

## 1. Product and company identification

### Product identifier

Trade name: ZYLAR® Resin - Natural Grades

This safety data sheet pertains to the following products:

ZYLAR® 220

ZYLAR® 261

ZYLAR® 530

ZYLAR® 631

ZYLAR® 650

ZYLAR® 670

ZYLAR® 960

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

General use: Polymer  
For industrial processing only

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

Company name: INEOS Styrolution America LLC  
Street/POB-No.: 4245 Meridian Parkway, Suite 151  
Postal Code, city: Aurora IL 60504, US  
WWW: www.styrolution.com  
E-mail: INSTY.americas@ineos.com  
Telephone: +1 866 - 890 - 6353  
Telefax: +1 866 - 890 - 6362

Department responsible for information:  
Infopoint, Telephone: +1 866 - 890 - 6353  
E-mail: INSTY.americas@ineos.com

### Emergency phone number

**CHEMTREC**  
**Telephone: 1 - 800 - 424 - 9300 (24 h)**  
**(collect calls accepted)**

## 2. Hazards identification

### Emergency overview

Appearance: Physical state at 68 °F and 101.3 kPa: solid  
Form: pellets/granulate  
Color: colorless up to white  
Odor: weak  
Classification: This material is classified as not hazardous.

### Regulatory status

This material is not considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Hazards not otherwise classified

Dust: Can cause skin, eye and respiratory tract irritation.  
In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.  
The melted product can cause severe burns.  
Swallowing may cause gastrointestinal irritation and pain of guts.  
see section 11: Toxicological information

### 3. Composition / Information on ingredients

Chemical characterization:	Copolymer of: CAS No. 25034-86-0: Styrene-Methyl methacrylate copolymer CAS No. 9003-55-8: Styrene-butadiene-copolymer
Additional information:	The product does not contain dangerous substances above limits that need to be mentioned in this section according to applicable legislation.

### 4. First aid measures

In case of inhalation:	In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. If breathing has stopped, give artificial respiration immediately. seek medical attention
Following skin contact:	The melted product can cause severe burns. Do not remove the product from the skin without medical assistance. After contact with molten product, cool skin area rapidly with cold water. Consult physician.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist in the event of irritation.
After swallowing:	Do not induce vomiting. Rinse mouth with water. Drink one or two glasses of water. Never give an unconscious person anything through the mouth. seek medical attention

#### Most important symptoms/effects, acute and delayed

Dust: Skin irritation, eye irritations and redness

#### Information to physician

Treat symptomatically.

### 5. Fire fighting measures

Flash point/flash point range:	Not applicable
Auto-ignition temperature:	No data available
Suitable extinguishing media:	Water spray jet, foam. Only in case of small fires: dry chemical powder, carbon dioxide, Sand, earth.
Extinguishing media which must not be used for safety reasons:	Full water jet

#### Specific hazards arising from the chemical

In case of fire may be liberated: Smoke, styrene, Methyl methacrylate, butadiene, carbon monoxide and carbon dioxide (CO<sub>2</sub>).

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.

Protective equipment and precautions for firefighters:	Wear a self-contained breathing apparatus and chemical protective clothing.
Additional information:	Cool endangered containers with water jetspray.

### 6. Accidental release measures

Personal precautions:	Keep the molten mass away from the eyes and the skin. Where there is a risk of exothermal decomposition as a result of overheating (rise in temperature, formation of fumes or smoke) cool the melt in a water bath. Provide adequate ventilation. Wear personal protection equipment. Do not breathe dust.
Environmental precautions:	Do not allow to penetrate into soil, waterbodies or drains.

Methods for clean-up: Avoid generation of dust. Remove all sources of ignition. Provide adequate ventilation. Take up mechanically. Collect in closed containers for disposal.

Additional information: Special danger of slipping by leaking/spilling product.

## 7. Handling and storage

### Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe dust. In the case of the formation of dust: Withdraw by suction.

In case of melting: To avoid thermal decomposition, do not overheat. Make sure there is sufficient air exchange and / or that working rooms are air suctioned. Avoid exceeding WEL threshold levels. Do not breathe vapors.

Molten material: Avoid contact with the substance. After work, wash hands and face.

Precautions against fire and explosion: Take precautionary measures against static discharges. Keep away from sources of ignition. Use grounding equipment. Use explosion-proof equipment and non-sparking tools/utensils. Avoid open flames. In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.

### Storage

Requirements for storerooms and containers: Store in a well-ventilated place. Keep container tightly closed. Protect against heat /sun rays.

Further details: Special danger of slipping by leaking/spilling product.

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
	ZYLAR® Resin - Natural Grades	USA: ACGIH: TWA	10 mg/m <sup>3</sup> (Dust limit value, inhalable fraction)
		USA: ACGIH: TWA	3 mg/m <sup>3</sup> (Dust limit value, respirable fraction)
		USA: OSHA: TWA	15 mg/m <sup>3</sup> (Dust limit value, inhalable fraction)
		USA: OSHA: TWA	5 mg/m <sup>3</sup> (Dust limit value, respirable fraction)
557-05-1	Zinc distearate	USA: ACGIH: TWA	10 mg/m <sup>3</sup> (inhalable fraction)
		USA: ACGIH: TWA	3 mg/m <sup>3</sup> (respirable fraction)
		USA: NIOSH: TWA	10 mg/m <sup>3</sup> inhalable fraction
		USA: NIOSH: TWA	5 mg/m <sup>3</sup> (respirable fraction)
		USA: OSHA: TWA	15 mg/m <sup>3</sup> (inhalable fraction)
		USA: OSHA: TWA	5 mg/m <sup>3</sup> (respirable fraction)

Additional information: The product contains very low levels of residual monomers and process chemicals (styrene, ethylbenzene, methyl methacrylate and butadiene) that may be evolved during thermal processing, along with possible decomposition products. As the identity and levels of these impurities evolved will depend upon the processing conditions (temperature etc.) it is the responsibility of the user to determine the adequacy of any protection or safety measures.

## Engineering controls

Provide good ventilation in the work area. Additional controls are not normally necessary when handling the polymer.

Thermal extrusion: Provide local exhaust ventilation to ensure that the workplace exposure limit is not exceeded.

Use of respiratory protection may be necessary during maintenance activities.

See also information in chapter 7, section storage.

## Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing. Boots or Wear protective shoes.

In case of dust formation: Overall

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Protective gloves made of fabric or leather.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

In case of melting: Impervious heat protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Glove material: Leather

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

General hygiene considerations: Molten material: Avoid contact with skin.

Avoid breathing dust and vapors. Keep away from sources of ignition.

Wash hands before breaks and after work.

In case of dust formation: Particular danger of slipping on spilled product on the ground.

## Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

# 9. Physical and chemical properties

## Information on basic physical and chemical properties

Appearance:	Physical state at 68 °F and 101.3 kPa: solid Form: pellets/granulate Color: colorless up to white
Odor:	weak
Odor threshold:	No data available
pH:	Not applicable
Melting point/freezing point:	217.4 °F (softening point)
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	Not applicable
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	1.05 g/cm <sup>3</sup>
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	No data available

Auto-ignition temperature:	No data available
Thermal decomposition:	> 550.4 °F
Explosive properties:	In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
Oxidizing characteristics:	not oxidising

## 10. Stability and reactivity

Reactivity:	No data available
Chemical stability:	Product is stable under normal storage conditions.
Possibility of hazardous reactions:	In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
Conditions to avoid:	Avoid open flames. Avoid dust formation.
Incompatible materials:	None known
Hazardous decomposition products:	When greatly overheated, material may release hazardous decomposition products: monomers, hydrocarbons, gases/vapors, cyclic low molecular weight oligomers, carbon monoxide and carbon dioxide.
Thermal decomposition:	> 550.4 °F

## 11. Toxicological information

### Toxicological tests

Toxicological effects:	<p>The statements are derived from the properties of the single components. No toxicological data is available for the product as such.</p> <p>Acute toxicity (oral): Based on available data, the classification criteria are not met. Mild acute toxicity</p> <p>Acute toxicity (dermal): Based on available data, the classification criteria are not met. Mild acute toxicity May cause irritations.</p> <p>Acute toxicity (inhalative): Based on available data, the classification criteria are not met. Mild acute toxicity. May cause irritations.</p> <p>Skin corrosion/irritation: Lack of data. Dust: Can cause skin, eye and respiratory tract irritation. Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.</p> <p>Serious eye damage/irritation: Lack of data. Dust: Can cause skin, eye and respiratory tract irritation. Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.</p> <p>Sensitisation to the respiratory tract: Lack of data.</p> <p>Skin sensitisation: Based on available data, the classification criteria are not met. Not known to cause sensitization.</p> <p>Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met. The chemical structure of the polymer does not suggest a specific alert for such an effect.</p> <p>Carcinogenicity: Based on available data, the classification criteria are not met. No indications of human carcinogenicity exist.</p> <p>Reproductive toxicity: Based on available data, the classification criteria are not met. The chemical structure of the polymer does not suggest a specific alert for such an effect.</p> <p>Effects on or via lactation: Lack of data.</p> <p>Specific target organ toxicity (single exposure): Lack of data.</p> <p>Specific target organ toxicity (repeated exposure): Lack of data. Dust: Can cause skin, eye and respiratory tract irritation. Processing, thermal hazards: Vapors: Can cause skin, eye and respiratory tract irritation.</p> <p>Aspiration hazard: Lack of data.</p>
Other information:	<p>When handled appropriately, even after long years of experience with this product, no adverse health effects are known.</p>

### Symptoms

Dust:  
Can cause skin, eye and respiratory tract irritation.  
The melted product can cause severe burns.  
Thermal treatment, Processing: Irritating to eyes, respiratory system and skin.

## 12. Ecological information

### Ecotoxicity

Aquatic toxicity:	no evidence of aquatic toxicity
Effects in sewage plants:	Not toxic to sewage organisms.
Further details:	Pellets may accumulate in the digestive systems of birds and aquatic life, causing injury and possible death due to starvation.

### Mobility in soil

Product is not soluble in water.  
Substance is heavier than water and sinks.  
mobility in soil: low

### Persistence and degradability

Further details: Biodegradation: Product is not readily biodegradable.  
Degrades photochemically in the air.  
The product is likely to persist in the environment.

### Additional ecological information

General information: Do not allow to enter into ground-water, surface water or drains.

## 13. Disposal considerations

### Product

Recommendation: Recycling or special waste incineration.  
After appropriate treatment the product can be remelted and reprocessed into new moulded articles. Mechanical recycling is only possible if the material has been selectively retrieved and carefully segregated according to type.

### Package

Recommendation: Dispose of waste according to applicable legislation.  
Non-contaminated packages may be recycled.

## 14. Transport information

### UN number

ADR/RID, IMDG, IATA-DGR: not applicable

### UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted

### Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR: not applicable

### Packing group

ADR/RID, IMDG, IATA-DGR: not applicable

### Environmental hazards

Marine pollutant: no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

### USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

### Sea transport (IMDG)

Proper shipping name: Not restricted  
Marine pollutant: no

### Air transport (IATA)

Proper shipping name: Not restricted

**Further information**

No dangerous good in sense of these transport regulations.

**15. Regulatory information**

**National regulations - U.S. Federal Regulations**

Styrene-Methyl methacrylate copolymer: TSCA Inventory: listed; EPA flags XU  
TSCA HPVC: not listed  
Styrene-butadiene-copolymer: TSCA Inventory: listed; EPA flags XU  
TSCA HPVC: not listed  
White mineral oil (petroleum): TSCA Inventory: listed; UVCB  
TSCA HPVC: not listed  
Zinc distearate: TSCA Inventory: listed  
TSCA HPVC: not listed

**National regulations - U.S. State Regulations**

California Proposition 65:  
THIS PRODUCT(S) CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**National regulations - Canada**

All ingredients of this product are listed on the DSL Domestic Substances List, or are not required to be listed on the DSL Domestic Substances List.

**National regulations - Great Britain**

Hazchem-Code: -

**16. Other information**

Hazard rating systems:



NFPA Hazard Rating:  
Health: 1 (Slight)  
Fire: 1 (Slight)  
Reactivity: 0 (Minimal)  
HMIS Version III Rating:  
Health: 1 (Slight)  
Flammability: 1 (Slight)  
Physical Hazard: 0 (Minimal)  
Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
X	



## ZYLAR® Resin - Natural Grades

Material number ZYL001

Abbreviations and acronyms: ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
AS/NZS: Australian Standards/New Zealand Standards  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
DSL: Domestic Substances List  
EC: European Community  
EN: European Standard  
EQ: Excepted quantities  
IATA: International Air Transport Association  
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
MFSU: Manufacture, formulation, supply and use  
OEL: Occupational Exposure Limit Value  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit

Reason of change: Changes in section 8: Occupational exposure limit values

Date of first version: 8/17/2012

**Department issuing data sheet**

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.