

# SAFETY DATA SHEET

Effective date: 17 November 2015

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Distribution date: 17 November 2015



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## TRADE NAME

ZOLTEK™ PX35 PREPREG

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

### 1.1 Product identifier

<b>Product name</b>	ZOLTEK™ PX35 Prepreg
<b>Synonyms</b>	Epoxy polymer; Glycidyl Amino Phenol
<b>Chemical family</b>	Epoxy prepreg/carbon fiber roving
<b>Product description</b>	<b>carbon fiber</b> impregnated with epoxy resin

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

**1.2.1 Relevant uses** industrial applications

**1.2.2 Uses advised against** Not to be used in products for which prolonged contact with mucous membranes, abraded skin, or implantation within the human body is specifically intended

Zoltek is not able to recommend this material as safe and effective for such uses and assumes no liability for any such use.

### 1.3 Details of the supplier of the safety data sheet

<b>Company</b>	Zoltek Companies, Inc. 3101 Mckelvey Road St. Louis, MO 63044 USA (314) 291-5110 www.zoltek.com
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**E-mail enquiry** [sds@zoltek.com](mailto:sds@zoltek.com)

**1.4 Emergency telephone number** +1 (314) 291-5110 8AM-5PM Central Time/ M-F

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## SECTION 2: Hazards Identification

### 2.1 Classification of the substance or mixture

**Product definition** article

#### 2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

not determined

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

**Hazard symbols** not determined

**R-phrases** not determined

### 2.2 Label elements

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

**Hazard symbols** not determined

**R-phrases** not determined

**S-phrases** not determined

**Special labeling** not determined

### 2.3 Other hazards

**Physio-chemical hazards** see SECTION 10

**Human health dangers** see SECTION 11 and below

**Eye** none known

**Skin** none known

**Inhalation** none known

**Environmental hazards** see SECTION 12

**Other hazards** see SECTION 15

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### SECTION 3: Composition/information on ingredients

**3.1 Product-type** article

<b><u>Component</u></b>	<b><u>CAS. NO</u></b>	<b><u>EINECS/ELINCS</u></b>	<b><u>%</u></b>
Carbon fiber, polyacrylonitrile (PAN)-based (carbon)	308063-67-4  (7440-44-0)	Polymer: 231-153-3	50 - 80
Epoxy resin	proprietary		20 – 50
Toughening agent	proprietary		0 – 20

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

<b>General information</b>	not applicable
<b>Inhalation</b>	Remove from the area of the dust to fresh air. Seek medical attention if you feel unwell.
<b>Skin contact</b>	Wash affected areas thoroughly with soap and water. Any material adhering to skin should be removed with resin removing creams. Do not use solvents.
<b>Eye contact</b>	Flush eyes with water for 15 minutes. If irritation persists, seek medical attention.
<b>Ingestion</b>	If conscious, give large quantities of water. Get medical attention.

#### 4.2 Most important symptoms and effects, both acute and displayed

no data available

#### 4.3 Indication of any immediate medical attention and special treatment

no data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** Carbon dioxide, foam, dry chemical, water spray

**Unsuitable extinguishing media** dependent on processing plant conditions

### 5.2 Special hazards arising from the substance or media

Extreme thermal decomposition and burning may produce CO<sub>2</sub>, CO, NO<sub>x</sub> and other toxic organic species.

### 5.3 Advice for firefighters

self-contained breathing apparatus (SCBA). Cool fire-exposed containers with water. In the case of large fires, also cool surrounding equipment and structures with water.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**6.1.1 For non-emergency personnel** Work gloves, safety goggles and protective clothing should be worn. NIOSH-approved dust respirator or dust mask is recommended where dust arises.

**6.1.2 For emergency responders** Work gloves, safety goggles and protective clothing should be worn. NIOSH-approved dust respirator or dust mask is recommended where dust arises.

### 6.2 Environmental precautions

not applicable

### 6.3 Methods and material for containment and cleaning up

**6.3.1 For containment** In case of spill, collect and place into closable container for disposal.

**6.3.2 For cleaning up** To dispose of properly, bury or incinerate in approved site or facility in accordance with local, state and federal regulations.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**WARNING:** Harmful if concentrated decomposition fumes are inhaled, absorbed through the skin or swallowed. Do not get in eyes, on skin or on clothing. Do not breathe dust. Good ventilation and good personal hygiene are essential. Wash thoroughly after handling and before eating, drinking or smoking. Use clean clothing daily. A shower after work is recommended.

## 7.2 Conditions for safe storage, including any incompatibilities

Store in dry chemical storage facility in tightly closed containers. Store away from food, food containers, and clothing.

## 7.3 Specific end use(s)

see section 1.2

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

OSHA and ACGIH (USA) have not established air contamination for carbon fibers. Under certain conditions this substance may be a nuisance dust. OSHA has an established standard for particulates not otherwise regulated (nuisance dust) set at  $5 \text{ mg/m}^3$  (respirable fraction) and  $15 \text{ mg/m}^3$  (total dust). ACGIH has established an exposure value of  $3 \text{ mg/m}^3$  (respirable fraction) and  $10 \text{ mg/m}^3$  (total).

NHFPC (PRC) has an established standard for carbon fiber's particulates not otherwise regulated set at  $6 \text{ mg/m}^3$  ESTL (total dust) and  $3 \text{ mg/m}^3$  TWA (total dust),

Belgium has established an Occupational Exposure Limit for carbon fiber as  $2 \text{ fiber/cm}^3$  TWA.

### 8.2 Exposure controls

**8.2.1 Appropriate engineering controls** local exhaust for airborne fiber removal.

#### 8.2.2 Personal protection equipment

**8.2.2.1 Eye and face protection** safety goggles

#### 8.2.2.2 Skin protection

**Hand protection** protective gloves

**Other skin protection** Recommend disposable protective garments to eliminate possible skin irritation. Apply barrier cream for protection of exposed skin.

**8.2.2.3 Respiratory protection** Personal dust respirators applicable if high degree of fiber fly is experienced.

**8.2.2.4 Thermal hazards** not applicable

8.2.3 Environmental exposure controls see SECTION 6 & 7

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**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

<b>Appearance</b>	epoxy-coated carbon fiber
<b>Odor</b>	odorless
<b>Odor threshold</b>	not determined
<b>pH</b>	not determined
<b>Melting point / freezing point</b>	60°C (resin)
<b>Initial boiling point and boiling range</b>	not determined
<b>Flashpoint</b>	not determined
<b>Evaporation rate</b>	not determined
<b>Flammability (solid, gas)</b>	not determined
<b>Upper/lower flammability or explosive limits</b>	not determined
<b>Vapor pressure</b>	not determined
<b>Vapor density</b>	not determined
<b>Relative density (specific gravity)</b>	1.58 (H <sub>2</sub> O @ 4°C = 1.00)
<b>Solubility(ies) water</b>	insoluble
<b>Partition coefficient n-octanol/water</b>	not applicable
<b>Auto ignition temperature</b>	not applicable
<b>Decomposition temperature (in Air)</b> resin preparation; carbon fiber;	>300°C >650°C
<b>Viscosity</b>	not determined
<b>Explosive properties:</b>	not determined
<b>Oxidizing properties</b>	not determined

**9.2 Other information** no other information available

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**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	see SECTION 10.3
<b>10.2 Chemical stability</b>	stable under normal ambient and anticipated storage and handling conditions of temperature and pressure
<b>10.3 Possibility of hazardous reactions</b>	Hazardous polymerization will, not occur under normal conditions. Can react with strong oxidizing agents, acids and bases.

<b>10.4 Conditions to avoid</b>	Temperatures >300°C, also see SECTION 7
<b>10.5 Incompatible materials</b>	see SECTION 10.3
<b>10.6 Hazardous decomposition products</b>	Extreme thermal decomposition and burning may produce CO <sub>2</sub> , CO, NO <sub>x</sub> and other toxic organic species.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

<b>Acute toxicity</b>	no data available
<b>Skin corrosion/irritation</b>	no data available
<b>Serious eye damage/irritation</b>	no data available
<b>Respiratory or skin sensitization</b>	no data available
<b>Germ cell mutagenicity</b>	no data available
<b>Carcinogenicity</b>	no data available
<b>Reproductive toxicity</b>	no data available
<b>STOT-single exposure</b>	no data available
<b>STOT-repeated exposure</b>	no data available
<b>Aspiration hazard</b>	not an inhalation hazard Carbon fiberfilament diameter >3µm / non-respirable (IARC)

## SECTION 12: Ecological information

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

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**SECTION 14: Transport information**

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

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**SECTION 15: Regulatory information**

<b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	<b>California Proposition 65:</b> This product contains a chemical known by the State of California to cause cancer
<b>15.2 Chemical safety assessment</b>	has not been carried out

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**SECTION 16: Other information**

<b>16.1 Revision date:</b>	<b>17 November 2015, CN: 1343</b>
<b>16.2 Previous revision:</b>	17 January 2012
<b>16.3 Abbreviations and acronyms</b>	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 Coder 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 ferroviaire de marchandises dangereuses

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