	Store at room temperature. Keep away from heat.
Hints on joint storage:	Do not store together with oxidizing agents. Keep away from food, drink and animal feedingstuffs.

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: TWA	10 mg/m <sup>3</sup> (Dust limit value, inhalable fraction)
USA: ACGIH: TWA	3 mg/m <sup>3</sup> (Dust limit value, respirable fraction)
USA: OSHA: TWA	15 mg/m <sup>3</sup> (Dust limit value, total dust)
USA: OSHA: TWA	5 mg/m <sup>3</sup> (Dust limit value, respirable fraction)

### Engineering controls

For mechanical processing: Provide adequate ventilation.  
The use of local exhaust ventilation is recommended.  
See also information in chapter 7, section storage.

### Personal protection equipment (PPE)

Eye/face protection:	For mechanical processing: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010. If necessary: Wear face protective shield.
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**Skin protection:** For mechanical processing: Wear suitable protective clothing.  
For mechanical processing:  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

**Respiratory protection:** For mechanical processing:  
Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Particulates filter P2 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

**General hygiene considerations:**  
Avoid generation of dust. Do not breathe dust.  
Wash hands before breaks and after work.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

**Appearance:** Form: solid  
Color: gray up to black

**Odor:** odorless

**Odor threshold:** No data available

**pH:** No data available

**Melting point/freezing point:** No data available

**Initial boiling point and boiling range:** No data available

**Flash point/flash point range:** No data available

**Evaporation rate:** No data available

**Flammability:** No data available

**Explosion limits:** No data available

**Vapor pressure:** No data available

**Vapor density:** No data available

**Density:** at 68 °F: 1.7 - 2 g/cm<sup>3</sup>

**Water solubility:** at 68 °F: carbon fibers: insoluble

**Partition coefficient: n-octanol/water:** No data available

**Auto-ignition temperature:** No data available

**Thermal decomposition:** Carbon fibers: > 650 °C

**Ignition temperature:** 662 °F

## 10. Stability and reactivity

**Reactivity:** No data available.

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of hazardous reactions:**  
Fine dust: danger of dust explosion.  
Carbon Fiber is electrically conductive. It can cause short circuits within electrical equipment, if material dusts penetrate into the ambient air.

Conditions to avoid: Avoid generation of dust. Keep away from heat.

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products:

In case of fire may be liberated: carbon monoxide and carbon dioxide.

Thermal decomposition: Carbon fibers: > 650 °C

## 11. Toxicological information

### Toxicological tests

Toxicological effects: Acute toxicity (oral): Lack of data.  
 Acute toxicity (dermal): Lack of data.  
 Acute toxicity (inhalative): Lack of data.  
 Skin corrosion/irritation: Lack of data.  
 Serious eye damage/irritation: Lack of data.  
 Sensitisation to the respiratory tract: Lack of data.  
 Skin sensitisation: Lack of data.  
 Germ cell mutagenicity/Genotoxicity: Lack of data.  
 Carcinogenicity: Lack of data.  
 Reproductive toxicity: Lack of data.  
 Effects on or via lactation: Lack of data.  
 Specific target organ toxicity (single exposure): Lack of data.  
 Specific target organ toxicity (repeated exposure): Lack of data.  
 Aspiration hazard: Lack of data.

Other information: Fibers: not respirable

### Symptoms

For mechanical processing: mild irritant

## 12. Ecological information

### Ecotoxicity

Effects in sewage plants: The insoluble part can be precipitated mechanically in suitable sewage treatment plants.

Further details: No data available

### Mobility in soil

No data available

### Persistence and degradability

Further details: No data available

### Additional ecological information

General information: Discharge into the environment must be avoided.

### 13. Disposal considerations

#### Product

Recommendation: Incinerate according to applicable local, state and federal regulations.

#### Package

Recommendation: Dispose of waste according to applicable legislation.  
Non-contaminated packages may be recycled.

### 14. Transport information

#### UN number

ADR/RID, IMDG, IATA-DGR:  
not applicable

#### UN proper shipping name

ADR/RID, IMDG, IATA-DGR:  
Not restricted

#### Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR:  
not applicable

#### Packing group

ADR/RID, IMDG, IATA-DGR:  
not applicable

#### Environmental hazards

Marine pollutant: no

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

#### USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

#### Sea transport (IMDG)

Proper shipping name:: Not restricted  
Marine pollutant: no

#### Air transport (IATA)

Proper shipping name:: Not restricted

#### Further information

No dangerous good in sense of these transport regulations.

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

This product is an article as defined by TSCA regulations, and is exempt from TSCA inventory listing requirements.

### National regulations - U.S. State Regulations

No data available

### National regulations - Great Britain

Hazchem-Code: -

## 16. Other information

Hazard rating systems:



### NFPA Hazard Rating:

Health: 1 (Slight)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

### HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
 AS/NZS: Australian Standards/New Zealand Standards  
 CAS: Chemical Abstracts Service  
 CFR: Code of Federal Regulations  
 CLP: Classification, Labelling and Packaging  
 DMEL: Derived minimal effect level  
 DNEL: Derived no-effect level  
 EC: European Community  
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
 EN: European Standard  
 EQ: Excepted quantities  
 IATA: International Air Transport Association  
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IMDG Code: International Maritime Dangerous Goods Code  
 IMO: International Maritime Organization  
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
 MFSU: Manufacture, formulation, supply and use  
 OEL: Occupational Exposure Limit Value  
 OSHA: Occupational Safety and Health Administration  
 PBT: Persistent, bioaccumulative and toxic  
 PNEC: Predicted no-effect concentration  
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
 TLV: Threshold Limit Value  
 TRGS: Technical Rules for Hazardous Substances  
 TSCA: Toxic Substance Control Act  
 vPvB: Very persistent and very bioaccumulative  
 WEL: Workplace Exposure Limit

Reason of change: Changes in section 8: Occupational exposure limit values

Date of first version: 6/27/2007

### Department issuing data sheet

Contact person: see section 1: Department responsible for information



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

## 616XXX - Carbon Fiber

Material number 616XXX

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The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.