Fibremod™ FF311SF-9502

Version 2.0 Revision Date: 06.10.2026 Former date: 01.04.2025

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Fibremod FF311SF-9502

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

Use of the Substance/Mixture : Raw material for plastics industry

Recommended restrictions on use : Use only according to our recommendations.

1.3 Details of the supplier of the safety data sheet

: Borealis UK Ltd
One St Peters Square, M2 3DE Manchester, United Kingdom
Telephone: +44 (0) 1625 537390

E-mail address : sds@borealisgroup.com

1.4 Emergency telephone

800 680 0425 (3E), Access code: 336296
In an emergency, call NHS 111 or contact a doctor.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Fibremod is a trademark of the Borealis group.

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labeling

EUH208 Contains trimethoxy(2-{7-oxabicyclo[4.1.0]heptan-3-yl}ethyl)silane. May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

The product burns, but is not classified as flammable.
Dust from the product gives a potential risk for dust explosion.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : The product is a polypropylene polymer.
It contains glass fibre.

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Diphosphoric acid, compd. with piperazine	66034-17-1 457-330-7	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 10 - < 20
Diphosphoric acid, compound with 1,3,5-triazine-2,4,6-triamine	15541-60-3 239-590-1	Eye Irrit. 2; H319 STOT RE 2; H373 Aquatic Chronic 3; H412	>= 2,5 - < 10
zinc oxide	1314-13-2 215-222-5 030-013-00-7 01-2119463881-32-XXXX	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 _____ M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2,5
trimethoxy(2-{7-oxabicyclo[4.1.0]heptan-3-yl}ethyl)silane	3388-04-3 222-217-1	Skin Sens. 1B; H317 Muta. 2; H341 Carc. 2; H351 Aquatic Chronic 3; H412	>= 0,1 - < 0,25

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

If inhaled : Move to fresh air.

If symptoms persist, call a physician.

In case of skin contact : If molten material comes in contact with the skin, cool with plenty of water. DO NOT remove solidified product, as removal could result in severe tissue damage.
Obtain medical attention.

Wash off with soap and plenty of water.
Call a physician if irritation develops or persists.

In case of eye contact	:	Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed	:	Rinse mouth with water. Consult a physician if necessary.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.
Risks	:	Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically. No specific instructions needed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water in spread jet, dry chemicals, foam or carbon dioxide.
Unsuitable extinguishing media	:	High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Principal toxicant in the smoke is carbon monoxide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus and protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions	:	Should not be released into the environment.

It is recommended to implement systems and practices (such as Operation Clean Sweep®) to prevent accidental release of plastics in to the environment.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Vacuum or sweep up spill. All spill of material must be removed immediately to prevent slipping accidents. Recycle or dispose loose material properly. Do not flush into surface water or sanitary sewer system.

6.4 Reference to other sections

For personal protection see section 8.
For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released. Provide adequate ventilation. Local exhaust ventilation may be necessary. Avoid inhalation of dust and decomposition fumes. Avoid contact with skin and eyes.
Advice on protection against fire and explosion	:	Dust from the product gives a potential risk for dust explosion. All equipment shall be grounded. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
Hygiene measures	:	When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Safety aspects do not require any special precautions in terms of storage.
Further information on storage stability	:	Keep in a dry place.

7.3 Specific end use(s)

Specific use(s)	:	Raw material for plastics industry

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

Substance name	End Use	Routes of exposure	Potential health effects	Value
Diphosphoric acid, compd. with piperazine	Workers	Inhalation	Long-term systemic effects	0,300 mg/m3
	Workers	Inhalation	Acute systemic effects	0,900 mg/m3
	Workers	Dermal	Long-term systemic effects	0,330 mg/kg bw/d

Predicted No Effect Concentration (PNEC)

Substance name	Environmental Compartment	Value
Diphosphoric acid, compd. with piperazine	Fresh water	0,135 mg/l
	Fresh water sediment	17,451 mg/kg dry weight (d.w.)
	Sea water	0,013 mg/l
	Sea sediment	1,745 mg/kg dry weight (d.w.)
	Sewage treatment plant	10 mg/l
	Soil	2,024 mg/kg dry weight (d.w.)
zinc oxide	Fresh water	17,9 µg/l
	Sea water	9 µg/l
	Fresh water sediment	182,8 mg/kg dry weight (d.w.)
	Sea sediment	201,9 mg/kg dry weight (d.w.)
	Sewage treatment plant	124,5 µg/l
	Soil	103,4 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Provide adequate ventilation.
Local exhaust ventilation may be necessary.

Personal protective equipment

Eye/face protection	:	Safety glasses Use eye protection according to EN 166.
Hand protection		
Remarks	:	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Protective gloves complying with EN 374.
Skin and body protection	:	Protective clothing
Respiratory protection	:	In case of insufficient ventilation: Respirator with ABEK-P3 filter or self-contained breathing apparatus.
Protective measures	:	Appropriate personal protective equipment (PPE) shall be worn in accordance with Regulation (EU) 2016/425.

Environmental exposure controls

General advice	:	Should not be released into the environment. It is recommended to implement systems and practices (such as Operation Clean Sweep®) to prevent accidental release of plastics in to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	pellets
Color	:	black
Odor	:	odorless
pH	:	Not applicable insoluble
Melting point/ range	:	130 - 170 °C
Boiling range	:	Decomposes on heating.
Flash point	:	Not applicable, (solid)
Evaporation rate	:	Not applicable (solid)
Flammability	:	The product is not flammable.
Upper explosion limit / Upper flammability limit	:	Not applicable

Lower explosion limit / Lower flammability limit	:	Not applicable
Vapor pressure	:	Not applicable (solid)
Density	:	1,1 - 1,2 g/cm3
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable insoluble
Autoignition temperature	:	> 320 °C
Viscosity		
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Particle size	:	3 - 10 mm Method: Image analysis (surface-based)

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

The product is a stable thermoplastic, with no chemical reactivity.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	None known.

10.4 Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Materials to avoid	:	None known.

10.6 Hazardous decomposition products

Under fire conditions:
Carbon monoxide
During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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

Components:

zinc oxide:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5,7 mg/l Test atmosphere: dust/mist

Skin corrosion/irritation

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

Components:

zinc oxide:

Species	:	Rabbit
Assessment	:	No skin irritation
Remarks	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Diphosphoric acid, compd. with piperazine:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	irritating

zinc oxide:

Result	:	No eye irritation
Remarks	:	No eye irritation

Respiratory or skin sensitization

Skin sensitisation

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

Respiratory sensitisation

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

Components:

zinc oxide:

Result	:	Not a skin sensitizer.
Remarks	:	Does not cause skin sensitization.

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

STOT-single exposure

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

STOT-repeated exposure

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

Repeated dose toxicity

Components:

zinc oxide:

Species	:	Rat, male and female
NOAEL	:	68 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Method	:	OECD Test Guideline 408
GLP	:	no
Remarks	:	Information given is based on data on the ingredients and the toxicology of similar products.

Species	:	Rat, male
NOAEL	:	0,0015 mg/l
Application Route	:	Inhalation
Exposure time	:	13 Weeks
Method	:	OECD Test Guideline 413
GLP	:	yes

Aspiration toxicity

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

Further information

Product:

Remarks	:	The product is not classified as hazardous to human health. Information given is based on data of the components.
Remarks	:	Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

SECTION 12: Ecological information

12.1 Toxicity

Components:

zinc oxide:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0,169 mg Zn/l Exposure time: 96 h Test Type: static test Method: ASTM E 729-96 Remarks: Read-across (Analogy)
Toxicity to daphnia and other aquatic invertebrates	:	(Daphnia magna (Water flea)): 0,413 mg Zn/l Exposure time: 48 h Test Type: static test Method: EPA 821-R-02-012 Remarks: Read-across (Analogy)
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 0,042 mg Zn/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,044 mg Zn/l Exposure time: 30 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test

Remarks: Read-across (Analogy)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,058 mg Zn/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Not readily biodegradable.

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Does not accumulate in organisms.

Components:

zinc oxide:

Bioaccumulation	:	Remarks: Does not significantly accumulate in organisms.

12.4 Mobility in soil

Product:

Mobility	:	Remarks: Not expected to adsorb on soil. Remarks: The product is insoluble and sinks in water.

Components:

zinc oxide:

Distribution among environmental compartments	:	Adsorption/Soil Medium: Soil log Kd: 3,78 Remarks: Adsorbs on soil.

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered

to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting potential	:	This substance/mixture does not contain components considered to have endocrine disrupting properties for environment according to UK REACH Article 57(f) at levels of 0.1% or higher.
Additional ecological information	:	Should not be released into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of contents/ container to an approved waste disposal plant. Reuse or recycle if not contaminated. Discharge into the environment must be avoided. Check with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADR	:	Not regulated as a dangerous good

RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good

14.4 Packing group

ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation	:	Not applicable

15.2 Chemical Safety Assessment

no

SECTION 16: Other information

Full text of H-Statements

H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H341	:	Suspected of causing genetic defects.
H351	:	Suspected of causing cancer.
H373	:	May cause damage to organs through prolonged or repeated exposure.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Carc.	:	Carcinogenicity
Eye Irrit.	:	Eye irritation
Muta.	:	Germ cell mutagenicity
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; BGW - Biological Limit Values; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LSPN - List of Hazardous Notified Substances (Chile); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information	:	Issued according to Regulation (EC) No 1907/2006, Annex II, and its amendments. Changes since the last version are highlighted in the margin.

This version replaces all previous versions.

Sources of key data used to compile the Material Safety Data Sheet	:	The classification information of components is based on raw material supplier data.

Classification of the mixture:		**Classification procedure:**
Eye Irrit. 2	H319	Calculation method
Aquatic Chronic 3	H412	Calculation method

Disclaimer

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