Material Safety Data Sheet

# ZYLtech ASA GF 3D Printer Filament

---

## 1. Chemical Product/Company Name

| | |
|---|---|
| *Substance or Preparation*<br>*Substance Chemical Name* | Glass Fiber Filled ASA (Acrylonitrile-Styrene-Acrylate Copolymer) |
| *Product Description* | Engineered Plastics |
| *Product Use* | 3D Printing - Do not use in printers where temperatures exceed 300°C. |
| *Supplier* | ZYLtech Engineering, LLC<br>283 Lockhaven Dr Ste 122<br>Houston TX 77073<br>csr@zyltech.com |

## 2. Composition/Ingredient Information

| | |
|---|---|
| *Materials* | 85% ASA Resin (CAS 26299-47-8)<br>15% Glass Fiber (CAS 65997-17-3) |

## 3. Hazards Identification

| | |
|---|---|
| *Classification in accordance with paragraph (d) of 29 CFR 1910.1200* | None needed according to classification criteria |
| *GHS Label Elements Symbol(s)* | None needed according to classification criteria |
| *Signal Word* | None needed according to classification criteria |
| *Hazard Statement(s)* | None needed according to classification criteria. |

Precautionary Statement(s)

| | |
|---|---|
| *Prevention* | None needed according to classification criteria |
| *Response* | None needed according to classification criteria. |
| *Storage* | None needed according to classification criteria. |
| *Disposal* | Dispose of contents/container in accordance with local/ regional/national/international regulations. |

## 4. First Aid Measures

| | |
|---|---|
| *Eyes* | It is unlikely that first aid will be required. Dust may be irritating to the eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention, if needed. |
| *Skin* | It is unlikely that first aid will be required. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. |
| *Ingestion* | IF SWALLOWED - Rinse mouth. Get immediate medical advice/attention. |
| *Inhalation* | Heating may release vapors which may be irritating. In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. Get medical advice/attention. |
| *Indication of any Immediate Medical Attention and Special Treatment Needed* | First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Treat symptomatically and supportively. |

Most Important Symptoms/Effects

| | |
|---|---|
| *Acute* | Molten material may cause thermal burns. |
| *Delayed* | No information on significant adverse effects. |
| *Note to Physicians* | Treat symptomatically. Give artificial respiration if not breathing. |
| *Antidote* | None known. Treat symptomatically and supportively. |

## 5. Accidental Release Measures

| | |
|---|---|
| *Personal Precautions, Protective Equipment and Emergency Procedures* | No measures required. |
| *Methods and Materials for Containment and Cleaning Up* | Collect spilled material in appropriate container for disposal. Dispose in accordance with all applicable regulations. |
| *Environmental Precautions* | Avoid release to the environment. Comply with all applicable regulations on spill and release reporting. Prevent entry into waterways, sewers, basements, or confined areas. |

## 6. Handling and Storage

| | |
|---|---|
| *Precautions for Safe Handling* | Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. |
| *Conditions for Safe Storage, Including any Incompatibilities* | None needed according to classification criteria. Store in a cool dry place. Store below 50 C. Avoid heat, flames, sparks and other sources of ignition. Keep away from incompatible materials. |
| *Incompatible Materials* | Oxidizing agents. |

## 7. Exposure Controls/Personal Protection

| | |
|---|---|
| *Component Exposure Limits* | Styrene - 100-42-5<br>ACGIH - 20 ppm TWA / 40 ppm STEL<br>NIOSH - 50 ppm TWA; 215 mg/m3 TWA / 100 ppm STEL; 425 mg/m3 STEL / 700 ppm IDLH<br>OSHA (US) - 100 ppm TWA / 200 ppm Ceiling<br>Mexico - 50 ppm TWA LMPE-PPT; 215 mg/m3 TWA LMPE-PPT / 100 ppm STEL [LMPE-CT]; 425 mg/m3 STEL [LMPE-CT] /<br>Skin - potential for cutaneous absorption |
| *EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures* | There are no biological limit values for any of this product's components. |

| | |
|---|---|
| *ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)* | Styrene (CAS 100-42-5)<br><br>400 mg/g creatinine<br>Medium: urine<br>Time: end of shift<br>Parameter: Mandelic acid plus phenylglyoxylic acid (nonspecific)<br><br>40 µg/L<br>Medium: urine<br>Time: end of shift<br>Parameter: Styrene |
| *Engineering Controls* | Provide local exhaust ventilation system. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. |

Individual Protection Measures, such as Personal Protective Equipment

| | |
|---|---|
| *Eye/face protection* | None during normal use. Protect against molten solid. |
| *Skin Protection* | None during normal use. Protect against molten solid. |
| *Respiratory Protection* | No respirator is required under normal conditions of use. If respirable dusts are generated, respiratory protection may be needed. |
| *Glove Recommendation* | Protect against molten solid. In the molten form, Wear protective gloves. |

## 8. Physical and Chemical Properties

| | |
|---|---|
| *Appearance* | Spool, string, strand |
| *Physical State* | solid |
| *Odor* | odorless, sweet, plastic |
| *Color* | clear, translucent, opaque |
| *Odor Threshold* | varies |
| *Melting Point* | Softening above 100 °C |
| *Auto-ignition temperature* | 466 °C |
| *Flash Point* | 404°C |

| | |
|---|---|
| *Lower Explosive Limit* | 45 g/m$^3$ |
| *Decomposition temperature* | >250 °C |
| *Specific Gravity (water=1)* | 1.03 - 1.1 |
| *Water Solubility* | Insoluble |

**9. Stability and Reactivity**

| | |
|---|---|
| *Reactivity* | The product is chemically stable under recommended conditions of storage, use and temperature. |
| *Chemical Stability* | Stable under normal conditions of use. |
| *Possibility of Hazardous Reactions* | Will not polymerize. |
| *Conditions to Avoid* | Avoid contact with temperatures above 250 C. |
| *Incompatible Materials* | Oxidizing agents. |
| *Hazardous decomposition products* | Oxides of carbon, oxides of nitrogen, HCN, acrylonitrile, styrene monomer. |

**10. Ecological Information**

*Component Analysis - Aquatic Toxicity:*

Styrene - 100-42-5

Fish –
LC50 96 h Pimephales promelas 3.24 - 4.99 mg/L [flow-through];
LC50 96 h Lepomis macrochirus 19.03 - 33.53 mg/L [static];
LC50 96 h Pimephales promelas 6.75 - 14.5 mg/L [static];
LC50 96 h Poecilia reticulata 58.75 - 95.32 mg/L [static]

Algae -
EC50 72 h Pseudokirchneriella subcapitata 1.4 mg/L IUCLID;
EC50 96 h Pseudokirchneriella subcapitata 0.72 mg/L IUCLID;
EC50 72 h Pseudokirchneriella subcapitata 0.46 - 4.3 mg/L [static] EPA;
EC50 96 h Pseudokirchneriella subcapitata 0.15 - 3.2 mg/L [static] EPA

Invertebrate - EC50 48 h Daphnia magna 3.3 - 7.4 mg/L EPA

## 11. Disposal Information

*Disposal Methods:*

Dispose of contents/container in accordance with local /regional/national/international regulations. Avoid release to the environment. Incineration should be done in accordance with prevailing municipal, state, and federal laws and standards from local environmental agencies.

## 12. Transportation Information

*UN/NA #:* Not regulated

*International Bulk Chemical Code - This material contains one or more of the following chemicals required by the IBC Code to be identified as dangerous chemicals in bulk:*

Styrene - 100-42-5
IBC Code - Category Y

## 13. Regulatory Information

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan:

Styrene - 100-42-5
SARA 313 - 0.1 % de minimis concentration
CERCLA - 1000 lb final RQ; 454 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: No
Chronic Health: No
Fire: No
Pressure: No
Reactivity: No

U.S. State Regulations

The following component appears on one or more of the following state hazardous substances lists: Styrene - 100-42-5 - CA MA MN NJ PA

Not listed under California Proposition 65

**14. Other Information**

*NFPA Ratings:*

Health – 0
Fire – 1
Reactivity – 0

(0=Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe)

Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.