

1. Product and company identification

Product identifier

Trade name: 616H10 - Carbon Fiber Webbing

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

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

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: black

Odor: odorless

Classification: Article not subject to hazard labelling or classification.

Precautionary statements:

Avoid breathing dust.

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.

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%

Relevant ingredients:

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

4. First aid measures

General information:	For mechanical processing: dust formation.
In case of inhalation:	In case of troubles after inhalation of dust: Provide fresh air. Seek medical attention.
Following skin contact:	Remove residues with soap and water. In case of skin irritation, consult a physician.
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:	Never give anything by mouth to an unconscious person. Repeatedly drink water. Seek medical aid in case of troubles.

Most important symptoms/effects, acute and delayed

Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

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: halogen oxides, carbon monoxide and carbon dioxide.
Danger of formation of toxic pyrolysis products.

Protective equipment and precautions for firefighters:

Wear self-contained breathing apparatus. Wear appropriate protective equipment.

Additional information:

Cool endangered containers with water spray and, if possible, remove from danger zone.
Do not breathe fumes.
Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions:

Handle in accordance with good industrial hygiene and safety practice.
At processing: Do not breathe dust. Ensure adequate ventilation, especially in confined areas.

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 suitable protective clothing. The use of local exhaust ventilation is recommended.
When using do not eat, drink or smoke.

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.
Avoid generation of dust.

Storage

Requirements for storerooms and containers:

Store at room temperature. (< 50 °C)
Protect from moisture contamination. (< 85 °C)

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 ³ (Dust limit value, inhalable fraction)
USA: ACGIH: TWA	3 mg/m ³ (Dust limit value, respirable fraction)
USA: OSHA: TWA	15 mg/m ³ (Dust limit value, total dust)
USA: OSHA: TWA	5 mg/m ³ (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

Skin protection:

For mechanical processing: Wear suitable protective clothing.

protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Glove material: Butyl caoutchouc (butyl rubber) - Breakthrough time: >120 min.

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:

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

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: black

Odor:

odorless

Odor threshold:

No data available

pH:

No data available

Melting point/freezing point:

approx. 6332 °F

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/cm³

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

Coating agent: > 290 °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, strong acids, strong bases

Hazardous decomposition products:

In case of fire may be liberated: halogen oxides, carbon monoxide and carbon dioxide.
Danger of formation of toxic pyrolysis products.

Thermal decomposition: Carbon fibers: > 650 °C
Coating agent: > 290 °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: 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

For mechanical processing: mild irritant.
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

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 - Canada

Bisphenol A epoxy resin (molecular-weight < 700): DSL: listed

National regulations - Great Britain

Hazchem-Code: -

16. Other information

Text for labeling: See information supplied by the manufacturer.

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
 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
 EC: European Community
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
 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
 MFSU: Manufacture, formulation, supply and use
 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
 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

Literature: TRGS 905, 05/2008 Verzeichnis krebserzeugender, erbgutverändernder oder fortpflanzungsgefährdender Stoffe

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

Date of first version: 8/31/2007

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.