

Styrolution Transparent Specialties Line Card

Product Families		NAS [®]			Lustran [®]			
Description		Styrene Acrylic Copolymer (SMMA)			Styrene Acrylonitrile (SAN)			
Property	Units	21	30	90	29	31	51	Sparkle
Specific Gravity	ASTM D 792	1.08	1.09	1.07	1.07	1.07	1.07	1.07
Melt Flow Rate 200°C/5 kg	(g/10 min)	1.9	2.2	1.5	n/a	n/a	n/a	n/a
Melt Flow Rate 220°C/10kg	(g/10 min)	24	30	16	14	19	16	30
Heat Distortion (DTUL)	^o F @ 264 psi	200	200	176	205	205	205	200
Vicat Softening Temp (A120)	^o F	222	220	207	232	230	230	226
Notched Izod	ft-lbs/in	0.40	0.40	0.40	0.40	0.40	0.45	0.40
Tensile Strength @ Yield	psi	8,400	8,800	8,100	10,800	10,500	11,000	9,000
Tensile Elongation	%	2.1	2.3	2.1	2.1	2.2	1.8	2.2
Tensile Modulus	psi	470,000	470,000	490,000	480,000	475,000	475,000	470,000
Flexural Modulus at Break	psi	450,000	460,000	490,000	500,000	520,000	500,000	500,000
Flexural Modulus at Yield	psi				18,900	16,700	19,000	14,000
Rockwell Hardness	M Scale	70	75	65	83	83	83	75
Light Transmission	%	91	91	92	88	88	88	90
Haze	%	0.3	0.3	0.3	0.8	0.7	2.0	0.7

Resin Number	Product Description	Typical Applications
NAS 21	General purpose, good SBC compatibility	Housewares, drinkware, SBC blends
NAS 30	Highest clarity, rigid	Heavy walled parts, packaging jars and containers, lenses and optical components
NAS 36	Sparkling clarity, indoor UV light stability *	POP Displays , office accessories, appliances (not approved for food contact or medical)*
NAS 90	High molecular weight for tougher SBC blends	SBC blends, housewares
Sparkle	Low AN, high flow, chemical resistance, ease of processing.	Housewares, cosmetic packaging and personal care devices
Lustran 29	Highest impact, High chemical resistance, ease of processing	Tumblers, water pitchers, blender jars, water filter housings, battery cases
Lustran 31	Injection Molding grade with good clarity, heat and chemical resistance	Tumblers, mugs, tableware, dinnerware, blender jars, medical and personal care
Lustran 51	Best grade for chemical resistance and toughness	Industrial battery cases, disposable lighters (not approved for food contact or medical)*

NAS	NAS from Styrolution is the clear choice for applications that demand a strong, stiff, water-clear plastic. Sparkling clarity in combination with stiffness and strength make this an ideal resin for a variety of Houseware and product packaging applications.
Lustran	Lustran is the Styrolution brand for Styrene-Acrylonitrile-Copolymer (SAN). Characteristics of Lustran SAN are outstanding transparency, easy coloring, high gloss, high rigidity, high heat resistance and good chemical resistance. It has good processability and is lower density compared to PMMA. Medical service package (DMF, all Pharamcopea certifications and cytotoxicity tests) available where relevant

All INEOS Styrolution Transparent Specialty products are approved for food contact and medical applications except where noted*

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Product Families		Zylar®			Clearblend®			Terlux® (Imported)		
Description		Impact Modified SMMA			Impact Modified SMMA Blend			Transparent ABS		
Property	Units	650	670	960	145	155	165	2802	2812	2822
Specific Gravity	ASTM D 792	1.05	1.05	1.05	1.04	1.05	1.04	1.08	1.08	1.08
Melt Flow Rate 200°C/5 kg	(g/10 min)	4	6	6	3.5	6	5	n/a	n/a	n/a
Heat Distortion (DTUL)	°F @ 264 psi	197	189	187	198	189	172	205	188	205
Vicat Softening Temp.	°F	210	208	201	208	208	201	206	201	206
Notched Izod	ft-lbs/in	3	2.0	11	1	2.0	7	1.4	1.2	1.4
Tensile Strength @ Yield	psi	3,800	4,000	3,400	4,000	4,000	3,000	4,600	4,200	4,600
Tensile Elongation	%	40	42	70	40	40	50	13	16	13
Tensile Modulus	psi	310,000	265,000	250,000	325,000	270,000	220,000	272,000	262,000	272,000
Flexural Modulus	psi	280,000	265,000	250,000	330,000	270,000	225,000	277,000	268,000	277,000
Rockwell Hardness	Scale as Noted	70R	70R	62 R	80 R	70R	70 R			
Light Transmission	%	90	91	91	90	91	90	92	92	92
Haze	%	1.5	2	2	1.5	2.5	1.7	2.5	2.5	

Resin Number	Product Description	Typical Applications
Zylar 650	High clarity, high Impact	Floorcare parts, water and detergent tanks, medical devices, packaging
Zylar 670	New grade - high clarity, high impact grade	Packaging, medical packaging
Zylar 960	Clear, super high impact	Industrial covers and housings, floorcare parts, medical devices
Clearblend 145	Clear, impact modified dry blend	Rigid packaging, toys, office products, housings and covers
Clearblend 155	New, clear, high impact dry blend	Packaging
Clearblend 165	Clear, very high impact dry blend	Housewares, dispenser housings, office products, toys
Terlux 2802	Transparency, good impact and chemical resistance	Cosmetic packaging, homeware, housings, toys, sports and leisure
Terlux HD 2812	Medical grade with high impact and good chemical resistance	Medical devices with HD service package
Terlux HD 2822	Medical grade with high impact and excellent transparency	Medical devices with HD service package

Zylar	Zylar grades are impact modified styrene acrylic copolymers that offer low density, low moisture retention, and processing advantages over alternative resins. Zylar 960 sets the bar for toughness with Notched Izod impact performance in the range of some grades of polycarbonate. All Zylar grades meet USP XXIII specifications for Class VI plastics for safe use in medical applications.
Clearblend	Clearblend SMMA-SBC blends from Styrolution provide good clarity and practical toughness in a cost effective dry blend resin. They also provide ease of processing, low density and low moisture retention.
Terlux	Terlux is the Styrolution brand for Methylmethacrylate – Acrylonitrile – Butadiene - Styrene polymer. It is a transparent ABS, with good gloss, brilliance, transparency and high chemical resistance. It also has a good stiffness and high impact strength. It is low density with easy processability. The medical version comes with a service package (DMF, all Pharamcopea certifications available, cytotoxicity tests)

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Product Families		Styrolux®				Styroxflex®	K RESIN®		
Description		Styrene Butadiene Block Copolymer (SBC)				Thermoplastic elastomer S-TPE	Styrene Butadiene Copolymer (SBC)		
Property	Units	684D	3G55	3G46	656C	2G66	KR01	KR03	KR05
Specific Gravity	ASTM	1.01	1.01	1.02	1.02	1.02	1.01	1.01	1.01
Melt Flow Rate 200°C/5 kg	(g/10 min)	11	15	11	15	11	8	7.5	7.5
Heat Distortion (DTUL)	°F @ 264 psi	158	114	140	152		148	144	144
Vicat Softening Temp.	°F	186	161	190	194	118	194	185	185
Tensile Strength @ Yield	psi	3770	2320	3700	4060	450	4845	3800	3800
Tensile Elongation	%	250	300	220	40	600	30	230	230
Flexural Modulus	psi	170,000	110,000	193,000	217,000	12,000	260,874	260,350	260,350
Rockwell Hardness	Scale as Noted	68 D	59 D	75 D	74 D	36 D	69	63	63
Light Transmission	%	90	90	91	90	93	93	92	92
Haze	%	4	6	2	2.4		n/a	n/a	n/a

Resin Number	Description	Typical Applications
Styrolux 684D	Sheet extrusion in blends with GPPS for thermoforming, blow molding, blown film and IM	Medical devices, packaging, bottle, film
Styrolux 3G55	Sheet extrusion in blends with GPPS for thermoforming, highly efficient with GPPS blends	Film, food packaging
Styrolux 3G46	Cast and film extrusion, outstanding transparency	Film, bottles, toys, displays, household products and compounding of SMMA
Styrolux 656C	Clear and semi rigid, Injection Molding applications	Medical devices, food packaging
Styroxflex 2G66	High flow, high transparency, high impact	Impact modification, film, compounding, food packaging
KR01	Injection Molding, Clarity, Stiffness, warpage resistant, Hinge properties	Hinged applications, Medical devices, POP displays
KR03	Injection Molding, Clarity, Surface gloss, Toughness, Stiffness	Hinged applications, Medical devices, POP displays
KR05	Sheet and Blow Molding, clarity, surface gloss, good formability, stiffness and toughness	Bottles, Blister Packaging, Portion packaging, Molded containers

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