NAS 30

Styrene Methyl Methacrylate (SMMA)

INEOS STYROLUTION

Technical Datasheet

DESCRIPTION

NAS® 30 is a styrene acrylic copolymer that can be used in a variety of applications demanding a strong, stiff water-clear plastic resin with excellent thermal stability.

FEATURES

- Sparkling clarity
- Low density
- Ease of processing
- Gamma & ETO sterilizable
- Meets USP XXIII specifications for Class VI plastics

APPLICATIONS

- Cosmetic jars and lids
- Reusable drinkware
- Medical devices
- Toys
- Office accessories

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Flow Rate, 200 °C/5 kg	ASTM D 1238	g/10 min	2.2
Mechanical Properties			
Izod Notched Impact Strength, 23°C (73°F)	ASTM D 256	ft-lb/in	0.4
Tensile Stress at Yield, 23° C	ASTM D 638	psi	8800
Tensile Modulus	ASTM D 638	psi x 10^3	470
Elongation, Failure	ASTM D 638	%	2.3
Flexural Strength	ASTM D 790	psi	14600
Flexural Modulus	ASTM D 790	psi x 10^3	460
Hardness, Rockwell	ASTM D 785	M scale	75
Thermal Properties			
Vicat Softening Temperature, B/1 (120°C/h, 10N)	ASTM D 1525	°F	220
Optical Properties			
Refractive Index, Sodium D Line	ASTM D 542	-	1.56
Light Transmission at 550 nm	ASTM D 1003	%	91.4
Haze	ASTM D 1003	%	0.3
Other Properties			
Density	ASTM D 792	-	1.09

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Property, Test Condition	Standard	Unit	Values
Water Absorption, Saturated at 23°C	ASTM D 570	%	0.15
Processing			
Linear Mold Shrinkage	ASTM D 955	in/in	0.002 to 0.006
Melt Temperature Range		°F	410 - 470
Mold Temperature Range		°F	90 - 140
Rear Temperature Range		°F	360 - 420
Middle Temperature Range		°F	390 - 450
Front Temperature Range		°F	410 - 470
Injection Velocity		in/s	Slow to Moderate
Drying Temperature		°F	180
Drying Time		h	2
Max Service Temperature		°F	500

Typical values for uncolored products

SUPPLY FORM

Styrolution NAS resins are available in bulk , 25kg bags or octabin cartons.

PROCESSING

NAS is a low moisture absorption copolymer and in many instances processes readily without pre-drying. There are combinations of conditions that require the product to be dried, such as high humidity and heavy section molding. Two hours at 82 °C (180 °F) is adequate for most applications. Dehumidifying type driers are recommended. To obtain maximum clarity and gloss from this product, it is necessary to have a highly polished mold. Design of gates, runners and sprues can be patterned after standard practice for high-heat polystyrene. All mold surfaces must be temperature controlled at 54 °C (130 °F) for optimum clarity and surface gloss. For optimum clarity, machine cylinders, barrels, screws, valves, etc. should be thoroughly cleaned before processing. Contamination by other materials will cause streaking or haze.

PRODUCT SAFETY

During processing of NAS small quantities of styrene monomer may be released into the atmosphere. At styrene vapor concentrations below 20ppm no negative effects on health are expected. In our experience, the concentration of styrene does not exceed 1 ppm in well ventilated workplaces - that is were five to eight air changes per hour are made.

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