

# Shinko-Lac® ABS VM-1

Acrylonitrile Butadiene Styrene

Mitsubishi Rayon America Inc.

## Message:

Shinko-Lac ABS VM-1 is a flame retardant grade that offers excellent flame retardant characteristics to products along with good thermal stability. Good flow property offers easy processing especially for large and thin products. VM-1 also exhibits excellent plating characteristics. Typical applications of VM-1 include electrical/electronic applications.

General Information			
Additive	Flame retardancy		
Features	Good dimensional stability		
	Rigidity, high		
	Highlight		
	High strength		
	Impact resistance, good		
	Electroplateable		
	Weldable		
	Workability, good		
	Sprayable		
	Machinable		
	Good chemical resistance		
	Thermal stability, good		
	Good toughness		
	Good appearance		
	Non-toxic		
	High hardness		
	Flame retardancy		
UL File Number	E54695		
Appearance	Available colors		
	Natural color		
Forms	Particle		
Processing Method	Extrusion		
	Calendering		
	Vacuum forming		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.17	g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	10	g/10 min	ASTM D1238

Molding Shrinkage - Flow	0.50	%	ASTM D955
Water Absorption (24 hr)	0.22	%	ASTM D570
<b>Hardness</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Rockwell Hardness (R-Scale)	108		ASTM D785
<b>Mechanical</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Modulus (23°C)	2450	MPa	ASTM D638
Tensile Strength (Yield, 23°C)	40.2	MPa	ASTM D638
Flexural Modulus (23°C, 6.35 mm)	2550	MPa	ASTM D790
Flexural Strength (Yield, 23°C, 6.35 mm)	64.7	MPa	ASTM D790
<b>Impact</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Notched Izod Impact (23°C, 6.35 mm)	98	J/m	ASTM D256
<b>Thermal</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load (1.8 MPa, Unannealed, 12.7 mm)	80.0	°C	ASTM D648
<b>Flammability</b>	<b>Nominal Value</b>		<b>Test Method</b>
Flame Rating			UL 94
1.59 mm, NC	V-2		UL 94
3.18 mm, NC	V-2		UL 94
<b>Injection</b>	<b>Nominal Value</b>	<b>Unit</b>	
Drying Temperature	80.0 - 90.0	°C	
Drying Time	2.0 - 4.0	hr	
Suggested Max Moisture	0.10	%	
Rear Temperature	200 - 250	°C	
Middle Temperature	200 - 250	°C	
Front Temperature	200 - 250	°C	
Mold Temperature	40.0 - 80.0	°C	
Injection Pressure	68.6 - 108	MPa	
<b>Injection instructions</b>			

Higher mold temperature provides a product with excellent surface finish and less residual stress.

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