

## 616x - Carbon Fiberglass Textile Material

Material number 616x

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### 1. Identification

#### Product identifier

Trade name: 616x - Carbon Fiberglass Textile Material

This safety data sheet pertains to the following products:  
616H11 - Carbon Fiberglass Webbing  
616G14 - Woven Carbon Fiberglass Stockinette

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

General use: Article: carbon/glass-textile material 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  
Zip code, city: Salt Lake City, UT 84120  
USA

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

Telephone: +1 (801) 956-2400

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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 telephone number

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

### 2. Hazard identification

#### Classification of the substance or mixture

Article not subject to hazard labelling or classification.

#### Label elements

not applicable

#### Other hazards

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.

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### 3. Composition/information on ingredients

#### Mixtures

Chemical characterization: Carbon/glass-fibers: > 95% (Carbonfibers on the basis of polyacrylonitrile)

CAS-Number: -

Relevant ingredients:

| CAS No.        | Designation   | Concentration | Classification  |
|----------------|---|---------------|---|
| CAS 25068-38-6 | Bisphenol A epoxy resin<br>(molecular-weight < 700) | < 1 %         | Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2. |

The actual concentration or concentration range is withheld as a trade secret.

### 4. First aid measures

|                         |   |
|-------------------------|---|
| General information:    | For mechanical processing: dust formation.  |
| In case of inhalation:  | Provide fresh air. Rinse mouth thoroughly with water.<br>Seek medical treatment in case of troubles.  |
| Following skin contact: | Remove residues with soap and water.<br>Avoid rubbing. Fibers may penetrate deeper into the skin by rubbing.<br>In the event of persistent symptoms seek medical treatment.               |
| After eye contact:      | Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. In case of troubles or persistent symptoms, consult an ophthalmologist.                   |
| After swallowing:       | Rinse mouth thoroughly with water. Give affected person large quantities of water, better milk.<br>Seek medical attention. Subsequent observance for Obstructing of the bowel/intestines. |

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

Fibers and dust: Skin irritation, mucous membrane irritation, eye irritations.  
May produce an allergic reaction.

#### Information to physician

Treat symptomatically.

### 5. Fire-fighting measures

#### Suitable (and unsuitable) extinguishing media

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.

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### Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus.

Additional information: You have to dispose of contaminated extinguishing water according to the regulations of the authorities.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation.

Avoid generation of dust. Wear suitable protective clothing.

Environmental precautions:

Discharge into the environment must be avoided.

### Methods and material for containment and cleaning up

Methods for clean-up: Take up mechanically, placing in appropriate containers for disposal. Final cleaning.

## 7. Handling and storage

### Precautions for safe handling

Advices on safe handling: For mechanical processing:

Provide adequate ventilation. Avoid generation of dust.

Wear suitable protective clothing. The use of local exhaust ventilation is recommended.

Precautions against fire and explosion:

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

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Store at room temperature. (< 50 °C)

Protect from moisture contamination. (< 85 %)

Hints on joint storage:

Do not store together with oxidizing agents.

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### 8. Exposure controls/personal protection

#### Control parameters

Occupational exposure limit values:

| CAS No.    | Designation                               | Type            | Limit value  |
|------------|---|-----------------|--|
| -          | 616x - Carbon Fiberglass Textile Material | USA: ACGIH: TWA | 10 mg/m <sup>3</sup><br>(Dust limit value, inhalable fraction)   |
|            |   | USA: ACGIH: TWA | 3 mg/m <sup>3</sup><br>(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><br>(Dust limit value, respirable fraction)   |
| 65997-17-3 | Glass fibers                              | USA: ACGIH: TWA | 1 fibers/cm <sup>3</sup><br>(Synthetic vitreous fibres, Continuous filament glass fibres)                |
|            |   | USA: ACGIH: TWA | 5 mg/m <sup>3</sup><br>(Synthetic vitreous fibres, Continuous filament glass fibres, inhalable fraction) |
|            |   | USA: NIOSH: TWA | 3 fibers/cm <sup>3</sup>   |
|            |   | USA: NIOSH: TWA | 5 mg/m <sup>3</sup><br>(glass wool, fiberglass, glass fibers)  |

Additional information: This limit values shall be applied in the case of formation of critical WHO-fibres by mechanical processing.

#### Appropriate engineering controls

For mechanical processing: Provide adequate ventilation.  
The use of local exhaust ventilation is recommended.

#### Personal protection equipment (PPE)

Respiratory protection: For mechanical processing:  
Half mask with particle filter 1 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: For machine processing:  
Protective gloves against mechanical risks according to OSHA Standard - 29 CFR: 1910.138  
In case of manual processing:  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: butyl caoutchouc (butyl rubber)-Breakthrough time: >480 min.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: For mechanical processing:  
Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: For mechanical processing: Wear suitable protective clothing.

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### General hygiene considerations:

Avoid generation of dust. Do not breathe dust.  
Wash hands before breaks and after work.  
Avoid rubbing. Fibers may penetrate deeper into the skin by rubbing.  
Remove fibers and/or dust from working clothes using a vacuum cleaner  
Glass fibers-dust:  
Avoid contact with skin and eyes.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

|  |  |
|--|--|
| Physical state at 68 °F and 101.3 kPa    | Form: solid  |
| Color:                                   | black and whitish                                  |
| Odor:                                    | odorless   |
| Odor threshold:                          | No data available                                  |
| Melting point/freezing point:            | Carbon: approx. 6332 °F                            |
| Initial boiling point and boiling range: | No data available                                  |
| Flammability:                            | No data available                                  |
| Explosion limits:                        | No data available                                  |
| Flash point/flash point range:           | No data available                                  |
| Evaporation rate:                        | No data available                                  |
| Auto-ignition temperature:               | No data available                                  |
| Decomposition temperature:               | Carbon fibers: > 650 °C<br>Coating agent: > 290 °C |
| pH:                                      | No data available                                  |
| Viscosity:                               | No data available                                  |
| Water solubility:                        | at 68 °F: glass/carbon fibers: insoluble           |
| Partition coefficient: n-octanol/water:  | No data available                                  |
| Vapor pressure:                          | No data available                                  |
| Density:                                 | at 68 °F: 1.7 - 2.6 g/cm <sup>3</sup>              |
| Vapor density:                           | No data available                                  |
| Particle characteristics:                | Not applicable                                     |

### Additional information

|                       |                |
|-----------------------|----------------|
| Ignition temperature: | Carbon: 662 °F |
|-----------------------|----------------|

## 10. Stability and reactivity

|                     |   |
|---------------------|---|
| Reactivity:         | No data available   |
| Chemical stability: | Stable under recommended storage conditions.<br>Glass fibers: not combustible |

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### Possibility of hazardous reactions:

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

Conditions to avoid: Keep away from heat.

Incompatible materials: Strong oxidizing agents

### Hazardous decomposition products:

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

## 11. Toxicological information

### Information on toxicological effects

#### 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:

For mechanical processing:  
Possible in traces: formation of WHO-fibers  
Definition WHO-fibers: length (L) > 5 µm and diameter (D) < 3 µm and L:D > 3:1  
classification WHO-fibers: Causes concern for man owing to possible carcinogenic effects. Should be regarded as if they are carcinogenic to man.

### Symptoms

Fibers and dust: Skin irritation, mucous membrane irritation, eye irritations.  
May produce an allergic reaction.

## 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

### Persistence and degradability

Further details: Glass fibers: Product is not biodegradable.

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### Bioaccumulative potential

Partition coefficient: n-octanol/water:

No data available

### Mobility in soil

No data available

### Other adverse effects

General information: Discharge into the environment must be avoided.

## 13. Disposal considerations

### Waste treatment methods

#### 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

DOT, IMDG, IATA-DGR: not applicable

### UN proper shipping name

DOT, IMDG, IATA-DGR: Not restricted

### Transport hazard class(es)

DOT, IMDG, IATA-DGR: not applicable

### Packing group

DOT, IMDG, IATA-DGR: not applicable

### Environmental hazards

Marine pollutant: no

### Transport in bulk according to IMO instruments

No data available

### Special precautions for user

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

Proper shipping name: Not restricted

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**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

**Further regulations, limitations and legal requirements**

No data available

**16. Other information**Text for labeling: See information supplied by the manufacturer.  
Revision date: 12/17/2025  
Date of first version: 1/3/2008  
Reason of change: General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022  
General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

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:

Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
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  
DOT: Department of Transportation's Safety Regulations (USA)  
EC: European Community  
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods



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EN: European Standard  
EQ: Excepted quantities  
Eye Irritation: Eye irritation  
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  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
Sensitization - skin: Skin sensitisation  
Skin Irritation: Skin irritation  
TRGS: Technical Rules for Hazardous Substances  
TSCA: Toxic Substance Control Act  
vPvB: Very persistent and very bioaccumulative  
WHO: World Health Organization

Literature: IARC Vol 81, 23.08.2002 Man-made Vitreous Fibres  
TRGS 905, 05/2008 Verzeichnis krebserzeugender, erbgutverändernder oder fortpflanzungsgefährdender Stoffe

### Department issuing data sheet

Contact person: see section 1: Department responsible for information

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.