

# Amodel® AS-1935 HS

## polyphthalamide

Amodel® AS-1935 HS is a 35% glass reinforced grade of polyphthalamide (PPA) resin developed specifically for improved performance in a 50/50 ethylene glycol and water environment. This material exceeds the performance required by the

automotive industry for polymeric materials exposed to antifreeze at 226°F (108°C), even when tested at 275°F (135°C).

- Black: AS-1935 HS BK 328

### General

Material Status	• Commercial: Active	
Availability	• Africa & Middle East • Asia Pacific • Europe	• Latin America • North America
Filler / Reinforcement	• Glass Fiber, 35% Filler by Weight	
Additive	• Heat Stabilizer	
Features	• Antifreeze Resistant • Chemical Resistant • Creep Resistant • Good Dimensional Stability • Good Glycol Resistance	• Good Stiffness • Heat Stabilized • High Heat Resistance • High Strength
Uses	• Automotive Applications • Automotive Under the Hood • Housings • Industrial Applications • Industrial Parts	• Machine/Mechanical Parts • Metal Replacement • Power/Other Tools • Thick-walled Parts • Valves/Valve Parts
RoHS Compliance	• RoHS Compliant	
Automotive Specifications	• FORD WSS-M4D861-A3	• HYUNDAI MS211-19 AS-1935 HS Color: Black
Appearance	• Black	
Forms	• Pellets	
Processing Method	• Injection Molding	

Physical	Typical Value	Unit	Test method
Density	1.49	g/cm <sup>3</sup>	ISO 1183/A
Molding Shrinkage			ASTM D955
Flow	0.20	%	
Across Flow	0.60	%	
Water Absorption (24 hr, 23°C, 4.00 mm)	0.10	%	ISO 62

# Amodel® AS-1935 HS

## polyphthalamide

Mechanical	Typical Value	Unit	Test method
Tensile Modulus			
--	12500	MPa	ASTM D638
--	12600	MPa	ISO 527-1/1A/1
Tensile Strength			
Break	205	MPa	ASTM D638
Break	210	MPa	ISO 527-2
Tensile Elongation (Break)	2.2	%	ASTM D638 ISO 527-2
Flexural Modulus			
--	11300	MPa	ASTM D790
--	11500	MPa	ISO 178
Flexural Stress			
--	300	MPa	ISO 178
Break	275	MPa	ASTM D790
Impact	Typical Value	Unit	Test method
Charpy Notched Impact Strength			ISO 179/1eA
--	8.0	kJ/m <sup>2</sup>	
-30°C	7.6	kJ/m <sup>2</sup>	
23°C	8.6	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength			ISO 179/1eU
--	66	kJ/m <sup>2</sup>	
-30°C	59	kJ/m <sup>2</sup>	
23°C	68	kJ/m <sup>2</sup>	
Notched Izod Impact			
--	65	J/m	ASTM D256
--	8.5	kJ/m <sup>2</sup>	ISO 180/1A
Thermal	Typical Value	Unit	Test method
Deflection Temperature Under Load			ISO 75-2/Af
1.8 MPa, Unannealed	290	°C	
Melting Temperature	323	°C	ISO 11357-3
CLTE			ISO 11359-2
Flow : -40 to 23°C	1.9E-5	cm/cm/°C	
Flow : 23 to 55°C	1.8E-5	cm/cm/°C	
Flow : 55 to 125°C	1.7E-5	cm/cm/°C	
Transverse : -40 to 23°C	5.8E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.0E-5	cm/cm/°C	
Transverse : 55 to 125°C	6.8E-5	cm/cm/°C	
Heat Deflection Temperature - 0.45 MPa, Unannealed	303	°C	ISO 75-2/A

# Amodel® AS-1935 HS

## polyphthalamide

Electrical	Typical Value	Unit	Test method
Surface Resistivity	5.2E+15	ohms	IEC 60250
Volume Resistivity	> 7.2E+13	ohms·m	IEC 62631-3-1
Dielectric Constant			IEC 60250
100 Hz	3.85		
1 MHz	3.59		
Dissipation Factor			IEC 60250
100 Hz	5.0E-3		
1 MHz	0.013		
Surface Resistance	> 1.0E+14	ohms	IEC 60250
Volume Resistance	> 1.00E+14	ohms	IEC 62631-3-1

Flammability	Typical Value	Unit	Test method
Flame Rating (0.9 mm)	HB		UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.9 mm	700	°C	
1.5 mm	675	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.9 mm	725	°C	
1.5 mm	700	°C	
3.2 mm	700	°C	
Oxygen Index	24	%	ISO 4589-2

Injection	Typical Value	Unit
Drying Temperature	121	°C
Drying Time	4.0	hr
Suggested Max Moisture	0.10	%
Hopper Temperature	79	°C
Rear Temperature	310 to 330	°C
Middle Temperature	315 to 330	°C
Front Temperature	325 to 335	°C
Processing (Melt) Temp	320 to 345	°C
Mold Temperature	150	°C

### Injection Notes

Mold Temperature:

- Higher tool temperatures might be required for thin wall sections

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.

# Amodel® AS-1935 HS

## polyphthalamide

---

## Notes

---

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



---

**[www.syensqo.com](http://www.syensqo.com)**

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.

Neither Syensqo nor any of its affiliates makes any warranty, express or implied, including merchantability or fitness for use, or accepts any liability in connection with this product, related information or its use. Some applications of which Syensqo's products may be proposed to be used are regulated or restricted by applicable laws and regulations or by national or international standards and in some cases by Syensqo's recommendation, including applications of food/feed, water treatment, medical, pharmaceuticals, and personal care. Only products designated as part of the Solviva® family of biomaterials may be considered as candidates for use in implantable medical devices. The user alone must finally determine suitability of any information or products for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. The information and the products are for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right.

All trademarks and registered trademarks are property of the companies that comprise the Syensqo or their respective owners.

© 2024 2023 Syensqo. All rights reserved.