Advanced Engineered Filaments

Safety Data Sheet

Original release date: October 10, 2016

ASA Filament

Section 1 Product and Company Identification

Product name: ASA Filament
Description: Thermoplastic
Revision date: October 24, 2016

Contact for Information/Manufacturer identification:

Advanced Engineered Filaments
2755 Lauzon Parkway
Windsor, Ontario,
N8T 3H5

Ph. (519) 944-9200 Ext. 1047

Section 2 Hazards Identification

2.1 Emergency Overview
HMOIS (US only): Health 1, Fire Hazard 1, Reactivity 0
NFPA: Health 0, Flammability 0, Reactivity 0

2.2 OSHA Regulatory Status
All Ingredients are encapsulated by the polymer and there not considered hazardous by the OSHA Hazards Communication Standard (29 CFR 1910.1200)

2.3 Potential Health Effects
Routes of entry for solids include eye and skin contact, ingestion and inhalation.
Refer to section 4 for First Aid Measures

2.4 Potential Environmental Effects
None Known.

Section 3 Composition/Information on Ingredients

Chemical name
2-propenoic acid butyl ester polymer with ethenylbenzene and 2-propenenitrile
Trade name
ASA
CAS No
26299-47-8
Content
97-100%
Other Ingredients
Typical stabilizers and lubricants
Content
0-3%

Section 4 **First Aid Measures**

Eyes: Flush with water for at least 15 mins. If irritation persists seek medical attention.

Skin: For thermal burns, immediately flush with cold water. Do not attempt to remove polymer from skin. Seek medical attention.

Inhalation: Fumes released from heated material may cause respiratory irritation. Leave exposed area and seek fresh air. If irritation persists seek medical attention.

Ingestion: Do not induce vomiting. Seek medical attention.

Section 5 **Fire Fighting Measures**

Wear protective clothing and use self-contained breathing equipment. Extinguishing media to include water, foam, CO2 and dry chemical.

5.1 **Specific hazards arising from the chemical**

Pyrolysate: carbon dioxide, carbon monoxide, hydrogen cyanide and a variety of chemical substances. Dust can form explosive mixture with air.

5.2 **Special measures for firefighters**

Keep containers cool with water until well after fire is out.
Wear protective clothing.

Section 6 **Accidental Release Measures**

Spilled material may cause a slip hazard. Vacuum or sweep material and place in a disposal container.

Section 7 **Handling and Storage**

Handling: See 8.3 personal Protective Equipment
Avoid formation of dust.
Ensure adequate ventilation
Avoid getting bags & pellets wet.
Avoid extreme heat & sources of ignition (i.e. heat sparks, open flame etc.)

Section 8 **Exposure Guidelines**

8.1 **Storage:** Keep container closed to prevent contamination.
Special characteristics or information: No special characteristics listed for this product.

8.2 **Engineered Controls**

Localized ventilation is recommended.

8.3 **Personal Protective Equipment**

Eyes:	Safety Glasses
Hands:	Cotton gloves for handing molten plastic.
Skin:	Protective clothing for contact with molten plastic.
Respirator:	NIOSH approved respirator for dust generation from normal processing operations.
Hygiene:	Wash thoroughly after handling and before eating or drinking.

Section 9 **Physical and Chemical Properties**

Physical condition:	Solid Pellets
Odor:	Odorless at ambient temperature. Characteristic plastic odor during heating.
Flash Point:	Over 400 F
Melting Point:	356 – 392 F
Flammability (solid,gaseous)	Not reasonably applicable.
Min Limit of Explosion	Not reasonably applicable.
Max limit of Explosion	Not reasonably applicable.
Vapor pressure:	Not reasonably applicable.
Specific gravity:	1.07
Molecular weight:	50,000 – 250,000

Section 10 Stability and Reactivity
This product is stable and non-reactive. Hazardous decomposition of products can occur if overheated or ignited. Avoid fire and heating over 140 F.

Section 11 Toxicology Information
Based on our experience and the information available, no adverse health effected are expected if handled as recommended with suitable precautions for designated uses.

Section 12 Ecological Information
Refer to Section 6.

Section 13 Disposal Considerations
Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, (3) landfill. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

Section 14 Transportation Information
No information available.

Section 15 Regulatory Information
Not applicable.

Section 16 Other Information
Definitions
CAS = Chemical Abstract Number
DSL = Domestic Substance List
OSHA = Occupational Safety and Health Act.
PEL = Permissible Exposure Limit
TSCA = Toxic Substance Control Act
SARA = Superfund Amendments & Reclamation Act
VOC = Volatile Organic Chemical
N/E = Not Established.

These test results are based on reliable procedures. Due to variable conditions of fitness for a particular or methods of processing no guarantees or warrantees are expected or implied including warranty of fitness for a particular purpose. These are not product specifications, nor manufacturing minimums. Each user of the material should make appropriate tests to determine the suitability of the material for use.

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Technical Data Sheet

Original release date: October 21, 2016

ASA Filament

Revision date: N/A

Product Description:
Important attributes of this ASA material including being flame rated (UL Yellow card # E677171-248322) and having good weather resistance. Also has *significantly less odor* than other plastics such as ABS. Typical applications for this material include automotive, consumer good and outdoor applications. Automotive specification include: GM GMQ15583P-ASA-T1.

ASA Filament

Physical

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Specific Gravity	1.07	1.07g/cm3	ASTM D792
	0.0387 lb./in3	1070 kg/m3	ISO 1183
Melt Mass Flow Rate (MFR) (220 C/10.0kg)	12g/10 min.	12g/10 min.	ASTM D1238
Melt Volume-Flow Rate	0.610 in3/10 min.	10.0 cm3/10 min.	ISO 1133
Mold Shrinkage – Flow (0.126 in. (3.20 mm))	4.0E-3 to 7.0E-3in/in	0.40 to 0.70%	ASTM D955
Water Absorption (Saturation)	0.36%	0.36%	ISO 62

Mechanical

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Tensile Modulus			
0.126 in (3.20 mm)	302,000 psi	2,080 MPa	ASTM D638
	319,000 psi	2,200MPa	ISO 527-2
Tensile Strength			
Yield 0.126 in. (3.20mm)	6830 psi	47.1 MPa	ASTM D638
Yield	6530 psi	45.0 MPa	ISO 527-2
Tensile Elongation			
Yield 0.126 in (3.20 mm)	>6.0%	>6.0%	ASTM D638
Yield	7.0%	7.0%	ISO 527-2
Break 0.126 in (3.20)	25%	25%	ASTM D638
Nominal strain at break	18%	18%	ISO 527-2
Flexural Modulus (0.126 in (3.20 mm))	320,000 psi	2,210 MPa	ASTM D790
Flexural Strength (0.126 in (3.30 mm))	11,000 psi	75.5 MPa	ASTM D790

Impact

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Charpy Notched Impact Strength			ISO 179/1eA
-22 F (-30 C)	0.809 ft-lb/in2	1.70 kJ/m2	
73 F (23 C)	7.54 ft-lb/in2	15.8 kJ/m2	
Charpy Impact Strength			ISO 179/1eU
-22 F (-30 C)	16.9 ft-lb/in2	35.5 kJ/m2	
73 F (23 C)	No Break	No Break	
Notched Izod Impact			ASTM D256
-22 F (-30 C) 0.126 in (3.20 mm)	0.73 ft-lb/in	39 J/m	
-22 F (-30 C) 0.252 in (6.40 mm)	0.73 ft-lb/in	39 J/m	
73 F (23 C) 0.126 in (3.20 mm)	3.3 ft-lb/in	180 J/m	
73 F (23 C) 0.252 in (6.40 mm)	2.9 ft-lb/in	160 J/m	

Hardness

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Rockwell Hardness (R-Scale)	103	103	ASTM D785

Thermal

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Deflection Temp Under Load			ASTM D648
66 psi (0.45 MPa) unannealed 0.252 in (6.40 mm)	205 F	96.0 C	
264 psi (1.8 MPa) unannealed 0.252 in (6.40 mm)	189 F	87.0 C	
Glass Transition Temp	220 F	110 C	ISO 11357-2
Vicat Softening Temp			
	203 F	95.0 C	ASTM D1525
50 degree C/h, B (50N)	205 F	95.9 C	ISO 306
CLTE			ISO 11359-2
Flow	4.4E-5in/in/F	8.0E-5cm/cm/C	
Transverse	4.4E-5in/in/F	8.0E-5cm/cm/C	

Electrical

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Electrical Strength	1100 N/mil	42 kV/mm	IEC 60243-1
Relative Permittivity (1 MHz)	3.20	3.20	IEC 60250
Dissipation Factor (1 MHz)	0.033	0.033	IEC 60250
Comparative tracking index	600	600	IEC 60112

Flammability

Property	*Nominal Value (English)*	*Nominal Value (SI)*	*Test Method*
Flame Rating			UL 94
0.0630 in (1.60 mm)	HB	HB	
0.126 in (3.20 mm)	HB	HB	
Burning Behavior at thickness h			ISO 1210
0.126 in (3.20 mm) UL	HB	HB	

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