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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>ZOLTEK™ OX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>OPAN, OPF</td>
</tr>
<tr>
<td>Chemical family</td>
<td>Oxidized/stabilized polyacrylonitrile (PAN) fiber</td>
</tr>
<tr>
<td>Product description</td>
<td>continuous fiber made from precursor</td>
</tr>
</tbody>
</table>

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 none known

1.3 Details of the supplier of the safety data sheet

Company
Zoltek Corporation
3101 McKelvey Rd.
St. Louis, MO 63044
(314) 291-5110
www.zoltek.com

E-mail enquiry
sds@zoltek.com

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

Human health dangers see SECTION 11 and below

Eye
Flush eyes with water for 15 minutes.

Skin
Wash affected areas thoroughly with soap and water.

Inhalation
Remove from the dust area to fresh air.

Environmental hazards see SECTION 12

Other hazards
-
SECTION 3: Composition/information on ingredients

3.1 Product-type article

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS. NO</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidized or stabilized</td>
<td>308060-39-1</td>
<td>100</td>
</tr>
<tr>
<td>Polyacrylonitrile (PAN) fiber</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General information not applicable

Inhalation Remove from the dust area to fresh air.

Skin contact Wash affected areas thoroughly with soap and water.

Eye contact Flush eyes with water for 15 minutes.

Ingestion In the event of deliberate ingestion, consult with a doctor.

4.2 Most important symptoms and effects, both acute and delayed

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 -

5.2 Special hazards arising from the substance or media

upon intense heating, CO₂, CO and a minute amount of NOₓ, 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 Keep the package sealed, away from dirt and moisture. Avoid exposure to sunlight.

7.2 Conditions for safe storage, including any incompatibilities None

7.3 Specific end use(s) see SECTION 1.2

SECTION 8: Exposure controls/personal protection

8.1 Control parameters None

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**  
Choose appropriate gloves to protect hands against hazards specific to place of work.

**Other skin protection**  
not applicable

8.2.2.3 Respiratory protection  
Normal industrial hygiene practice (dust mask) if high degree of fiber fly is experienced.

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>solid</td>
</tr>
<tr>
<td>Odor</td>
<td>not determined</td>
</tr>
<tr>
<td>pH</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not determined</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapor density</td>
<td>not determined</td>
</tr>
<tr>
<td>Specific gravity (relative density)</td>
<td>≥1.35 g/cm³</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>water not soluble</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>n-octanol/water not applicable</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>670°C</td>
</tr>
<tr>
<td>Decomposition temperature (in Air)</td>
<td>500°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not applicable</td>
</tr>
<tr>
<td>Explosive properties:</td>
<td>not applicable</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

9.2 Other information  
not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity  
see SECTION 10.3
10.2 Chemical stability  stable
10.3 Possibility of hazardous reactions  not determined
10.4 Conditions to avoid  see SECTION 7
10.5 Incompatible materials  see SECTION 10.3
10.6 Hazardous decomposition products  Burning will produce CO\textsubscript{2}, CO, and minute amounts of NO\textsubscript{x}, HCN and H\textsubscript{2}O.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Accute toxicity  no data available
- Skin corrosion/irritation  See section 4.
- Serious eye damage/irritation  See section 4.
- Respiratory or skin sensitization  See section 4.  no data available (skin sensitization)
- Germ cell mutagenicity  no data available
- 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

Landfill sites - industrially approved. Do not incinerate. If necessary, consult local, state, and federal agencies prior to disposal of this material.

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

CA Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer:

Diethanolamine (CAS 111-42-2), trace amount (impurity)

Toxic Substances Control Act (TSCA) Status

This product is TSCA-compliant

15.2 Chemical safety assessment

has not been carried out
SECTION 16: Other information

16.1 Revision date: 15 June 2016, CN #1389

16.2 Previous revision: 13 October 2015, CN #1340

16.3 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 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

16.4 Disclaimer

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