



Safety Data Sheet

According to Regulation (EC) n. 1907/2006, as amended by the Regulation 2020/878 – Annex II

Trade name: WINDFORM® FR1

Current version: 3.0 issued: 17/01/2024

Replaced version: 2.0 issued: 12/05/2021

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

1.1 Product identifier

Trade name

WINDFORM® FR1

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

Relevant identified uses of the substance or mixture

Laser sintering

Uses advised against

Do not use for purposes other than those indicated.

1.3 Details of the supplier of the safety data sheet

Address

CRP TECHNOLOGY SRL
VIA CESARE DELLA CHIESA, 150/C
41126 MODENA
ITALY

Telephone: +39 059 / 821135

Fax: +39 059 / 822071

Email address of responsible/expert person for the Safety Data Sheet: info@crp.eu

1.4 Emergency telephone number

Poison Control Center - Milano Ospedale Niguarda : +39 02 66 101029

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification given in the REGULATION (EC) N° 1272/2008 (CLP) and subsequent amendments and adjustments

Not a hazardous substance or mixture.

2.2 Label elements

Labelling given in REGULATION (EC) N° 1272/2008 (CLP) and subsequent amendments and adjustments

No label necessary for this product.



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2.3 Other hazards

In the presence of an ignition source, dust may form explosive mixture with air.

Results of PBT and vPvB assessment: based on the available information, it is not possible to classify the product or the contained substances as PBT and vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable. The product is not a substance.

3.2 Mixtures

Chemical characterization

Polymer based on:

Components	CAS No.	Concentration Range %	Classification 1272/2008 (CLP)
Azacyclotridecan-2-one, homopolymer	25038-74-8	50%-95%	Not classified
Carbon Fibres	308063-67-4	5%-50%	Not classified
Halogen-free flame retardant		1%-10%	Not classified

Hazardous ingredients

Contained substances classified as hazardous to health according to Regulation (EC) 1272/08 as amended, or for which there are recognized exposure limits: None.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In case of persistent adverse effects, consult a physician. Remove contaminated clothing.

After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air. If symptoms persist, consult a physician.

After skin contact

After contact with skin, wash immediately with soap and water. Remove contaminated clothing. May occur potential skin irritation caused by rubbing.

After contact with molten product, cool quickly with cold water. Do not remove the solidified product from skin. Do not apply creams or unguents. Seek medical attention.



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After eye contact

Remove contact lenses, if present and if it is easy to do it. Rinse immediately the eyes with plenty of water for at least 10 minutes. Keep eyelids wide open while rinsing. The irritating effect is caused by rubbing. Do not apply anything, without the physician's consent. In case of persistent adverse effects, consult a physician.

After ingestion

Seek medical advice immediately. Do not induce vomiting and do not give anything by mouth. If the person is conscious, rinse the mouth with plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation, difficulty breathing with a cough. Irritation of eyes and skin by rubbing.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Avoid high pressure media which could cause the formation of a potentially explosive dust-air mixture.

Suitable extinguishing media

Foam; Carbon dioxide; Extinguishing powder; Water mist.

Unsuitable extinguishing media

High volume water jet.

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO); Nitrogen oxides (NO_x); Sulphur dioxide (SO₂); Toxic/irritating/flammable products resulting from the combustion of organic substances.

5.3 Advice for firefighters

Helmet with protective visor, heat-resistant gloves, protective respiratory equipment with ABEK filter; fire blanket.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in Sections 7 and 8. Ensure adequate ventilation. Avoid dust formation. Keep away sources of ignition.



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For emergency responders

Personal protective equipment - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically or use appropriate vacuum equipment. Avoid dust formation and electrostatic charges. When picked up, treat the recovered material as prescribed in the Section 13.

6.4 Reference to other sections

See as prescribed in the Sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Provide good ventilation of working area. Avoid the formation and deposition of dust.

Provide adequate dust extraction in the working area. When using, do not eat, drink or smoke. Wash hands after removing personal protective equipment. Avoid any contact with the skin and the eyes.

Keep away from heat and sources of ignition, do not smoke.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Provide eye wash fountain in work area. Do not inhale dust.

Use barrier skin cream. Areas of the skin soiled with dust are to be cleaned immediately with soap and water, as the powder draws out natural moisture from the skin.

Advice on protection against fire and explosion

Dust can form an explosive mixture with air.

Keep away from sources of heat and ignition.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep containers dry, tightly closed, at temperatures between 5 and 35°C and relative air moisture of 20 – 70%.

Requirements for storage rooms and vessels

Store product in the original and tightly closed containers.



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Advice on storage assembly

None known.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Exposure limit values (dust)

ITA	Italy	Legislative Decree 9 April 2008, n.81
EU	OEL EU	Dir. 2017/164/EC; Dir. 2009/161/UE; Dir. 2006/15/EC; Dir. 2004/37/EC; Dir. 2000/39/EC; Dec. 2014/113/UE.
	TLV-ACGIH	

Reference	Nation	Value	Value mg/m ³	Value ppm	Remarks
OEL	ITA	TWA	10	--	Inhalable dust
OEL	ITA	TWA	3	--	Respirable dust
ACGIH	US	TWA	10	--	Inhalable dust
ACGIH	US	TWA	3	--	Respirable dust
DEU	DE	MAK	10	--	Inhalable dust
DEU	DE	MAK	4	--	Respirable dust

DNEL – Derived no-effect level

These information are not required

PNEC - Predicted no-effect concentration:

These information are not required

8.2 Exposure controls

Appropriate engineering controls

Provide good ventilation and adequate dust extraction in the working area.

Wear respiratory protection mask in presence of improper ventilation or prolonged exposure to dust.

Individual protection measures, such as personal protective equipment

Eye / face protection

Safety glasses with side shields (EN 166).

Skin protection

Wear fully closed suit. Wear EN 1149-5 and EN13982-1 protective suit.



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Hand protection

Use protective gloves (EN 388; EN 374). Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves. In case of thermal processing, thermally insulating protective gloves (EN407) are to be used.

Other

Closed ESD safety footwear (ESD according to EN 61340-4-3 or equivalent).

Respiratory protection

Use facial respiratory protection mask with protection factor 3 (P3 particulate filter).

Thermal hazards

Not applicable

Environmental exposure controls

See Section 6.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	
Solid/Powder	
Colour	
Dark grey	
Odour	
odourless	
Melting point / Freezing point	
No data available	
Melting point / melting range	
Value	181,3 °C
Method	EN ISO 11357-1
Boiling point or initial boiling point and boiling range	
No data available	



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Flammability	
No data available	
Lower explosion limits	
Value	60 g/m ³ (closed container)
Upper explosion limits	
No data available	
Flash point	
520°C (Cloud, ambient pressure)	
Minimum ignition energy	
Value	>1000mJ
Method	DIN 51794
Remarks	Minimum ignition energy with inductance: 300-1000 mJ
Auto-ignition temperature	
>400°C	
Decomposition temperature	
Value	>300°C
pH	
Not applicable	
Kinematic viscosity	
Not applicable	
Solubility	
insoluble	
Partition coefficient n-octanol/water (log value)	
No data available	
Vapour pressure	
Not applicable	
Density and/or Relative density	
Relative Density	1,0 – 1,25 g/cm ³
Reference temperature	20 °C
Relative vapour density	
Not applicable	
Particle characteristics	
Particle size: D50 40-100 µm	



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9.2 Other information

In the presence of an ignition source: dust may form explosive mixture with air.

Information with regard to physical hazard classes

Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Product is not reactive under expected storage and handling conditions.

10.2 Chemical Stability

The product is stable under expected storage and handling conditions.

10.3 Possibility of hazardous reactions

In the presence of an ignition source: possible explosions caused by concentrations in the air > 60 g/m³

10.4 Conditions to avoid

Avoid dust formation and static discharge.

10.5 Incompatible materials

none, if handled according to instructions

10.6 Hazardous decomposition products

Decomposition temperature > 300°C

In case of fire CO, CO₂, toxic/irritating/flammable products resulting from the combustion of organic substances

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity
No data available
Skin corrosion/irritation
No data available
Serious eye damages/irritation
No data available
Respiratory or skin sensitisation
No data available



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Germ cell mutagenicity
No data available
Cancerogenicity
No data available
Reproduction toxicity
No data available
STOT- single exposure
No data available
STOT- repeated exposure
No data available
Aspiration hazard
No data available
Information on likely routes of exposure
Ingestion (swallowing) - Unknown effects Inhalation - Inhalation of dusts may irritate the respiratory tract. Skin/Eye exposure - eye and skin contact may cause mechanical irritation through dust particles.
Symptoms related to the physical, chemical and toxicological characteristics
Eye contact may cause mechanical irritation through dust particles. Skin contact may cause mechanical irritation through dust particles.
Delayed and immediate effects as well as chronic effects from short and long-term exposure
Inhalation of dusts may irritate the respiratory tract.
Interactive effects
No data available
Absence of specific data
No specific data available

11.2 Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available



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SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)
No data available
Toxicity to fish (chronic)
No data available
Toxicity to Daphnia (acute)
No data available
Toxicity to Daphnia (chronic)
No data available
Toxicity to algae/Aquatic plants: (acute)
No data available
Toxicity to algae/Aquatic plants: (chronic)
No data available
Bacteria/soil microorganisms toxicity
No data available
Toxicity to soil macroorganisms
No data available
Toxicity to birds
No data available
Toxicity to bees
No data available
Toxicity to plants
No data available

12.2 Persistence and degradability

Biodegradation (on water): Inert polymer, non-biodegradable based on its structure.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment



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Based on the available information, it is not possible to classified the product or the contained substances as PBT and vPvB.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Disposal or recover according to the existing national or local regulations. Remove labels from packages/containers only after thorough washing. Do not discharge product into the environment.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Do not discharge into the environment.

SECTION 14: Transport information

14.1 UN number or ID number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for users

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.



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SECTION 15: Regulatory information

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

Regulation (EC) N° 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)
According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.
REACH candidate list of substances of very high concern (SVHC) for authorisation
According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in article 57 and article 59 of REACH (EC) 1907/2006.
Regulation (EC) N° 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES
According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances subjected to the provisions of Annex XVII (restriction entries) of the REACH regulation (EC) 1907/2006.
Council Directive 2012/18/UE on the control of major-accident hazards involving dangerous substances
Not applicable
Decopaint Directive (2004/42/EC)
VOC emissions = 0%
Directive 2010/75/EU — on industrial emissions
VOC emissions = 0%
Regulation (EU) 2019/1148 on the marketing and use of explosives precursors
Not listed

15.2 Chemical safety assessment

No data available.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

Regulation (EC) N° 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.



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The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

This information is based on our present state of knowledge and experience. The safety data sheet describes products with a view to the security requirements. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship. As the specific conditions of use of the product does not fall under the knowledge and control of the supplier, the user will be solely responsible for other than uses for which the product was produced.

Legend:

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- CAS NUMBER: Chemical Abstract Service number
- EC50: Half maximal effective concentration
- EC-Number: European Community number
- CLP: Regulation (EC) No 1272/2008
- DNEL: Derived No Effect Level
- GHS: Globally Harmonized System
- IATA DGR: International Air Transport Association (IATA) Dangerous Goods Regulations
- IC50: - Half maximal inhibitory concentration
- IMDG: International Maritime Dangerous Goods
- IMO: International Maritime Organization
- INDEX NUMBER: index number of annex VI of CLP
- LC50: Lethal Concentration to 50 % of a test population
- LD50: Lethal Dose to 50% of a test population (Median Lethal Dose);
- OEL: Occupational Exposure Limits
- PBT: Persistent, Bioaccumulative and Toxic substance
- PEC: Predicted Environmental concentration
- PEL: Predicted Exposure level
- PNEC: Predicted No Effect Concentration

Sections modified from the previous version: 9.1, 11.1, 11.2, 12.1, 12.6, 12.7

End of safety data sheet