

SAFETY DATA SHEET



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TRADE NAME
ZOLTEK™ PX35 PULTRUDED PROFILE

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

1.1 Product identifier

Product name	ZOLTEK™ PX35 Pultruded Profile
Synonyms	n/a
Chemical family	mixture
Product description	continuous profile made from carbon fiber and cured resin

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

1.2.1 Relevant uses	industrial applications
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1.2.2 Uses advised against	none known
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1.3 Details of the supplier of the safety data sheet

Company	Zoltek Composite Intermediates 27 Guenther Blvd. St. Peters, MO 63376 (314) 291-5110 www.zoltek.com
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E-mail enquiry	sds@zoltek.com
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1.4 Emergency telephone number	+1 (314) 291-5110 8AM-5PM / M-F
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SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Product definition	article
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2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

not classified

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

Hazard symbols none

R-phrases none

2.2 Label elements

Labeling according to Regulation 67/548/EEC or 1994/45/EC

Hazard symbols none

R-phrases none

S-phrases none

Special labeling not applicable

Product is non-hazardous and therefore does not require a hazard warning label, in accordance with OSHA HazCom and EC-directives

2.3 Other hazards

Physio-chemical hazards

see SECTION 10

In the supplied form the product itself is not explosive at all; however, the build-up of fines and dust can lead to a risk of dust explosions.

Upon heating (>150°C), may evolve dangerous gases & vapors

Human health dangers

see SECTION 11 and below

Eye

Dust may cause temporary irritation.

Skin

Dust may cause mild irritation. In some cases, the dust may cause allergic skin reactions.

Inhalation

Dust may cause mild irritation.

Environmental hazards

see SECTION 12

Other hazards

Product and its dusts are electrically conductive.

Take necessary precautions to protect equipment and prevent potential for electrical shock.

SECTION 3: Composition/information on ingredients

3.1 Product-type article

Component	CAS. NO	Weight %
Carbon fibers, PAN-based (carbon)	308063-67-4 (7440-44-0)	65 . 75
Polymerized Resin	none	25 . 35
Kaolin Clay	1332-58-7	0.5 . 1.5

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	not applicable
Inhalation	Remove from the area of the dust or vapor/smoke generated from cutting/grinding to fresh air. Seek medical attention if you feel unwell.
Skin contact	Remove clothing contaminated with dust from cutting/grinding/heating and wash affected areas thoroughly with soap and water.
Eye contact	In case of contact with dust from cutting/grinding process, flush eyes with water for 15 minutes.
Ingestion	In the event of ingestion of dust from cutting/grinding process, rinse mouth with water and drink plenty of additional water afterward; do not induce vomiting unless directed to do so by consulting with a doctor.

4.2 Most important symptoms and effects, both acute and displayed

Irritation of mucous membranes from exposure to dust from cutting/grinding process.

4.3 Indication of any immediate medical attention and special treatment

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media normal firefighting media and procedures

Unsuitable extinguishing media dependent on processing plant conditions

5.2 Special hazards arising from the substance or media

airborne fibers are electrically conductive upon intense heating, CO₂, CO and a minute amount of NO_x, HCN and H₂O may be released

5.3 Advice for firefighters self-contained breathing apparatus (SCBA)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel not applicable

6.1.2 For emergency responders not applicable

6.2 Environmental precautions not applicable

6.3 Methods and material for containment and cleaning up

6.3.1 For containment not applicable

6.3.2 For cleaning up not applicable

6.4 Reference to other sections personal protective equipment (PPE)

See SECTION 8

disposal considerations

See SECTION 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

No special measures necessary if used correctly. Carbon fiber composite coils are under tension – do not cut banding without proper coil release controls. Dust may form an explosive mixture with air when processed. Keep away from sources of ignition and refrain from smoking in the vicinity. Carbon fiber composite dusts are electrically conductive. Electrical equipment, enclosures, circuits and power tools in or near areas where carbon fiber composite are handled should be protected against infiltration or contact with airborne particles or filaments.

Avoid breathing dust, vapors, and gases from after-treatment processes (e.g. grinding/cutting/drilling). Ensure well-ventilated area for such activities.

7.2 Conditions for safe storage, including any incompatibilities

Avoid overheating. Do not store together with oxidizing agents. Store in a dry place. Carbon fiber is electrically conductive and may cause an electrical short.

7.3 Specific end use(s)

see SECTION 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<u>Standard</u>	<u>Value</u>
OSHA PEL	particulates not otherwise regulated (nuisance dust): 5 mg/m ³ (respirable fraction) 15 mg/m ³ (total dust)
ACGIH TLV	3 mg/m ³ (respirable fraction) and 10 mg/m ³ (total)
NHFPC (PRC)	6mg/m ³ ESTL (total dust) and 3mg/m ³ TWA (total dust)
Belgium	2 fiber/cm ³ TWA

8.2 Exposure controls

8.2.1 Appropriate engineering controls local exhaust for airborne dust removal
emergency eyewash

8.2.2 Personal protection equipment

8.2.2.1 Eye and face protection safety glasses

8.2.2.2 Skin protection

Hand protection

protective gloves when performing or handling pieces after cutting & grinding

Other skin protection

Recommend disposable protective garments to eliminate possible skin irritation.

8.2.2.3 Respiratory protection

Personal dust respirator applicable if local engineering controls are inadequate to remove dust and vapors from cutting & grinding processes

8.2.2.4 Thermal hazards

not applicable

8.2.3 Environmental exposure controls see SECTIONS 6 & 7

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	solid, heterogeneous material
Odor	not determined
pH	not determined
Melting point / freezing point	not determined
Initial boiling point and boiling range	not determined
Flashpoint	not determined
Evaporation rate	not determined
Flammability (solid, gas)	not determined
Upper/lower flammability or explosive limits	not determined
Vapor pressure	not determined
Vapor density	not determined
Specific gravity (relative density)	1.6 (H ₂ O @ 4°C = 1.00)
Solubility(ies) water	not soluble
Partition coefficient n-octanol/water	not applicable
Auto ignition temperature	300. 400°C
Decomposition temperature (in Air)	150. 200°C
Viscosity	not applicable
Explosive properties:	dust may form explosive mixture in air
Oxidizing properties	not applicable

9.2 Other information

dust from cutting & grinding activities are electrically conductive and may cause short. circuiting of electrical equipment

SECTION 10: Stability and reactivity

10.1 Reactivity	see SECTION 10.3
10.2 Chemical stability	stable under normal ambient and anticipated storage and handling conditions of temperature and pressure
10.3 Possibility of hazardous reactions	Avoid reactions with strong oxidizing agents. The fine dust from a carbon fiber compound or composite that is cut or formed can create additional dust explosion risk depending on the resin or compounding agent.
10.4 Conditions to avoid	see SECTION 7
10.5 Incompatible materials	see SECTION 10.3
10.6 Hazardous decomposition products	No hazardous decomposition products will be formed during normal usage of carbon fiber composites. Complete or partial combustion may generate COx, NOx, and other trace chemicals.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity	no data available
Skin corrosion/irritation	dust from cutting & grinding processes may cause skin irritation with itching and blushing
Serious eye damage/irritation	dust from cutting & grinding processes may cause eye irritation
Respiratory or skin sensitization	carbon fiber filament diameter $>3\mu\text{m}$ non-respirable (IARC) Inhalation of dust generated by cutting and grinding may irritate the mucous membranes of the upper respiratory tract and may cause coughing. Gases and vapors generated by intense heating of the material (e.g. during cutting & grinding = smoke) are dangerous to one's health and may cause nausea and uneasiness
Germ cell mutagenicity	no data available (skin sensitization)
Carcinogenicity	no data available
Reproductive toxicity	no data available
STOT-single exposure	no data available
STOT-repeated exposure	no data available
Aspiration hazard	not an inhalation hazard

SECTION 12: Ecological information

12.1 Toxicity	not data available
12.2 Persistence and degradability	no data available
12.3 Bioaccumulative potential	no data available
12.4 Mobility in soil	no data available
12.5 Results of PBT and nPvB assessment	no data available
12.6 Other adverse effects	ecological data not available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste materials must be disposed of in accordance with the Directive on waste 2008/98/EC and any other applicable national or local regulations.

SECTION 14: Transport information

14.1 UN number	see SECTION 14.2
14.2 UN proper shipping name	not Dangerous Goods ADR/RID (land) ADN (inland navigation) IMDG (marine)
14.3 Transport hazard class(es)	see SECTION 14.2
14.4 Packing group	see SECTION 14.2
14.5 Environmental hazards	see SECTION 14.2
14.6 Special precautions to user	see SECTIONS 6 to 8
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code	not Dangerous Goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	not applicable
15.2 Chemical safety assessment	has not been carried out

SECTION 16: Other information

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Abbreviations and acronyms

ADN = Accord européen relative au transport international des marchandises dangereuses par voie de navigation intérieure

ADR = Accord européen relative au transport international des marchandises Dangereuses par Route

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging

EEC = European Economic Community

EINECS = European Inventory of Existing Commercial Chemical Substances

ELINCS = European List of Notified Chemical Substances

IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IMDG = International Maritime Code for Dangerous Goods

MARPOL = International Convention for the Prevention of Marine Pollution from Ships

OSHA = Occupational Safety and Health Administration

PBT = Persistent, Bioaccumulative and Toxic substance

RID = Règlement concernant le transport international ferroviare de marchandises dangereuses

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