

Tenax® Short Fiber

Metal Coated

Product Information on Safe Handling

Revision 05 (en), effective date 1 Oct. 2015, updated 1 Aug. 2020

According to Regulation (EC) No 1907/2006 [REACH] Article 3(3) this product is classified as article, hence no obligation exists to create a safety data sheet as required by REACH Article 31/32. This Product Information was created in the style of REACH Annex II/Regulation (EU) 2015/830 to inform about a safe and careful handling with this product.

Section 1: Identification of the article and of the company

1.1 Product Identifier

Tenax® Short Fiber, metal-coated

Product type

Tenax®-J HT C903, nickel-coated

Tenax®-J HT C923, nickel-coated

REACH-registration status

This product is treated as an article. Articles are exempted from registration in accordance with Regulation (EC) No 1907/2006.

1.2 Relevant identified uses of the article and uses advised against

As filler or manufacturing of non-woven fabrics/-papers.

1.3 Details of the supplier of the Product Information on Safe Handling

Teijin Carbon Europe GmbH

Kasinostr. 19-21

42103 Wuppertal

GERMANY

Tel: +49 202 32-3225

Homepage: www.tejincarbon.com

Responsible department

E-Mail: safety@tejincarbon.com

1.4 EMERGENCE TELEPHONE NUMBER

+49 228-19240 (24h) German/English

Section 2: Hazards identifications

2.1 Classification


This product is an **article**, and hence does not require a classification and labelling according to EU regulations.

Self-Classification according to Regulation (EC) No 1272/2008 [CLP]

Skin Sens. 1	May cause an allergic skin reaction.
Carc. 2	Suspected of causing cancer.
STOT RE 1	Causes damage to organs through prolonged or repeated exposure.

2.2 Label elements

Self-Labeling elements according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms	 GHS08	
Signal word	Danger	
Hazard statements	H317	May cause an allergic skin reaction.
	H351	Suspected of causing cancer.
	H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements	P261	Avoid breathing dust.
	P280	Wear protective gloves.
	P302 + P352	IF ON SKIN: Wash with plenty of cold water.
	P308 + P313	If exposed or concerned: Get medical advice/attention.
	P333 + P313	IF skin irritation or rash occurs: Get medical advice/attention.
	P405	Store locked up.

Supplemental Hazard information (EU)

EUH 208: Contains „Reaction Product: Bisphenol-A-(Epichlorhydrin); Epoxy Resin (Number Average Molecular Weight ≤ 700“). May produce an allergic reaction.

2.3 Other hazards

Classification acc. to Annex XIII of REACH Reg. (EC) No 1907/2006 as PBT or vPvB

According to the results of the assessments, this product contains neither a PBT nor a vPvB substances.

Other hazards which do not result in classification

Not known.

Section 3: Composition/information of ingredients

3.1 Product type

This product is an **article** acc. to regulation (EC) 1907/2006 [REACH].

It does not contain any substances that are intended to be released under normal or foreseeable applications.

Description

Nickel-coated chopped carbon fiber.

3.2 Composition/information of ingredients

No.	Substances	EU-INDEX EINECS/ELINCS CAS No.	Content by weight % (w/w)	GHS/CLP		M-factor/ specific limit value	Notice
1.	Carbon fiber based on polyacrylonitrile (PAN)	Polymer: (231-153-3) 308063-67-4 / 7440-44-0 -	40 - ≤ 60	Not classified.			[A] [2]
2.	Nickel	028-002-00-7 231-111-4 7440-02-0	40 - ≤ 60	Skin Sens. 1A Carc.2 STOT RE 1	H317 H351 H372		[A] [1]
3.	Reaction Product: Bisphenol-A-(Epichlorhydrin); Epoxy Resin (Number Average Molecular Weight ≤ 700“	603-075-00-3 500-033-5 25068-38-6	0.1 - < 1.0	Skin Irrit. 2 Skin Sens.1 Eye Irrit. 2 Aquatic Chronic 2	H315 H317 H319 H411	C ≥ 5 % C ≥ 5 %	[A] [1]

[A] = Ingredient.

[B] = Impurity.

[1] = Substance classified as hazardous to health or the environment.

[2] = Substance with an occupational exposure limit value.

Additional information

Full texts of phrases are shown in section 16.

Section 4: First aid measures

4.1 Description of first aid measures

General information

Avoid contact with unprotected body parts. Remove any clothing that has been contaminated with the product.

Following inhalation

Seek medical attention. Bring affected person to fresh air.

Following skin contact

Rinse affected area thoroughly with lot of cold water. Do not use warm water since it aggravates the skin itching/irritation. For rashes seek medical advice.

Following eye contact

Irrigate eyeball thoroughly with water for at least 10 minutes, if discomfort persists seek medical attention. Remove contact lenses, if present and easy to do, continue rinsing.

Following ingestion

Seek medical attention. Rinse mouth out with water then give plenty of water to drink.

Self-protection of the first aider

Self-aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed**Symptoms and Effects**

Preexisting sensitization and skin disorders may be aggravated.

4.3 Indication of any immediate medical attention and special treatment needed**Special treatment**

First aid, treatment of symptoms.

Notes for the doctor

Treat symptomatically.

Section 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Foam, dry powder, water spray jet, carbon dioxide.

Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the article**Hazardous combustion products**

At high temperatures ≥ 100 °C an exothermic reaction can be initiated causing the temperature to rise to > 500 °C. At temperatures above ≥ 650 °C, decomposition of the carbon fiber can cause respirable fibre particles (WHO-fibres). In addition, hazardous pyrolysis residues such as metal oxides can be formed.

5.3 Advice for firefighters**Special protective equipment for firefighters**

Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Suitable extinguishing media.

5.4 Additional Information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Section 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedure****For non-emergency personnel**

Use personal protective equipment, see section 8

For emergency responders

Remove persons to safety. Isolate hazard area and deny entry. Ventilate closed spaces before entering. Use personal protective equipment, see section 8.

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

For containment

Collect spills by wet sweeping or vacuuming with the vacuum exhaust passing through a high efficiency particulate arresting (HEPA) filter if exhaust is discharged into the workplace.

For cleaning up

Clean contaminated objects with damp cloth. Dispose of contaminated material in accordance with regulations.

6.4 Reference to other sections

Handling and storage, see section 7.

Personal protection, see section 8.

Disposal considerations, see section 13.

Section 7: Handling and storage**7.1 Precautions for safe handling****Protective measures**

Wear personal protective clothing, see Section 8.

Measures to prevent fire

This product is not flammable. No special fire protection measures are necessary.

Measures to prevent aerosol and dust generation

At all stages of the operation/processing, ensure extraction of dust by adequate ventilation, especially in confined areas.

Measures to protect the environment

None known.

Advice on general occupational hygiene

Work in well-ventilated zones or use proper respiratory protection. Avoid contact with skin, eyes and clothes. General hygiene rules must be observed: Wash hands before breaks and at the end of work. Wash contaminated clothing prior to re-use.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures and storage conditions**

Recommended storage temperature: ≤ 50 °C, relative humidity: ≤ 85 %.

Requirements for storage rooms and vessels

Store and keep in dry rooms in the original packaging.

Further information on storage conditions

Store and keep away from direct sunlight and other UV-light source.

7.3 Specific end use(s)**Recommendations**

Recommended use, see Section 1.2

Specific end uses

Filler for carbon composites

Section 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limits**

No.	Substances	CAS No.	Occupational exposure limits (OEL)		Monitoring and observation processes	Sources Limit value type Country of origin
			Limit value Eight hours	Limit value Short term (15 min)		
	Workplace limits for dust in general (allgemeiner Staubgrenzwert ASGW)			1.25 A mg/m ³ 10 E mg/m ³	Exceedance factor = 2	TRGS 900, 521 GESTIS Limit Values Germany (AGS)
1.	Carbon fiber based on polyacrylonitrile (PAN)	308063-67-4 7440-44-0	2 fibres/cm ³			GESTIS Limit Values Belgium VLEP/GWBB
			3 respirable particle			GESTIS Limit Values China
2.	Nickel metal – total dust	7440-02-0		0.006 A mg/m ³	Exceedance factor = 2	TRGS 900 Germany (AGS)
			1 mg/m ³			GESTIS Limit Values Australia
			0.5 mg/m ³	2 mg/m ³		GESTIS Limit Values Austria – MAK and TRK
			1 mg/m ³			GESTIS Limit Values Belgium VLEP/GWBB
			1 mg/m ³			GESTIS Limit Values Canada/Québec - VEA
			1 mg/m ³			GESTIS Limit Values France – VLE
			0.1 mg/m ³	0.1 mg/m ³		GESTIS Limit Values Hungary - ÁK
			0.5 mg/m ³			GESTIS Limit Values Ireland
			1 mg/m ³			GESTIS Limit Values New Zealand
			1 mg/m ³			GESTIS Limit Values Singapore
			1 mg/m ³			GESTIS Limit Values South Korea
			1 mg/m ³			GESTIS Limit Values Spain
			0.015 mg/m ³			GESTIS Limit Values United States of America – REL (Niosh)
			1 mg/m ³			GESTIS Limit Values United States of America – PEL

Biological limit values

BGV/BLV	Limit value	Test material	Test date	Source/Year
2. Nickel (7440-02-0)				
BGV	3 µm/L	Urine (U)	Not specified	SUM85 (2011) SCOEL/EU

DN(M)EL-Values

Route of exposure	Short-term local	Short-term systemic	Long-term local	Long-term systemic
2. Nickel (7440-02-0)				
Workers	DNEL-Values			
Inhalation	11.9 mg/m³	(I)	50 µg/m³	50 µg/m³
Dermal	(I)	(I)	35 µm/cm³	(I)
Eye	(I)	-	-	-
General Population				
Inhalation	800 ng/m³	(I)	60 ng/m³	60 ng/m³
Dermal	(I)	(I)	35 µm/cm³	(I)
Oral	-	370 µg/kg	-	11 µg/kg
Eye	(I)	-	-	-
Remarks	(I) = no hazard identified			

PNEC-Values

PNEC-Type	PNEC-Value	Ecosystem
2. Nickel (7440-02-0)		
	7.1 µg/L	Freshwater
	8.6 µg/L	Maine water
	0 ng/L	Intermittent releases (freshwater)
	0 ng/L	Intermittent releases (marine water)
	330 µg/L	Sewage treatment plant STP
	109 mg/kg sediment dw	Sediment (freshwater) dw
	109 mg/kg sediment dw	Sediment (marine water) dw
Hazard for Air	No hazard identified	Air
Hazard for Terrestrial Organism	29.9 mg/kg dw	Soil
Hazard for Predators	120 µg/kg food	Secondary poisoning

8.2

Exposure controls

Individual protection measures when processing the product, such as personal protective equipment:



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Appropriate protective equipment

Ensure adequate ventilation on workplace. Mechanical processing should be preferable taken place in confined areas or separate facilities.

Technical machinery, electric and electronic devices should be protected against static charge and short circuit.

Personal protective equipment

Eye and face protection

Suitable eye protection

Protection goggles.

Other eye protection measures

None known.

Skin protection

Hand protection

Wear protective gloves when handling the product. For sufficient protection use gloves according to EN 374. Nevertheless, before using protection gloves for the first time, they should be tested for their workplace-specific suitability (e.g. mechanical resistance, product compatibility and antistatic properties). For further information, please contact the glove supplier.

Glove material: Nitrile rubber, thickness ≥ 0.11 mm

Penetration time: ≥ 6h (480 min)

Body protection

No specific measures, but long-sleeved work wear recommended.

Other skin protection measures

None known.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. In case of vapors and/or dust, use breathing apparatus. Short time (max. 20 min).

Half-/quarter mask with P2 filter or particle-filtering semi-/ fine dust masks FFP2 or PAPR with TH 1 P protection level.

Thermal hazards

No specific hazards

Environmental exposure controls

Not specified.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Form	Color	Odor	Odor threshold
Solid, chopped fibre	Bronze-metallic glossy	Not specified	Not available

Basic physical and chemical properties

Parameter	Value	Method/Source	Remarks
pH level [20 °C]	Not applicable		
Melting point/ freezing point [°C]	≈ 3 500 °C carbon fiber ≈ 1 400 °C nickel		
Initial boiling point/ Boiling range [°C]	Not specified		
Flash point [°C]	Not specified		

Parameter	Value	Method/Source	Remarks
Evaporating rate	Not available		
Inflammability (solid, gaseous)	Not available		
Lower explosion limits	Not available		
Upper explosion limits	Not available		
Vapor pressure [Pa]	Not available		
Vapor density [°C]	Not available		
Relative Density [°C]	2.5 – 3.0		
Solubility (solvents) [°C]	Not available		
Partition coefficient: n-Octan/Water [K_{ow}]	Not applicable		
Auto-ignition temperature [°C]	Not available		
Decomposition temperature [°C]	≥ 650 °C carbon fiber ≥ 200 resin matrix		ambient air
Viscosity, flow time [23 °C]	Not available		
Viscosity, dyn. [mPas/20 °C]	Not available		
Explosive properties	Not available		
Oxidizing properties	None		

9.2 Other information

Parameter	Value	Method/Source	Remarks
Carbon fibre filament diameter	≥ 5.0 µm		
Spec. electr. conductivity	7.5 10 ⁻⁵ Ohm cm		

Section 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Product is not reactive and stable under conditions for transfer, storage and applications.

10.3 Possibility of hazardous reactions

Accumulation of fibre dust may entail the risk of a dust explosion in the present of air.

10.4 Conditions to avoid

Do not heat up above decomposition temperature mentioned. See Section 5.2, 9.1.2.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

None if used for intended purpose.

Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicological effects of the product are not studied.

- **Acute toxicity**

Practical experience / human evidence

No data available.

Animal data

Parameter	Effect dose/ concentration	Value	Species	Result / evaluation	Method/ Source	Remark
2. Nickel (7440-02-0)						
Acute oral toxicity	LD50	> 9 000 mg/kg bw	Rat	-	OCED 401 Echa	Nontoxic
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (CAS 25068-38-6)						
Acute oral toxicity	LD50	> 2 000 mg/kg bw	Rat	-	Echa	Nontoxic
Acute dermal toxicity	LD50	> 2 000 mg/kg bw	Rabbit	-	Supplier	Nontoxic

Assessment / Classification

Due to calculated ATE values, acute toxicity of the product is not expected. Based on available data, the classification criteria are not met.

- Skin corrosion/irritant**

Practical experience / human evidence

No data available.

Animal data (In Vivo)

Exposure time	Observation time	Species	Method/ Source	Result / evaluation	Remark
2. Nickel (7440-02-0)					
-	-	-	Echa	No adverse effect observed	Not irritating
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)					
4 h	1 h, 24 h, 72 h, 7 d	Rabbit	Echa	Negative	Not irritating

In Vitro skin test

Data lacking.

Assessment / Classification

Based on available data, the classification criteria are not met.

- Serious eye damage/eye irritation**

Practical experience / human evidence

No data available.

Animal data (In Vivo)

Exposure time	Observation time	Species	Method	Result / evaluation	Source	Remark
2. Nickel (7440-02-0)						
-	-	-	-	No adverse effect observed	Echa	Not irritating
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)						
-	1 h, 24 h, 72 h, 7 d	Rabbit	OECD 405	Positive, fully reversible within 7 days	Echa	Irritating

In Vitro eye test

No data available.

Assessment / Classification

Based on available data, the classification criteria are not met.

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- **Sensitisation to the respiratory tract/skin**

Sensitisation to the respiratory tract

Practical experience / human evidence

No data available.

Assessment / Classification

Not classifiable due to data lacking.

- **Skin Sensitisation**

Practical experience / human evidence

According to expert judgement, sensitivity to epoxy resins may possibly worsen.

Animal data (In Vivo)

Effect dose/ concentration	Value	Species	Method/ Source	Result / evaluation	Remark
2. Nickel (7440-02-0)					
-	-	-	Echa	Adverse effect observed	Sensitizing
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)					
-	-	-	-	Positive	Sensitizing

Assessment / Classification

Based on available data, the classification criteria are met.

- **Germ cell mutagenicity**

In Vitro mutagenicity / genotoxicity

No data available.

In Vivo mutagenicity / genotoxicity

No data available.

Assessment / Classification

No data available.

- **Carcinogenicity**

Practical experience / human evidence

No data available.

Animal data

Effect dose/ concentration	Value	Species	Exposure			Method /Source	Result / evaluation	Remark
			route	time	duration			
2. Nickel (7440-02-0)								
LOAEC	0,1 mg/m ³	Rat	Inhalation aerosol	6 h/day, 5 days/ week	24 months	OSCD 451 Echa	-	-
NOAEC	0,4 mg/m ³						Negative	Tumors anywhere

Assessment / Classification

Based on expert judgement, the classification criteria are met.

- **Reproductive toxicity**

Adverse effects on sexual function and fertility

No data available.

Adverse effects on developmental toxicity

No data available.

Effects on or via lactation

No data available.

Assessment / Classification

Based on available data, the classification criteria are not met.

Overall assessment on CMR properties

This product does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

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- **Specific target organ toxicity (single exposure)**

Practical experience / human evidence

No data available.

Animal data

No data available.

Assessment / Classification

Based on available data, the classification criteria are not met.

- **Specific target organ toxicity (repeated exposure)**

Practical experience / human evidence

No data available.

Animal data

Parameter	Effect dose/ concentration	Value	Exposure duration	Species	Method/ Source	Specific effects	Organs affected	Remark
2. Nickel (7440-02-0)								
STOT RE oral	NOAEL	2.2 mg Ni/kg bw/day	104 weeks	Rat	OECD 451 Echa	Significant decrease body weight	-	Ni as sulphate hexahydrate
	LOAEL	6.7 mg Ni/kg bw/day					-	
STOT RE dermal	-	-	-	-	-	-	-	-
STOT RE inhalative	LOAEC	0,1 mg/m ³ air	24 months	Rat	OECD 451 Echa	-	-	-

Assessment / Classification

Based on available data, the classification criteria are met.

- **Aspiration hazard**

Practical experience / human evidence

No data available.

Experimental data

Viscosity data. See Section 9.

Assessment / Classification

Based on available data, the classification criteria are not met.

- **General information**

Fibre/Nickel abrasion can cause mechanical irritation of the skin and respiratory tract. It is likely that abrasion cause the concentration limits of airborne nickel to exceed the locally prescribed exposure limits. Carbon fiber itself does not emit WHO-fibre particles that are respirable (IARC). Definition of WHO-fibre particle: length ≥ 5 µm, diameter ≤ 3 µm and length-to-diameter ratio 3:1.

Section 12: Ecological information

12.1 Toxicity

- **Aquatic toxicity**

Acute (short-term) fish toxicity

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2. Nickel (7440-02-0)						
LC50	15.3 mg/L	96h	Oncorhynchus mykiss	-	Echa	Semi-static
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)						
EC50	2 mg/L	48 h	Daphnia magna	Limited mobility	OECD 202 Echa	Static

Chronic (long-term) fish toxicity

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
NOEC	40 - 80 µg/L	8 days	Brachydanio rerio	-	OECD 215 Echa	-

Acute (short-term) toxicity to aquatic invertebrates

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
LC50	13 – 276 µg/L	48 h	-	-	Echa	Static

Chronic (long-term) toxicity to aquatic invertebrates

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
NOEC	66 µg/L	8 month	-	-	OECD 211 Echa	Static renewal

Acute (short-term) toxicity to algae and cyanobacteria

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
EC50	40.7 - 1430 µg/L	72 h	-	-	OECD 201 Echa	Static
3.	Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)					
EC50	9 mg/L	48 h	Scenedesmus capricornutum	Growth retardation	-	Static

Toxicity to other aquatic plants and organisms

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source/	Remark
2.	Nickel (7440-02-0)					
EC10	3.9 – 435.3 µg/L	7 days	-	-	Echa	-
EC50	87 1377 µg/L	7 days	-	-	Echa	-

Toxicity to microorganisms

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
EC50	33 mg/L	30 min	Activated sludge	-	ISO 8192 Echa	Respiration rate

Assessment / Classification

Based on available data, the classification criteria are not met.

Sediment toxicity

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
EC10	762 – 1 318 mg/kg	28 days	Chironomus riparius	-	ASTM E 1706-05 Echa	-

• **Terrestrial toxicity**

Toxicity to soil macroorganisms except arthropods

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/Sour ce	Remark
2.	Nickel (7440-02-0)					
LC50	510 mg/kg soil dw	21 days	Enchytraeus albidus		OECD 220 Echa	
NOEC	180 mg/kg soil dw	42 days				
LOEC	320 mg/kg soil dw	42 days				
EC50	275 mg/kg soil dw	42 days				

Toxicity to terrestrial arthropods

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
NOEC	36.4 – 1 140 mg/kg soil dw	28 days	Folsomia candida		ISO 11267 Echa	

Toxicity to terrestrial plants

Effect dose/ concentration	Value	Test duration	Species	Result / evaluation	Method/ Source	Remark
2.	Nickel (7440-02-0)					
NOEC	29 – 355 mg/kg soil dw	63 days	-	-	Echa	-
NOEC	88 - 187 mg/kg soil dw	60 days	-	-		-
NOEC	17 - 69 mg/kg soil dw	56 days	-	-		-
NOEC	67 mg/kg soil dw	40 days	-	-		-
NOEC	13 - 187 mg/kg soil dw	30 days	-	-		-

Toxicity to birds

No data available.

Assessment / Classification

Based on available data, the classification criteria are not met.

12.2 Persistence and degradability

Abiotic Degradation

Test type	T _{1/2}	Temperature	pH -value	Method/Source	Remark

Test type	T _{1/2}	Temperature	pH -value	Method/Source	Remark
-	-	-	-	-	-

Biodegradation

Inoculum	Parameter	Degradation rate	pH -value	Method/Source	Remark
3. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) (25068-38-6)					
Activated sludge	BSB (28 d)	5 %	-	OECD 301F Echa	Readily degradable

Assessment / Classification

Based on available data, the classification criteria are not met.

12.3 Bioaccumulative potential (BCF)

Species	Result	Method/Source	Remark
-	-	-	-

Assessment / Classification

No data available.

12.4 Mobility in soil

Distribution	Transport type	Parameter	Result	Method/Source	Remark
-	-	-	-	-	-

Assessment / Classification

No data available.

12.5 Results of the PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

None known.

Section 13: Disposal considerations

13.1 Waste treatment methods

Product residues should be disposed of in compliance with Directive on Waste 2008/98/EC as well as national and regional regulations. For the product, it is not possible to determine a waste code number according to the European Waste Catalogue (EWC) as only the intended use by the customer enables an allocation. The waste code number has to be determined within the EU in accordance with the local waste disposer.

Product / Packaging disposal

List of proposed waste codes/waste designations in accordance with AVV.

Waste treatment-relevant information

Not specified.

Sewage disposal-relevant information

Not specified.

Other disposal recommendations

Non-contaminated packaging may be taken for recycling.
Contaminated packaging must be disposed of like the product.

Section 14: Transport information

	Land transport (ADR/RID)	Inland waterways (ADN)	Marine transportation (IMDG)	Transport by air (ICAO-TI / IATA-DGR)
14.1	UN-Number			
	-			
14.2	UN proper shipping name			
	NO DANGEROUS GOODS			
14.3	Transport hazard class			
	-			
	Label			
	-			
14.4	Packing group			
	-			
14.5	Environmental hazards			
	-			

14.6 Special precautions for user

See Section 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and IBC-Code

Not applicable.

14.8 Additional information

Limited quantities (LQ)

Not applicable.

Classification code

Not applicable.

Hazard Number

Not applicable.

Tunnel restriction code

Not applicable

EmS Number

Not applicable.

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/specific for the article

- **EU regulations**

Authorizations and/or restrictions on use

Not applicable.

- **Other EU regulations**

VOC directive (2004/42/EG)

Product does not emit volatile organic components.

Ozone layer (Reg. EC No. 1005/2009)

Product does not contain substances that deplete the ozone layer.

Employment restriction

When processing the product, observe employment restrictions for child bearing mothers and nursing mothers, and furthermore, observe employment restrictions under the law for the protection of young people at work (94/33/EC Article 7)

Fluorinated greenhouse gases (Reg. EU No. 517/2014)

Product does not contain fluorinated greenhouse gases.

SVHC (candidate list)

The product does not contain Substances of Very High Concern acc. to REACH Reg. (EC) No 1907/2006, Art. 59 above legal concentration limits of ≥ 0.1 % (w/w).

RoHS 2011/65/EU and amendments

This carbon fiber product does not contain any substances listed in RoHS (or contains in concentrations below the limits as specified therein).

- **National regulations**

Water pollution class

WGK 1, slightly polluting to water (self-assessment according to AwSV).

15.2 Chemical safety assessment

Chemical safety assessments for substances in this product were not carried out.

Section 16: Other information

16.1 Indication of changes

Chapter	Previous entry (text/value)	Latest entry
all	-	Reaction product: bisphenol-A-(epichlorhydrin) included as ingredient.

16.2 Abbreviations and acronyms

H315	Skin Irrit. 2	Causes skin irritation.
H317	Skin Sens. 1	May cause an allergic skin reaction.
H319	Eye Irrit. 2	Causes serious eye irritation.
H351	Carc. 2	Suspected of causing cancer.
H372	STOT RE 1	Cause damage to organs through prolonged or repeated exposure.
H411	Aquatic Chronic 2	Toxic to aquatic life with long lasting effects.

A	Alveolar fraction
AK	Average concentration
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
AGS	German Committee on Hazardous Substances
ATE	Acute Toxicity Estimated value
AVV	European List of Waste
AwSV	Regulation on facilities for handling substances hazardous to water
BCF	Bioaccumulation factor
BLF	Biological Limit Value
BGV	Biological Guidance Value
bw	Body weight
CAS No	Registration Number of the Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
DGUV	Institute for Work and Health of the German Social Accident Insurance
DMEL	Derived Minimum Effect Level
DNEL	Derived No Effect Level
dw	Dry weight (Dry basis)
E	Inhalable fraction
EC	European Council
EC50	Median effective concentration
ECHA	European Chemical Agency
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EU	European Union
EUH	EU-Hazard Statements
EWC	European Waste Catalogue
GHS	Globally Harmonized System

GWBB	Granswaarden voor beroepsmatige blootstelling
IARC	International Agency for Research of Cancer
IATA	International Air Transport Association
IC50	Inhibition concentration, 50 %
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 %
LD50	Median lethal dose
LO(A)EL(C)	Lowest Observed (Adverse) Effect Level (Concentration)
MAK	Maximum Workplace Concentrations
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
MW	Molecular weight
Niosh	National Institute for Occupational Safety and Health
NOAEL(C)	No Observed Adverse Effect Level (Concentration)
NOELR	No Observable Effect Loading Rate
N.O.S.	Not otherwise specified
OEL	Occupational Exposure Limit(s) (Values)
PBT	Persistent, Bioaccumulative and Toxic substance
PEL	Permissible Exposure Limits
PNEC	Predicted No Effect Concentration
P _{ow}	Partition coefficient n-octanol/water
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
REL	Recommended exposure limits
RID	International Carriage of Dangerous Goods by Road
SCOEL/EU	European Scientific Committee on Occupational Exposure Limits
STOT	Specific target organ toxicity
STP	Sewage treatment plant
SVHC	Substances of Very High Concern for Authorization
TRK	Technical Guidance Concentrations
TRGS	German Technical Rule for Hazardous Substances
VLA	Valeurs d'exposition admissibles (see OEL)
VLEP	Valeurs limites d'exposition professionnelle (see OEL)
vPvB	Very Persistent and very Bioaccumulative
VwVwS	German Administrative Regulation of Water-Polluting Substances
WHO	World Health Organisation
WHO-fibre	length ≥ 5 µm, diameter ≤ 3 µm and length-to-diameter ratio 3:1
% (w/w)	Weight Percent

16.3 Key literature references and sources for data

http://www.bgbau.de/gisbau
http://www.dguv.de
http://www.dguv.de/gestis
http://www.echa.europa.eu/candidate-list-table
http://www.baua.de
https://echa.europa.eu/de
http://eur-lex.europa.eu

16.4 Classification for mixtures and used evaluation Method/Source according to regulation (EC) 1272/2008 [CLP]

Although the product is treated as article, the classification used herein was determined based on a mixture and in accordance with the technics of the calculation method.

16.5 Training advice

Product should only be handled by trained operators.

Tenax® Short Fiber

Metal Coated

Product Information on Safe Handling**Revision 05 (en), effective date 1 Oct. 2015, updated 1 Aug. 2020****16.6 Additional information**

None known.

16.7 Other information**Inventory Status**

In general, articles are exempted from compulsory registration acc. to REACH regulation. Anyhow, all ingredients comply with the registration requirements acc. to REACH (registration or pre-registration), and additionally are listed in EINECS or ELINCS.

Disclaimer

This information is given to the best of our current knowledge and describes an article with regard to safety requirements. We would like to point out that it does not represent a guarantee of properties.