

Pyromex® Oxidized PAN-Fiber (OPF)

CPX

Product Information on Safe Handling

Revision 02 (en), effective date 1 Apr. 2016, updated 20 Aug. 2019

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**
Pyromex® Oxidized PAN-Fiber (OPF)
- 1.1.1 Product type**
Pyromex® CPX 1.6d
Pyromex® CPX 1.2d
Pyromex® CPX 2d
- 1.2 Relevant identified uses of the article and uses advised against**
Manufacturing of heat and flame resistant materials, carbon carbon parts.
- 1.2.1 Uses advised against**
None known.
- 1.3 Details of the supplier**
- 1.3.1 Supplier**
Teijin Carbon Europe GmbH
Kasinostr. 19-21
42103 Wuppertal
GERMANY
Tel: +49 202 32-3225
Homepage: www.tejincarbon.com
- 1.3.2 Responsible department/competent person**
Dr Axel Leuchter
General Manager Quality & Change Management
E-Mail: safety@tejincarbon.com

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.
- 2.1.1 Self-Classification according to Regulation (EC) No 1272/2008 [CLP]**
Not classified as hazardous. See chapter 3.
- 2.2 Self-Labeling elements according to Regulation (EC) No 1272/2008 [CLP]**
Not subject to labelling.
- 2.2.1 Precautionary instruction**
P280: Wear protective gloves.
- 2.2.2 Supplemental Hazard information (EU)**
Not known.
- 2.3 Other hazards**
- 2.3.1 Classification acc. to Annex XIII of REACH Reg. (EC) No 1907/2006 as PBT or vPvB**
Not applicable.
- 2.3.2 Other hazards which do not result in classification**
None 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.
- 3.1.1 Description**
Oxidized PAN (polyacrylonitrile) fiber.

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3.2 Composition/information of ingredients

Substance	CAS No EINECS/ELINCS EU-INDEX	Content by weight % (w/w)	GHS/CLP	M-factor/ specific limit value
2-Propenenitrile, homopolymer, oxidized	68908-35-0 614-761-7 -	≥ 99	Not classified.	-

3.2.1 Additional information

None.

Section 4: First aid measures

4.1 Description of first aid measures

4.1.1 General information

No special measures necessary. Avoid contact with unprotected body parts, and do not breathe fibre dust.

4.1.2 Following inhalation

In the case of fibre dust inhalation, bring affected person to fresh air. If respiratory irritation persists, seek medical attention.

4.1.3 Following skin contact

In the case of contact with skin, rinse affected area with cold water. Do not use warm water since it aggravates the skin itching/irritation. Consult a doctor if skin irritation persists.

4.1.4 Following eye contact

In the case of eye contact, rinse the affected eye thoroughly for a few minutes. Remove contact lenses, if present and easy to do, continue rinsing. If eye irritation persists, seek medical attention.

4.1.5 Following ingestion

Not applicable.

4.1.6 Self-protection of the first aider

Self-aider: Pay attention to self-protection!

4.2 Most important symptoms and effects, both acute and delayed

4.2.1 Symptoms and Effects

None known.

4.3 Indication of any immediate medical attention and special treatment needed

4.3.1 Special treatment

First aid, treatment of symptoms.

4.3.2 Notes for the doctor

Treat symptomatically.

Section 5: Firefighting measures

5.1 Extinguishing media

5.1.1 Suitable extinguishing media

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

5.1.2 Unsuitable extinguishing media

Full water jet.

5.2 Special hazards arising from the article

5.2.1 Hazardous combustion products

Hydrogen cyanide (HCN) may be produced above the degradation temperature above ≥ 300 °C in air (≥ 290 °C surface coating). Carbon oxide (COx) and nitrogen oxides (NOx) are also known decomposition by-products.

5.3 Advice for firefighters

5.3.1 Special protective equipment for firefighters

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

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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

6.1.1 For non-emergency personnel

Wear personal protective equipment, see section 8

6.1.2 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

Not applicable.

6.3 Methods and material for containment and cleaning up

6.3.1 For containment

None known.

6.3.2 For cleaning up

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

6.3.3 Other information

None known.

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

7.1.1 Protective measures

Wear personal protective equipment. See Section 8.

7.1.2 Measures to prevent fire

Not applicable.

7.1.3 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.

7.1.4 Measures to protect the environment

None known.

7.1.5 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

7.2.1 Technical measures and storage conditions

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

7.2.2 Requirements for storage rooms and vessels

Store and keep the article in dry rooms in its original packaging.

7.2.3 Further information on storage conditions

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

7.3 Specific end use(s)

7.3.1 Recommendations

Recommended use, see Section 1.2.

7.3.2 Specific end uses

Insulation materials, heat barriers, heat resistant work clothes, base material for the production of cc parts.

Section 8: Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limits

Substance	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 (ASGW)	-	-	1.25 A mg/m ³ 10 E mg/m ³	Exceedance factor = 2	TRGS 900, 521 GESTIS Limit Values Germany (AGS)

8.1.2 Biological limit values

Not applicable.

8.1.3 DN(M)EL-Values

Not applicable.

8.1.4 PNEC-Values

Not applicable.

8.2 Exposure controls

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



8.2.1 Appropriate protective equipment

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

8.2.2 Personal protective equipment

8.2.2.1 Eye and face protection

Suitable eye protection

None known.

Other eye protection measures

None known.

8.2.2.2 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: not specified.
Penetration time: not specified.

Body protection

None known.

Other skin protection measures

None known.

8.2.2.3 Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. In case of fibre dust, use breathing apparatus. Short time (max. 20 min). Half-/quarter mask with A2P2 filter.

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8.2.2.4 **Thermal hazards**
No specific hazards.

8.2.3 **Environmental exposure controls**
Not specified.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

9.1.1 Appearance

Form	Color	Odor	Odor threshold
Solid, fibre	Black	Not specified	Not available

9.1.2 Basic physical and chemical properties

Parameter	Value	Method	Remarks
pH level [20 °C]	Not applicable		
Melting point/ freezing point [°C]	Not applicable		
Initial boiling point/ Boiling range [°C]	Not applicable		
Flash point [°C]	Not specified		
Evaporating rate	Not available		
Inflammability (solid, gaseous)	Not applicable		
Lower explosion limits	Not applicable		
Upper explosion limits	Not applicable		
Vapor pressure [Pa]	Not applicable		
Vapor density [°C]	Not applicable		
Relative Density [°C]	1.2 – 1.6 g/cm ³		At 23 °C
Solubility (solvents) [°C]	Not available		
Partition coefficient: n-Octan/Water [K _{ow}]	Not applicable		
Auto-ignition temperature [°C]	Not applicable		
Decomposition temperature [°C]	≥ 290 °C		Ambient air
Viscosity, flow time [23 °C]	Not applicable		
Viscosity, dyn. [mPas/20 °C]	Not applicable		
Explosive properties	Not applicable		
Oxidizing properties	None		

9.2 **Other information**
Not known.

Section 10: Stability and reactivity

10.1 **Reactivity**
Product is not reactive under conditions for transfer, storage and applications. See Chapter 7.2

10.2 **Chemical stability**
Product is stable under conditions for transfer, storage and applications. See Chapter 7.2

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- 10.3 Possibility of hazardous reactions**
Reactions with strong oxidizing agents. 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 known if used for intended purpose.

Section 11: Toxicological information

- 11.1 Information on toxicological effects**
Toxicological effects of the product are not studied.
- 11.1.1 Acute toxicity**
- Practical experience / human evidence**
No data available.
- Animal data**
No data available.
- Other information**
No data available.
- Assessment / Classification**
Based on available data, the classification criteria are not met.
- 11.1.2 Skin corrosion/irritant**
- Practical experience / human evidence**
No data available.
- Animal data (InVivo)**
No data available.
- InVivo skin test**
No data available.
- Other information**
No data available.
- Assessment / Classification**
Based on available data, the classification criteria are not met.
- 11.1.3 Serious eye damage/eye irritation**
- Practical experience / human evidence**
No data available.
- Animal data (InVivo)**
No data available.
- InVivo eye test**
No data available.
- Other information**
No data available.
- Assessment / Classification**
Based on available data, the classification criteria are not met.
- 11.1.4 Sensitisation to the respiratory tract/skin**
- 11.1.4.1 Sensitisation to the respiratory tract**
- Practical experience / human evidence**
No data available.
- Other information**
No data available.
- Assessment / Classification**
Based on available data, the classification criteria are not met.

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11.1.4.2 Skin Sensitisation**Practical experience / human evidence**

No data available.

Animal data (InVivo)

No data available.

Other information

No data available.

Assessment / Classification

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

11.1.5 Germ cell mutagenicity**InVivo Mutagenität / Gentoxizität**

No data available.

InVitro mutagenicity/genotoxicity

No data available.

Other information

No data available.

Assessment / Classification

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

11.1.6 Carcinogenicity**Practical experience / human evidence**

No data available.

Animal data

No data available.

Other information

No data available.

Assessment / Classification

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

11.1.7 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.

Other information

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.

11.1.8 Specific target organ toxicity (single exposure)**Practical experience / human evidence**

No data available.

Animal data

No data available.

Other information

No data available.

Assessment / Classification

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

11.1.9 Specific target organ toxicity (repeated exposure)**Practical experience / human evidence**

No data available.

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Animal data

No data available.

Other information

No data available.

Assessment / Classification

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

11.1.10 Aspiration hazard

Practical experience / human evidence

Not applicable.

Experimental data

Viscosity data. See Section 9.

Other information

No data available.

Assessment / Classification

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

11.1.11 General information

Fibre and dust abrasion can cause mechanical skin irritation.

Section 12: Ecological information

12.1 Toxicity

12.1.1 Aquatic toxicity

12.1.1.1 Acute (short-term) fish toxicity

No data available.

12.1.1.2 Chronic (long-term) fish toxicity

No data available.

12.1.1.3 Acute (short-term) toxicity to crustacea

No data available.

12.1.1.4 Chronic (long-term) toxicity to crustacea

No data available.

12.1.1.5 Acute (short-term) toxicity to algae and cyanobacteria

No data available.

12.1.1.6 Toxicity to other aquatic plants and organisms

No data available.

12.1.1.7 Toxicity to microorganisms

No data available.

Assessment / Classification

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

12.1.2 Sediment toxicity

No data available.

12.1.3 Terrestrial toxicity

12.1.3.1 Toxicity to soil microorganisms except arthropods

No data available.

12.1.3.2 Toxicity to terrestrial arthropods

No data available.

12.1.3.3 Toxicity to terrestrial plants

No data available.

12.1.3.4 Toxicity to birds

No data available.

Assessment / Classification

Not classifiable due to data lacking.

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12.2 Persistence and degradability

12.2.1 Abiotic Degradation

Not available.

12.2.2 Biodegradation

Not available.

Assessment / Classification

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

12.3 Bioaccumulative potential (BCF)

Not available.

Assessment / Classification

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

12.4 Mobility in soil

Not available.

Assessment / Classification

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

12.5 Results of the PBT and vPvB assessment

Not available.

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.

13.1.1 Product / Packaging disposal

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

13.1.2 Waste treatment-relevant information

Not specified.

13.1.3 Sewage disposal-relevant information

Not specified.

13.1.4 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 (ACN)	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			
	-			
14.3.1	Label			
	-			
14.4	Packing group			
	-			

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	Land transport (ADR/RID)	Inland waterways (ACN)	Marine transportation (IMDG)	Transport by air (ICAO-TI / IATA-DGR)
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

Not applicable.

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/specific legislations

15.1.1 EU regulations

15.1.1.1 Authorizations and/or restrictions on use

Not applicable.

15.1.2 Other EU regulations

15.1.2.1 VOC directive (2004/42/EG)

Not specified.

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

Product does not contain substances that deplete the ozone layer.

15.1.2.3 Employment restriction

None known.

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

Product does not contain fluorinated greenhouse gases.

15.1.2.5 SVHC (candidate list)

The product does not contain Substances of Very High Concern acc. to REACH Reg. (EC) No 1907/2006, Art. 57 above legal concentration limits of $\geq 0.1\%$ (w/w).

15.1.2.6 RoHS 2011/65/EU and amendments

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

15.1.3 National regulations

15.1.3.1 Water pollution class

Not applicable.

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

First edition.

Second edition: All chapters have been completely revised.

16.2 Abbreviations and acronyms

A	Alveolar fraction
ĀK	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
ASGW	Workplace limits for dust in general/allgemeiner Staubgrenzwert

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ATE	Acute Toxicity Estimated value
AVV	European List of Waste
BCF	Bioaccumulation factor
BLF	Biological Limit Value
BGV	Biological Guidance Value
BSB	Biochemical oxygen demand
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
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
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
QSAR	Quantitative structure-activity relationship
RE	Repeated dose toxicity
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

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vPvB	Very Persistent and very Bioaccumulative
AwSV	German Regulation on Installations for Handling Substances Hazardous to Water
WHO	World Health Organisation
WHO-fibre	length $\geq 5 \mu\text{m}$, diameter $\leq 3 \mu\text{m}$ 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 according to regulation (EC) 1272/2008 [CLP]

Although the product is treated as an article, the classification used here has been determined based on a mixture and according to the technics of the calculation method set out in regulation (EC) 1272/2008.

16.5 Training advice

None known.

16.6 Additional information

None known.

16.7 Other information

16.7.1 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.

16.7.2 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.