

Amodel® A-1422 LS WH 171

polyphthalamide

Amodel® A-1422 LS is a mineral filled, light stabilized, highly reflective polyphthalamide (PPA) which has been designed specifically to meet the needs of high-brightness (HB) LEDs. It offers high initial whiteness of the assembled LED. Adhesion to the encapsulants is excellent. The thermal properties combined with low shrinkage provide excellent packing around the head frame. The inherent thermal stability of the material means high readability and excellent luminosity retention over the product service life.

This grade also exhibits high deflection temperature, flexural modulus and tensile strength, with excellent creep resistance and low moisture absorption. It can be easily molded using convention injection molding equipment and methods.

- White: A-1422 LS WH 171

General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Mineral, 22% Filler by Weight	
Features	• Chemical Resistant • Fast Molding Cycle • Good Color Stability • High Reflectivity	• High Stiffness • Light Stabilized • Low Moisture Absorption
Uses	• Electrical/Electronic Applications	• LEDs
RoHS Compliance	• Contact Manufacturer	
Appearance	• White	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density / Specific Gravity	1.63		ASTM D792
Molding Shrinkage			ASTM D955
Flow	0.74	%	
Across Flow	0.83	%	
Water Absorption (24 hr)	0.13	%	ASTM D570

Mechanical	Typical Value	Unit	Test method
Tensile Modulus	7970	MPa	ISO 527-2
Tensile Stress (Break)	95.0	MPa	ISO 527-2
Tensile Strain (Break)	1.6	%	ISO 527-2
Flexural Modulus	7360	MPa	ISO 178
Flexural Stress	151	MPa	ISO 178

Impact	Typical Value	Unit	Test method
Notched Izod Impact Strength	2.8	kJ/m ²	ISO 180/1A

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Thermal	Typical Value	Unit	Test method
Heat Deflection Temperature			
0.45 MPa, Annealed	272	°C	ISO 75-2/B
1.8 MPa, Annealed	245	°C	ISO 75-2/A
CLTE			ASTM E831
Flow : 0 to 25°C	2.7E-5	cm/cm/°C	
Flow : 25 to 50°C	3.0E-5	cm/cm/°C	
Flow : 50 to 75°C	3.1E-5	cm/cm/°C	
Flow : 75 to 100°C	3.1E-5	cm/cm/°C	
Flow : 100 to 125°C	3.2E-5	cm/cm/°C	
Flow : 150 to 175°C	1.8E-5	cm/cm/°C	
Transverse : 0 to 25°C	4.4E-5	cm/cm/°C	
Transverse : 25 to 50°C	4.6E-5	cm/cm/°C	
Transverse : 50 to 75°C	5.0E-5	cm/cm/°C	
Transverse : 75 to 100°C	4.9E-5	cm/cm/°C	
Transverse : 100 to 125°C	4.7E-5	cm/cm/°C	
Transverse : 150 to 175°C	8.5E-5	cm/cm/°C	
Additional Information	Typical Value	Unit	Test method
Optical Reflectivity			ASTM E1331
at 460 nm	> 90	%	
at 540 nm	> 90	%	
at 620 nm	> 90	%	

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Injection	Typical Value	Unit
Drying Temperature	120	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.045	%
Rear Temperature	304 to 318	°C
Front Temperature	316 to 329	°C
Processing (Melt) Temp	321 to 343	°C
Mold Temperature	160 to 190	°C

Injection Notes

A general purpose screw is recommended, with minimum back pressure.

Storage:

- Amodel® compounds are shipped in moisture-resistant packages at moisture levels according to specifications. Sealed, undamaged bags should be preferably stored in a dry room at a maximum temperature of 50°C (122°F) and should be protected from possible damage. If only a portion of a package is used, the remaining material should be transferred into a sealable container. It is recommended that Amodel® resins be dried prior to molding following the recommendations found in this datasheet and/or in the Amodel® processing guide.

Notes

Typical properties: these are not to be construed as specifications.



Safety Data Sheets (SDS) are available by emailing us or contacting your sales representative. Always consult the appropriate SDS before using any of our products.

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