

# Luran 368R

Styrene Acrylonitrile (SAN)

## TECHNICAL DATASHEET

### DESCRIPTION

Luran® 368R is a general purpose grade of SAN with well-balanced properties, suitable for injection molding and extrusion. It features very good transparency, good heat resistance and very good dimensional stability.

### FEATURES

- Excellent transparency
- Good surface appearance
- Good chemical resistance
- Good heat resistance
- Very good dimensional stability

### APPLICATIONS

- Cosmetic packaging
- Water filters
- Seat shell
- Sanitary devices
- Household appliances
- Tooth brush handles

Property, Test Condition	Standard	Unit	Values
<b>Rheological Properties</b>			
Melt Volume Rate 220 °C/10 kg	ISO 1133	cm <sup>3</sup> /10 min	10
<b>Mechanical Properties</b>			
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m <sup>2</sup>	2
Izod Notched Impact Strength, -30 °C	ISO 180/A	kJ/m <sup>2</sup>	2
Charpy Notched Impact Strength, 23° C	ISO 179	kJ/m <sup>2</sup>	2
Charpy Unnotched, 23 °C	ISO 179	kJ/m <sup>2</sup>	18
Charpy Unnotched, -30 °C	ISO 179	kJ/m <sup>2</sup>	18
Tensile Stress at Yield, 23 °C	ISO 527	MPa	75
Tensile Strain at Break, 23 °C	ISO 527	%	3
Tensile Modulus	ISO 527	MPa	3700
Tensile Creep Modulus (1000h)	ISO 899	MPa	2800
Tensile Creep Modulus (1h)	ISO 899	MPa	3500
Flexural Strength, 23 °C	ISO 178	MPa	125
Hardness, Rockwell		M scale	M83
Hardness, Ball Indentation	ISO 2039-1	MPa	165

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<b>Thermal Properties</b>			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	106
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	88
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	100
Coefficient of Linear Thermal Expansion	ISO 11359	10 <sup>-6</sup> /°C	70
Thermal Conductivity	DIN 52612-1	W/(m K)	0.17
<b>Electrical Properties</b>			
Dielectric Constant (100 Hz)	IEC 60250	-	3
Dissipation Factor (100 Hz)	IEC 60250	10 <sup>-4</sup>	40
Dissipation Factor (1 MHz)	IEC 60250	10 <sup>-4</sup>	70
Volume Resistivity	IEC 60093	Ohm*m	1E14
Surface Resistivity	IEC 60093	Ohm	>1E15
<b>Optical Properties</b>			
Refractive Index, Sodium D Line	ISO 489	-	1.569
Light Transmission at 550 nm	ASTM D 1003	%	>89
Haze	ASTM D 1003	%	<1
<b>Other Properties</b>			
Density	ISO 1183	kg/m <sup>3</sup>	1080
Bulk Density (with external lubricant)		kg/m <sup>3</sup>	650
Moisture Absorption, Equilibrium 23 °C/50% RH	ISO 62	%	0.20
<b>Processing</b>			
Linear Mold Shrinkage	ISO 294-4	%	0.3 - 0.7
Melt Temperature Range	ISO 294	°C	220 - 260
Mold Temperature Range	ISO 294	°C	40 - 80
Injection Velocity	ISO 294	mm/s	200
Drying Temperature		°C	80
Drying Time		h	2 - 4

Typical values for uncolored products

## SUPPLY FORM

Luran® is supplied as cylindrical or lenticular pellets. The bulk density is approx. 0.55-0.65 g/cm<sup>3</sup>. Standard pack: 25 kg PE sack, palletized and film-secured. PE bags should not be stored outside. Subject to agreement, other means of packing are possible, e.g. 1000 kg bulk containers (flexible IBCs or intermediate bulk big bag containers); shipping by road tanker can be arranged. Luran® pellets can be stored for prolonged periods in dry areas subject to normal temperature control without any changes in mechanical properties. However, for sensitive colors storage over some years can cause some color change. Under poor storage conditions, Luran absorbs moisture, which can be removed again by drying. Packs stored in cold areas should be brought to ambient temperature before opening, to prevent condensation on the pellets.

## PROCESSING

Luran 368R can either be processed through injection molding or extrusion but any process suitable for thermoplastic resin compositions may also be used.

## PRODUCT SAFETY

Given appropriate processing of the products and suitable ventilation measures in production areas, no adverse effects on the health of process operators have been found. Workplace limits for styrene and acrylonitrile, as given in the national listings applicable, must be adhered to. The values currently applicable in Germany under TRGS 900 (issue of October, 2002) for maximum workplace concentrations are as follows. Styrene: 20 ml/m<sup>3</sup> = 86 mg/m<sup>3</sup>; acrylonitrile: 3 ml/m<sup>3</sup> = 7 mg/m<sup>3</sup>. Appendix I of Directive 67/548/EWG and TRGS 905 (issue of October, 2002) classify acrylonitrile in carcinogenic category II (substances which should be regarded as carcinogenic in humans). Experience has shown that during appropriate processing of Luran with suitable ventilation the values obtained are well below the limits mentioned above. TRGS 402 (Germany) can be used for determining and assessing the concentrations of hazardous substances in the air within working areas. Inhalation of gaseous degradation products, such as those which may arise on severe overheating of the material or during pumped evacuation, must be avoided. Further information can be found in our Luran safety data sheets.

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