

Safety Data Sheet

[in accordance with 91/155/EEC and 2001/58/EEC]

printing date: 06.11.2007

issue date: 27.08.2007

Section 1 - Identification of the substance / preparation and of the company

Product details	Trade name CETEX - PEI (polyetherimide, reinforced with continuous carbon fiber)
Use	Aerospace/industrial applications
Supplier details	Ten Cate Advanced Composites B.V. PO Box 9 7440 AA Nijverdal The Netherlands Tel. +31 548 633287 (Europe) 714 4371017 (USA)
Information provided by	Ten Cate Advanced Composites B.V.
Emergency telephone number	+31 548 633700

Section 2 - Composition/information on ingredients**Chemical Characterization** PEI thermoplastic resin reinforced with continuous carbon fiber

Ingredient Name	CAS No.	EINECS No.	% w/w	Risk Phrases
Main polymer: polyetherimide	61128-46-9	--	39 – 45	--
Continuous carbon fiber	7440-44-0	231-153-3	55 – 61	--
Partially cured epoxid resin	--	--	< 1	--

Section 3 - Hazards identification**EC-classification** None

Many years of experience has confirmed for PEI resin: acute oral toxicity LD 50 > 10 g/kg (rat) and acute dermal toxicity LD 50 > 2 g/kg (rabbit). According to our current state of knowledge the resin and the reinforcements do not cause any health hazard.

Electric discharge could occur during handling. In order to limit static charging the material should be prevented from sliding over a surface. Rubber gloves should be worn to avoid electrical shocks and to avoid injuries during machining or handling hot material during laminating and forming. Cleaning of fumes, condensates (which may include toxic contaminants), residues and dust from processing and ventilation equipment should also be undertaken in well ventilated conditions. Protective clothing including rubber gloves should be used.

This material burns with difficulty and generally requires a continuous external flame source to sustain combustion. Without flashover fire conditions it will extinguish itself. When forced to burn it will produce a surface char and emits low levels of smoke and toxicity. The main products of combustion are carbon dioxide and carbon monoxide. Some types will evolve trace quantities of hydrogen cyanide, oxides of nitrogen or aldehydes under certain combustion conditions. During the combustion the base PEI or reinforcements do not produce bromine, phosgene or hydrogen chloride.

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Section 4 - First aid measures

Inhalation	(Dust/fumes) Bring person to fresh air. If irritation is severe, seek medical advice.
Skin contact	Normal skin contact during handling is harmless. If, however, material becomes embedded seek medical advice.
Eye contact	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion	No hazard in normal industrial use.
Burns	In case of contact with hot material, rinse thoroughly with plenty of water and seek medical advice.

Section 5 - Fire fighting measures

Suitable extinguishing media	Water is recommended.
Unsuitable extinguishing media	Carbon dioxide is not recommended due to lack of cooling capacity.
Special exposure hazards	In case of fires, hazardous combustion gases are formed: carbon monoxide and sulphur dioxide.
Special protective equipment	In the presence of combustion or carbonization gases, any fire fighting, rescue and clearing up activities should be undertaken only with self-contained respiratory protection.

Section 6 - Accidental release measures

Methods for cleaning up	Pick up mechanically.
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Section 7 - Handling and storage

Handling	Edges of laminates are sharp and could cut skin if not handled correct.
Storage	Can be stored indefinitely in a dark and cool place unless otherwise defined in technical information sheets.

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Section 8 - Exposure controls/personal protection

Hand protection	Protective gloves may reduce skin cutting/irritation. During machining or handling hot material rubber gloves should be worn.
Eye protection	Safety glasses with side shields
Skin protection	Use overalls, buttoned to fit loosely around neck and wrists, long trousers, and good personal hygiene will maximize comfort.
General protective measures	Protective clothing may reduce skin cutting/irritation.
Hygiene measures	Follow good standard industrial practice. Do not eat, drink or smoke at a workplace.

Section 9 - Physical and chemical properties

Form	Consolidated laminates in flat sheets Prepregs on the roll
Colour	Black
Odour	Typical
pH	N/A
Flash point	N/A
Explosion limits	N/A
Water solubility	Product is insoluble in water
Viscosity (20°C)	N/A
Melting range	215 - 350°C
Relative density (20°C)	1.30 - 2.10 g/ml
Vapour pressure (20°C)	N/A
Glass transition temperature (Tg)	215°C

Section 10 - Stability and reactivity

Thermal decomposition	> 500°C (TGA onset in air)
Conditions to avoid	May be stored indefinitely at temperatures below 40°C. Store in a dark and dry place. Keep dry for optimal processing.
Materials to avoid	No hazardous reactions known.
Hazardous decomposition products	Carbon oxides and sulphur dioxide.

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Section 11 - Toxicological information

According to experience, the product is considered to be harmless to health if handled in the correct manner.

Section 12 - Ecological information

Mobility	Insoluble.
Persistence / degradability	No data available.
Bioaccumulation	No data available.
Ecotoxicity	No data available.
Water pollution effect indication	This material is not expected to be harmful.

Section 13 - Disposal considerations

Laminates and forms can be processed several times. So there is a possibility for recycling.

Waste disposal: PEI and reinforcing are not regarded as hazardous chemical substances. Dispose of in accordance to local regulations.

Section 14 - Transport information

Product not classified by transport of dangerous good regulations.

Section 15 - Regulatory information

Hazard warning label not compulsory.

Section 16 - Other information

When heating up to processing temperatures virtually all thermoplastics emit processing fumes. The exact composition of processing fumes depends on the resin formulation including additives, the type of fiber which is used, the residence time in the processing equipment, variables such as press-design and press-parameters. When this product is processed according to processing guidelines from Ten Cate Advanced Composites for CETEX® materials and taking normal precautions detailed below, there are no known adverse effects for human health.

Certain sensitive individuals and those with respiratory impairments however, may experience some temporary irritation by exposure to specific components in the processing fumes. Bring the person into the fresh air. Treat eye irritation by flushing with clean, low pressure water. Treat skin irritation by washing with soap and water. Seek medical attention if irritation persists.

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Normal precautions

Good industrial practice requires adequate ventilation of the workplace. During machining, dust must be removed adequately by ventilation etc. Use of a local exhaust system will remove safely all fumes and dust during processing and secondary operations.

Disclaimer

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