

## Cymat A35620SC 020SS Stabilized Aluminum Foam

Category : Metal , Metal Foam, Mesh, or Honeycomb , Metal Matrix Composite , Nonferrous Metal , Aluminum Alloy , Other Engineering Material , Composite Core Material

### Material Notes:

Description: Cymat A35620SC 020SS stabilized aluminum foam (SAF) is a closed cell aluminum foam formed from A356 aluminum alloy with a density of 0.2 g/cm<sup>3</sup>. The mechanical properties of SAF make it ideal for many varied applications. These properties include: High strength and stiffness to-weight ratio Strain rate insensitive (the speed of loading does not affect the strength) Notch insensitive (holes do not affect material strength) Constant properties over time, temperature and moisture range High mechanical energy absorption in all directions Not flammable or susceptible to environmental degradation Acoustic and thermal insulation properties Electromagnetic insulation properties Recyclable Applications: Energy absorption for vehicle crashworthiness Energy absorption for blast protection Structural stability Core for a casting Information provided by Cymat.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Cymat-A35620SC-020SS-Stabilized-Aluminum-Foam.php](http://www.lookpolymers.com/polymer_Cymat-A35620SC-020SS-Stabilized-Aluminum-Foam.php)

Physical Properties	Metric	English	Comments
Density	0.200 g/cc	0.00723 lb/in <sup>3</sup>	
Cell Length	7.00 mm	0.276 in	Average Cell Size

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	0.700 MPa	102 psi	Through Plane Direction
	0.900 MPa	131 psi	Foaming Direction
	1.50 MPa	218 psi	In Plane Direction
Elongation at Break	0.20 %	0.20 %	Through Plane Direction
	0.20 %	0.20 %	Foaming and In Plane Directions
Tensile Modulus	0.230 GPa	33.4 ksi	Through Plane Direction
	0.450 GPa	65.3 ksi	Foaming Direction
	0.700 GPa	102 ksi	In Plane Direction
Compressive Strength	0.300 MPa	43.5 psi	Lower Yield in the Through Plane Direction
	1.00 MPa	145 psi	Upper Yield in the Through Plane Direction
	1.20 MPa	174 psi	In the Foaming Direction
	1.60 MPa	232 psi	In the In Plane Direction
Compressive Modulus	0.185 GPa	26.8 ksi	Loading, In the Through Plane Direction

Mechanical Properties	Metric	English	Comments
	0.230 GPa	33.4 ksi	Unloading, In the Through Plane Direction
	0.270 GPa	39.2 ksi	Loading, In the In Plane Direction
	0.500 GPa	72.5 ksi	Unloading, In the Foaming Direction
	0.600 GPa	87.0 ksi	Unloading, In the In Plane Direction
Shear Modulus	0.200 GPa	29.0 ksi	
Shear Strength	0.500 MPa	72.5 psi	
Impact	0.11	0.11	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 20% Strain in the Through Plane Direction
	0.15	0.15	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 20% Strain in the Foaming Direction
	0.23	0.23	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 20% Strain in the In Plane Direction
	0.45	0.45	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 50% Strain in the Through Plane Direction
	0.50	0.50	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 50% Strain in the Foaming Direction
	0.60	0.60	kJ/kg, Specific Energy Absorption (compression) at 20% Strain in the Through Plane Direction
	0.67	0.67	MJ/m <sup>3</sup> , Volumetric Energy Absorption (compression) at 50% Strain in the In Plane Direction
	0.80	0.80	kJ/kg, Specific Energy Absorption (compression) at 20% Strain in the Foaming Direction
	1.2	1.2	kJ/kg, Specific Energy Absorption (compression) at 20% Strain in the In Plane Direction
	2.3	2.3	kJ/kg, Specific Energy Absorption (compression) at 50% Strain in the Through Plane Direction
	2.5	2.5	kJ/kg, Specific Energy Absorption (compression) at 50% Strain in the Foaming Direction
	3.3	3.3	kJ/kg, Specific Energy Absorption (compression) at 50% Strain in the In

Mechanical Properties	Metric	English	Plane Direction Comments
Thermal Properties	Metric	English	Comments
Thermal Conductivity	1.48 W/m-K	10.3 BTU-in/hr-ft <sup>2</sup> -°F	
Maximum Service Temperature, Air	300 °C	572 °F	
Minimum Service Temperature, Air	-80.0 °C	-112 °F	

Descriptive Properties	Value	Comments
Densification Strain	80 %	
Shear Failure Strain	0.2 %	

## Contact Songhan Plastic Technology Co.,Ltd.

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