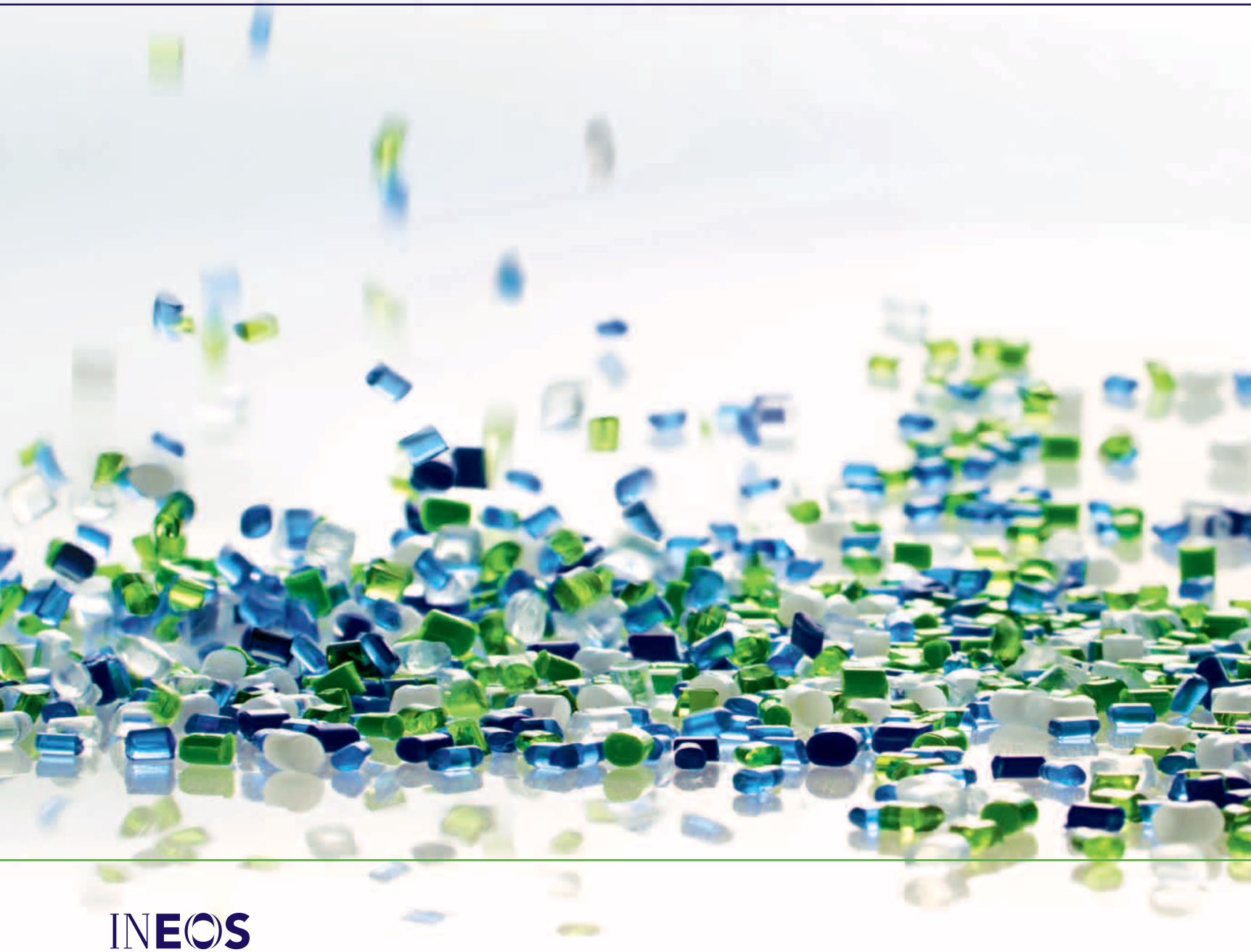
STYRENIC SPECIALTIES

Versatility. Performance. Endless Possibilities.



INEOS STYROLUTION

Driving Success. Together.

BEAUTIFUL PERFORMERS

INEOS Styrolution offers the world's largest styrenic specialties portfolio, reliable global supply and the commitment to collaborate with our customers to even create new grades with the exact properties required. Innovative, high-performance styrenic specialties from INEOS Styrolution offer clear material advantages, from greater product differentiation to improved processing efficiency.

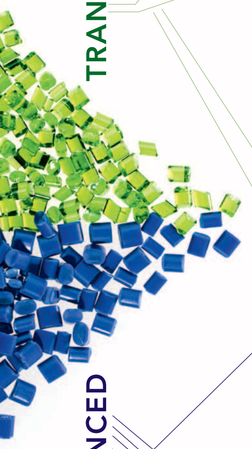
TRANSPARENT

Aesthetics matter. Transparent styrenic specialties from INEOS Styrolution are known for their outstanding surface quality and water-clear transparency, enabling the creation of beautiful products that are pleasing to the senses, durable and safe to use. Tough and brilliant, our transparent specialties help improve your bottom line through optimal processibility and outstanding quality.

ENHANCED

Good design sells. Enhanced styrenic specialties from INEOS Styrolution are increasingly used by designers and manufacturers to unlock innovative potential. The superior surface quality, proven performance and high versatility makes creating attractive products easier. Add value to your brand with products that retain their superior appearance and performance while also delivering cost, time and energy savings.

Explore the possibilities of STYRENIC SPECIALTIES



TRANSPARENT

ENHANCED

						AUTOMOTIVE	ELECTRONICS	HOUSEHOLD	CONSTRUCTION	HEALTHCARE	TOYS, SPORTS & LEISURE	PACKAGING	
			TRANSPARENT STYRENIC SPECIALTIES	06 – 07									
STIFFNESS	CHEMICAL RESISTANCE BALANCED PROPERTY	**ABSOLAN®**	**ABSOLAN** IS INEOS STYROLUTION'S STYRENE ACRYLONITRILE COPOLYMER (SAN) SPECIALLY FOR THE INDIA MARKET	08 – 09	TRANSPARENT	–	●	●	●	–	●	●	ABSOLAN®
STIFFNESS	CHEMICAL RESISTANCE BALANCED PROFILE	**LURAN®** **LURAN HH**	**LURAN** IS INEOS STYROLUTION'S STYRENE ACRYLONITRILE COPOLYMER (SAN) **LURAN HH** IS INEOS STYROLUTION'S METHYLSTYRENE ACRYLONITRILE COPOLYMER (AMSAN)	10 – 11		●	●	●	●	●	●	●	LURAN®
STIFFNESS	CLARITY COLOR CONSISTENCY PROCESSABILITY	**NAS®**	**NAS** IS INEOS STYROLUTION'S TRANSPARENT STYRENE METHYL METHACRYLATE COPOLYMER (SMMA)	12 – 13		●	●	●	●	●	●	●	NAS®
IMPACT RESISTANCE	HEAT RESISTANCE CHEMICAL RESISTANCE	**TERLUX®**	**TERLUX** IS INEOS STYROLUTION'S METHYL METHACRYLATE ACRYLONITRILE BUTADIENE STYRENE (MABS) COPOLYMER	14 – 15		–	●	●	–	●	●	●	TERLUX®
IMPACT RESISTANCE	PROCESSABILITY SURFACE QUALITY AND BRILLIANCE	**ZYLAR®**	**ZYLAR** IS INEOS STYROLUTION'S METHYL METHACRYLATE BUTADIENE STYRENE (MBS) POLYMER	16 – 17		–	–	●	●	●	●	●	ZYLAR®
IMPACT RESISTANCE	PROCESSABILITY	**CLEARBLEND®** AMERICAS AND ASIA ONLY	**CLEARBLEND** IS INEOS STYROLUTION'S METHYL METHACRYLATE BUTADIENE STYRENE (MBS) COPOLYMER BLEND	18 – 19		–	–	●	●	●	●	●	CLEAR-BLEND®
IMPACT RESISTANCE	CLARITY HIGH TOUGHNESS	**STYROLUX®**	**STYROLUX** IS INEOS STYROLUTION'S THERMOPLASTIC MATERIAL, CONSISTING OF STYRENE BUTADIENE BLOCK COPOLYMERS (SBC)	20 – 21		–	–	●	●	●	●	●	STYROLUX®
IMPACT RESISTANCE	TRANSPARENCY IMPACT STRENGTH	**K-RESIN®**	**K-RESIN** IS INEOS STYROLUTION'S THERMOPLASTIC MATERIAL, CONSISTING OF STYRENE BUTADIENE BLOCK COPOLYMERS (SBC)	22 – 23		–	–	●	●	●	●	●	K-RESIN®
TPE	TOUGHNESS ELASTICITY CLARITY	**STYROFLEX®**	**STYROFLEX** IS INEOS STYROLUTION'S THERMOPLASTIC ELASTOMER, A STYRENE BUTADIENE BLOCK COPOLYMER WITH TAILOR-MADE ARCHITECTURE	24 – 25		–	–	●	●	●	●	●	STYROFLEX®
			ENHANCED STYRENIC SPECIALTIES	26 – 27									
IMPACT RESISTANCE (ABS)	HEAT RESISTANCE MECHANICAL STRENGTH	**ABSOLAC® / NOVODUR®**	**ABSOLAC/NOVODUR** IS INEOS STYROLUTION'S SPECIALTY ACRYLONITRILE BUTADIENE STYRENE (ABS) COPLOYMER SPECIALLY FOR THE INDIA MARKET	28 – 29	ENHANCED	●	●	●	●	–	●	–	ABSOLAC®
IMPACT RESISTANCE (ABS)	IMPACT STRENGTH PAINTING & PLATING MEDICAL GRADE	**NOVODUR®**	**NOVODUR** IS INEOS STYROLUTION'S SPECIALTY ACRYLONITRILE BUTADIENE STYRENE (ABS) COPOLYMER	30 – 31		●	●	●	●	●	●	●	NOVODUR®
IMPACT RESISTANCE (ABS)	HEAT RESISTANCE MECHANICAL STRENGTH	**NOVODUR® HIGH HEAT**	**NOVODUR HIGH HEAT** IS INEOS STYROLUTION'S ENHANCED HEAT RESISTANCE SPECIALTY ACRYLONITRILE BUTADIENE STYRENE (ABS) COPOLYMER	32 – 33		●	●	●	●	–	●	–	NOVODUR® HIGH HEAT
UV RESISTANCE (ASA)	HIGHEST UV PERFORMANCE HIGH/LOW GLOSS GOOD IMPACT STRENGTH HIGH HEAT RESISTANCE	**LURAN® S**	**LURAN S** IS INEOS STYROLUTION'S ACRYLONITRILE STYRENE ACRYLATE COPOLYMER (ASA)	34 – 35		●	●	●	●	–	●	–	LURAN® S
UV RESISTANCE (ASA)	PC ENHANCEMENT HIGHEST HEAT RESISTANCE HIGH IMPACT FR PRODUCT	**LURAN® SC**	**LURAN SC** IS INEOS STYROLUTION'S BLEND OF ACRYLONITRILE STYRENE ACRYLATE COPOLYMER AND POLYCARBONATE (ASA /PC)	36 – 37		●	●	●	●	–	●	–	LURAN® SC
PHYSICAL AND MECHANICAL STRENGTH	HIGH IMPACT DIMENSIONAL STABILITY MECHANICAL STRENGTH LOW GLOSS	**TERBLEND® N/S**	**TERBLEND N** IS INEOS STYROLUTION'S ACRYLONITRILE BUTADIENE STYRENE COPOLYMER BLEND WITH POLYAMIDE (ABS/PA). **TERBLEND S** IS INEOS STYROLUTION'S ACRYLONITRILE STYRENE ACRYLATE COPOLYMER BLEND WITH POLYAMIDE (ASA/PA)	38 – 39		●	●	●	●	–	●	–	TERBLEND® N/S

TRANSPARENT SPECIALTIES

EXPLORE THE POSSIBILITIES

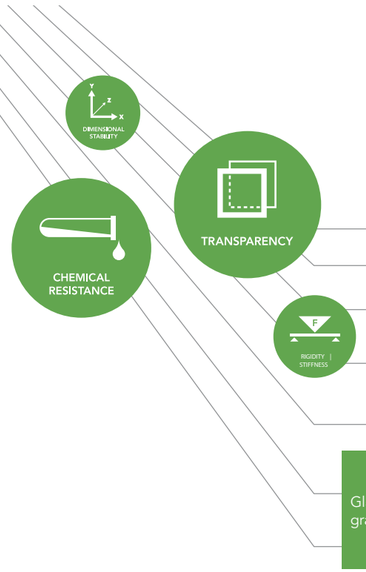
WHAT IS **YOUR** TRANSPARENT SPECIALTIES APPLICATION?

ABSOLAN®

Experience ABSOLAN's high stiffness and well-balanced property profile.

INEOS Styrolution's styrene acrylonitrile copolymer (SAN) portfolio available for the local market in India. Absolan grades feature a very well-balanced property profile ranging from excellent transparency and good chemical resistance to high stiffness, and good dimensional stability.

KEY PROPERTIES



		PROPERTIES		PROCESSING				MECHANICAL							THERMAL			
	Polymer abbreviation	Density	Method: Injection Molding (M), Extrusion (E), Blow Molding (B)	Melt volume rate MVR (220°C/10kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus (50mm/min)	Stress at yield / break (50mm/min)	Rockwell hardness (23°C)	Flexural strength (5mm/min)	Flexural modulus (5mm/min)	IZOD notched impact strength (23°C at 1/4" thickness)"	IZOD notched impact strength (23°C at 1/8" thickness)"	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, Cond.B-50N	Coefficient of linear thermal expansion (23-55°C)
TEST METHOD		D 792		ISO 1133			D 955	D 638	D 638	D 785	D 790	D 790	D256	D256	D 647	D 647	D 1525	D 696
UNIT				gms/ 10min	°C	°C	%	kg/cm²	kg/cm²	M-scale	kg/cm²	kg/cm²	kg.cm/ cm	kg.cm/ cm	°C	°C	°C	10E-4/°C
Heat and chemical resistance	**ABSOLAN 2150**	SAN	1.07	M	>45	220-260	60-80	–	47000	700	86	1150	42000	1	16	97	100	104	0.7-1
Good flow	**ABSOLAN 2500**	SAN	1.07	M	>11	220-260	60-80	–	45400	810	88	1450	40100	1.29	23.5	100	103	107	–
	ABSOLAN 2300 Clear	SAN	1.07	M	>30	220-260	60-80	–	46000	700	86	1150	41500	1.5	18	99	101	105	–
	ABSOLAN 2300 W Clear	SAN	1.07	M	>30	220-260	60-80	–	45000	700	80	1150	40000	1.5	16	98	100	102	–
Glass filled grades	**ABSOLAN 23GF 20%**	SAN	1.2	M	8	220-270	60-80	0.1-0.3	75000	>800	–	>1200	66500	4	–	104	106	109	–
High rigidity	**ABSOLAN 25GF 30%**	SAN	1.3	M	7	220-270	60-80	0.1-0.3	>120000	>950	–	>1500	90000	3.0-6	–	>101	105	>109	–

KEY APPLICATIONS

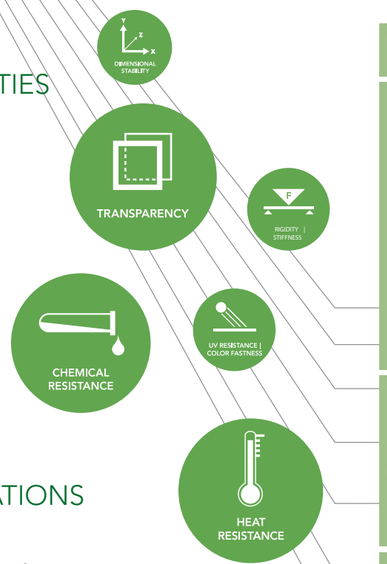
- Industrial goods
- Stationery
- Electrical appliances
- Household applications
- Cosmetics jars

LURAN®
LURAN HH

INEOS Styrolution's styrene acrylonitrile copolymers (SAN) offer excellent surface quality and many other outstanding properties with a broad selection of grades designed for injection molding and extrusion applications.

Discover LURAN's best-in-class chemical resistance and color consistency.

KEY PROPERTIES



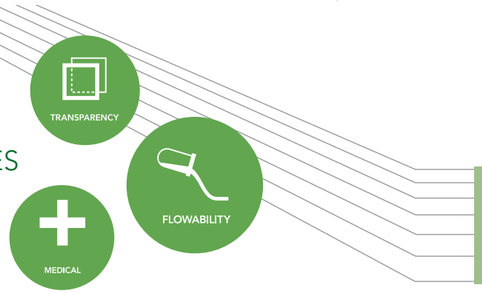
KEY APPLICATIONS

- Cosmetic jars
- Industrial batteries
- Shower trays
- Mixers and blenders
- Interior automotive applications

						PROPERTIES			PROCESSING				MECHANICAL						THERMAL		
						Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C/ 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (220 °C / 10kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at break	Strain at break	Flexural strength	Charpy notched impact strength (23 °C)	Charpy unnotched impact strength (23 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50
TEST METHOD							ISO 1183	ISO 62		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1eA	ISO 179/1eA	ISO 75-1/-2	ISO 75-1/-2	ISO 306
UNIT										cm^3/ 10 min	°C	°C	%	MPa	MPa	%	MPa	kJ/m^2	kJ/m^2	°C	°C	°C
Food contact	General purpose	Easy flow	**LURAN SAN C**	SAN	1080	–	M	23	200-240	60-80	0.3-0.4	3700	68	3.2	111	–	–	101	103	104
Crystal clear available	General purpose		**LURAN 358N**	SAN	1080	0.2	M	22	220-260	40-80	0.3-0.7	3700	72	3	120	2	16	86	99	106
			LURAN 368R	SAN	1080	0.2	M, E	10	220-260	40-80	0.3-0.7	3700	75	3	125	2	18	88	100	106
	Excellent transparency, light natural color	Ultra high flow	**LURAN 338L**	SAN	1080	0.2	M	40	220-260	40-80	0.3-0.7	3500	–	2	–	1.5	14	86	98	105
			LURAN SAN W	SAN	1070	–	M	60	200-240	60-80	0.3-0.4	3600	–	–	115	–	–	90	95	101
			LURAN 348Q	SAN	1080	0.2	M	19	220-260	40-80	0.3-0.7	3600	70	2.5	115	1.5	14	86	99	105
Chemical resistance		Easy flow	**LURAN 378P**	SAN	1080	0.3	M	20	220-260	40-80	0.3-0.7	3800	75	3.5	135	2	19	89	101	107
			LURAN SAN 51	SAN	1080	–	M	15	200-240	60-80	0.3-0.4	3800	–	3.8	125	–	–	102	103	106
		Highest impact strength	**LURAN 388S**	SAN	1080	0.3	M, E	7	220-260	40-80	0.3-0.7	3800	79	4	140	2	21	90	102	107
Enhanced dimensional stability and heat resistance	Glass fiber reinforced	Enhanced rigidity	**LURAN 378P G7**	SAN GF	1360	0.25	M, E	4	220-260	–	0.1	–	110	2	150	4	17	104	108	111
		Ultra high rigidity	**LURAN 378P G10**	SAN GF	1500	0.2	M, E	2.5	220-260	–	0.1	–	–	0.8	–	2.5	11	104	108	111
			LURAN HH-120	AMSAN	1080	0.3	M, E	7	220-270	60	0.3-0.7	3900	79	3	135	2	20	104	110	120
	High gloss	UV resistance	**LURAN HH-120 BK37133**	AMSAN	1080	0.3	M	7	220-270	60	0.3-0.7	3900	79	3	135	2	20	104	110	120
		Increased UV resistance	**LURAN HH-120 SPF 50**	AMSAN	1080	0.3	M	11.5	220-270	60	0.3-0.7	3900	79	3	135	2	20	98	107	114

NAS®

INEOS Styrolution's best-in-class transparent styrene acrylic copolymers are a premium choice for applications demanding a strong, stiff, water-clear plastic. NAS is hydrophobic and provides excellent thermal stability, very good alcohol resistance, and virtually no molded-in stress. NAS is compliant with FDA and EU food regulations as well as medical compliances USP Cl. VI & ISO 10993.



KEY PROPERTIES

			PROPERTIES			PROCESSING				MECHANICAL						THERMAL		
		Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (220 °C / 10kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at break	Strain at break	Flexural strength	Charpy notched impact strength (23 °C)	Charpy unnotched impact strength (23 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50
	TEST METHOD		ISO 1183	ISO 62		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1eA	ISO 179/1eA	ISO 75-1/-2	ISO 75-1/-2	ISO 306
	UNIT		kg/m³	%		cm³/ 10 min	°C	°C	%	MPa	MPa	%	MPa	kJ/m²	kJ/m²	°C	°C	°C
General purpose	Water clear clarity	**NAS 21**	SMMA	1080	0.1	M	24	200-240	30-60	0.2-0.6	3300	60	2.5	100	1.5	12	80	90	98
	Enhanced flow and clarity	**NAS 30**	SMMA	1090	0.1	M	30	200-240	30-60	0.2-0.6	3300	60	2.5	100	1.5	12	80	90	98
	Increased toughness	**NAS 90**	SMMA	1070	0.1	M	16	200-240	30-60	0.2-0.6	3100	60	2.3	100	1.5	13	75	83	90

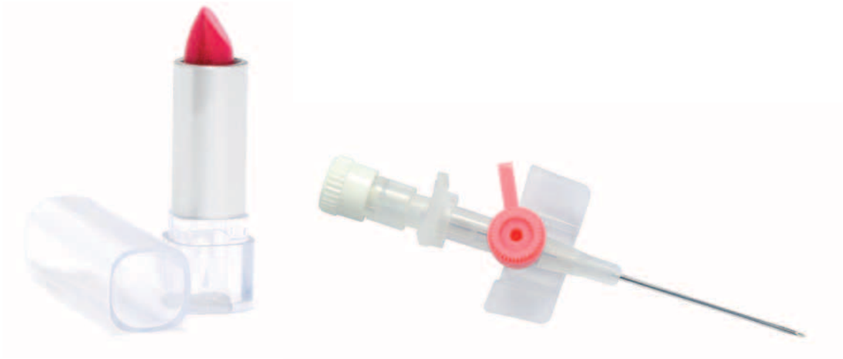
KEY APPLICATIONS

- Water filters
- Food boxes
- Point-of-purchase displays
- Diabetes devices and packaging, e.g. injection pens
- Pens (barrel)

Did you know NAS combines high stiffness with superior processability?

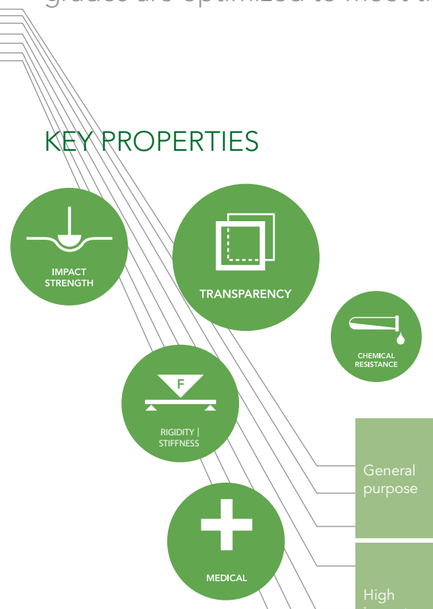
TERLUX®

INEOS Styrolution's transparent ABS polymers can be used to create particularly brilliant visual effects such as very deep colors, pearly or sparkle effects and are also easy to print on. This combination of properties and ease of processing make Terlux an optimal choice for upscale and design-oriented applications. The HD grades are optimized to meet the specific requirements of medical applications.



Try TERLUX for its impact strength and outstanding chemical resistance.

KEY PROPERTIES



KEY APPLICATIONS

- Cosmetic packaging
- Infusion systems, e.g. connectors, stopcocks
- Homeware
- Housings
- Toys, sports and leisure

			PROPERTIES				PROCESSING					MECHANICAL							THERMAL				OPTICAL		
			Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C/ 50% r.h.		Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (220 °C / 10kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at yield	Strain at break	Charpy notched impact strength (23 °C)	Charpy unnotched impact strength (23 °C)	Hardness, ball indentation	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50	Light transmission (4 mm thickness)	Haze (4 mm thickness)	Refractive Index (nD)
	TEST METHOD		ISO 1183	ISO 62			ISO 1133			ISO 294-4		ISO 527	ISO 527	ISO 527	ISO 179/1eA	ISO 179/1eA	ISO 2039-1	ISO 75-1/-2	ISO 75-1/-2	ISO 306	ASTM D 1003	ASTM D 1003	ISO 489
	UNIT		kg/m³	%			cm³/ 10 min	°C	°C	%		MPa	MPa	%	kJ/m²	kJ/m²	MPa	°C	°C	°C	%	%	–
General purpose	**TERLUX 2802**	MABS	1080	0.35		M, E, B	2	230-260	50-80	0.4-0.7		2000	48	12	5	120	70	90	94	93	89	2	1.54
Easy flow	**TERLUX 2812**	MABS	1080	0.35		M, E, B	8	230-260	50-80	0.4-0.7		1900	42	20	5	110	75	87	93	87	89	2	1.54
High impact	**TERLUX 2802 Q434**	MABS	1080	0.35		M, E, B	2	230-260	50-80	0.4-0.7		2000	48	20	10	150	70	90	94	93	87	3	1.54
Easy flow	**TERLUX 2812 Q434**	MABS	1080	0.35		M, E, B	8	230-260	50-80	0.4-0.7		1900	42	22	8	120	75	87	93	87	87	3	1.54
Health-care*	**TERLUX HD 2802 / HD 2822**	MABS	1080	0.35		M, E, B	2	230-260	50-80	0.4-0.7		2000	48	12	5	120	70	90	94	93	89	<3	2
Easy flow	**TERLUX HD 2812**	MABS	1080	0.35		M, E, B	8	230-260	50-80	0.4-0.7		1900	42	20	5	110	75	87	93	87	89	<3	2

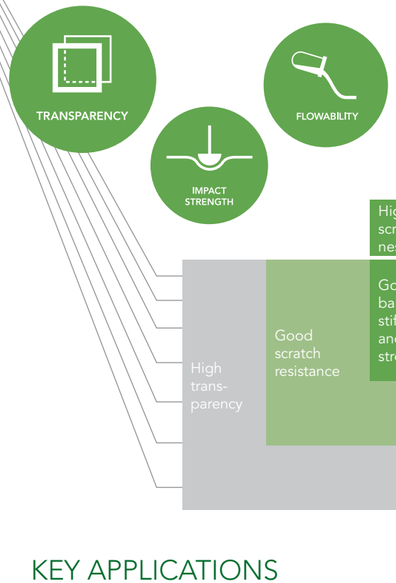
*For healthcare applications, INEOS Styrolution offers a Full-Service HD package providing reliable formulations, global regulatory approval support, compatibility testing to specific chemicals, technical support (processing, design, calculation), enhanced quality control processes (cleaning, sampling frequency and documentation) and high performance property profiles.

ZYLAR®

INEOS Styrolution's clear impact modified styrene acrylic copolymers offer practical toughness, excellent clarity, and superior processing over competitive materials such as polycarbonate and copolyesters. In spiral flow tests, ZYLAR resins flow the same distance as polycarbonate at significantly lower temperatures. This leads to higher productivity, lower energy consumption and less molded-in stress. Zylar meets USP class VI and has good resistance to many detergents and cleaning solutions.

ZYLAR is the clear choice for excellent flow in injection molding.

KEY PROPERTIES



		PROPERTIES				PROCESSING					MECHANICAL						THERMAL			OPTICAL		
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	TEST METHOD		ISO 1183	ISO 62			ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 179/1eA	ISO 179/1eA	ISO 2039-1	ISO 75-1/-2	ISO 75-1/-2	ISO 306	ASTM D 1003	ASTM D 1003	ISO 489
	UNIT		kg/m³	%			cm³/ 10 min	°C	°C	%	MPa	MPa	%	kJ/m²	kJ/m²	MPa	°C	°C	°C	%	%	-
Highest transparency, highest scratch resistance, highest stiff-ness, moderate impact strength	**ZYLAR 245**	MBS	1050	0.05		M	4.5	190-230	10-60	0.2-0.6	2200	37	15	2	20	62	75	85	78	90	1	1.57
Good balance of stiffness and impact strength	**ZYLAR 550**	MBS	1050	0.05		M	5	191-230	10-60	0.2-0.6	2100	26	30	4	60	51	70	81	73	90	1	1.57
Chemical resistance	**ZYLAR 650**	MBS	1050	0.05		M	4	192-230	10-60	0.2-0.6	2100	28	32	5	n.b.	47	72	83	75	90	2	1.57
High impact strength	**ZYLAR 670**	MBS	1050	0.05		M	5	193-230	10-60	0.2-0.6	2000	26	30	3	n.b.	50	72	83	76	90	2	1.57
	ZYLAR 765	MBS	1050	0.05		M	5	194-230	10-60	0.2-0.6	1700	25	41	16	n.b.	33	70	81	65	90	2	1.56
Highest impact strength, good transparency	**ZYLAR 960**	MBS	1050	0.05		M	6	195-230	10-60	0.2-0.6	1600	24	48	25	n.b.	31	67	78	60	90	2	1.56

KEY APPLICATIONS

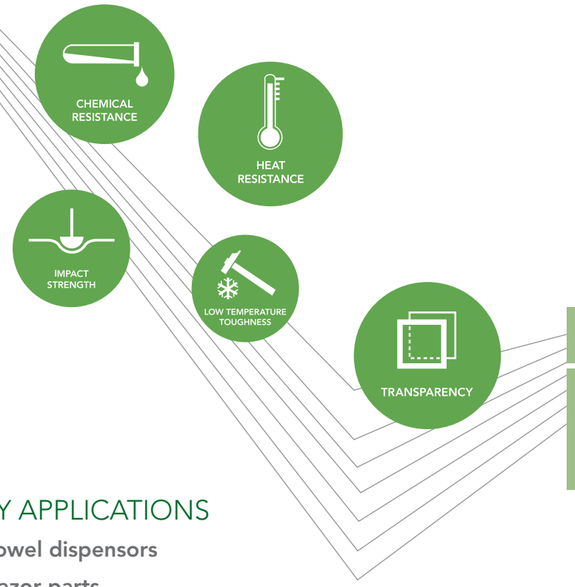
- Cosmetic packaging, e.g. lids
- Medical devices
- Sanitary housings
- Domestic appliances, e.g. vacuum cleaner housings
- Shaving systems
- Transparent toys
- Pens (clips)

CLEARBLEND®

INEOS Styrolution's styrene acrylic copolymers provide chemical and alcohol resistance, ease of processing and a gravity advantage that allows for more parts per kg of resin, as well as lower moisture retention for little or no pre-drying. Offered in a cost-effective dry blend form, Clearblend resins are engineered to provide balanced clarity and toughness so high performance does not have to mean higher cost. Clearblend is FDA compliant, and only available in the Americas and Asia.

For toughness in drop tests, CLEARBLEND delivers excellent performance.

KEY PROPERTIES



	PROPERTIES			PROCESSING					MECHANICAL						THERMAL			OPTICAL
	Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (200 °C / 5kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Tensile stress at yield	Elongation, failure	Izod notched impact strength (23 °C)	Rockwell hardness	Vicat softening temperature, B/1 (120 C° / hour, 10 N)	Light transmission at 550 nm	Haze	Refractive Index, Sodium D Line
TEST METHOD		ISO 1183	ISO 62		ASTM D 1238			ASTM D 955	ASTM D 638	ASTM D 638	ASTM D 638	ASTM D 256	ASTM D 785	ASTM D 1525	ASTM D 1003	ASTM D 1003	ASTM D 542
UNIT		kg/m³	%		cm³/ 10 min	°F	°F	in./in.	PSI X 103	PSI	%	FT-LB/ IN		°F	%	%	–
CLEARBLEND 145	MBS	1.04	0.05	M	3.5	400 - 460	80 - 130	0.002 - 0.006	325	4000	40	1	M 80	208	90	2	1.57
CLEARBLEND 155	MBS	1.05	0.05	M	6	400 - 460	80 - 130	0.002 - 0.006	270	4000	40	2	M 70	208	91	2.5	1.56
CLEARBLEND 165	MBS	1.04	0.05	M	5	400 - 460	80 - 130	0.002 - 0.006	220	3000	50	5	M 70	201	90	2.2	1.57

KEY APPLICATIONS

- Towel dispensors
- Razor parts
- Vent deflectors
- Food bins
- Exercise equipment parts
- Medical applications, e.g. urine meters

STYROLUX®

INEOS Styrolution's crystal-clear thermoplastic styrene butadiene copolymers (SBC) offer an impressive combination of high transparency, brilliance and impact resistance. The good miscibility of Styrolux and polystyrene allows adjustment to the desired toughness, while at the same time reducing material costs. Styrolux can be extruded, thermoformed and injection molded into a variety of high-quality products.

STYROLUX combines clarity, rigidity and toughness in a cost-effective solution.

KEY PROPERTIES

KEY APPLICATIONS

- **Food packaging**
- **Labeling and twist films**
- **Shrink film**
- **Flooring systems**
- **Medical devices, e.g drip chambers**

			TEST METHOD	Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C/ 50% r.h.	Method: injection molding (MI), extrusion (EI), blow molding (B)	Melt volume-flow rate (200 °C / 5kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at yield	Strain at break	Charpy notched impact strength (23 °C)	Charpy unnotched impact strength (23 °C)	Hardness Shore D	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50	Light transmission (4 mm thickness)	Haze (4 mm thickness)	Refractive Index (nD)
			UNIT		kg/m³	%		cm³/ 10 min	°C	°C	%	MPa	MPa	%	kJ/m²	kJ/m²		°C	°C	°C	%	%	–
					ISO 1183	ISO 62		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 179/1eA	ISO 179/1eA	ISO 868	ISO 75-1/-2	ISO 75-1/-2	ISO 306	ASTM D 1003	ASTM D 1003	ISO 489
High impact strength	Universal grade for extrusion and injection molding	Injection molding, highest stiffness, good impact strength	**STYROLUX 656C**	SBC	1020	0.07	M	16	180-250	30-50	0.3-1.0	1800	35	20	2	25	72	67	77	63	90	1.5	1.58
		Good printability	**STYROLUX 684D**	SBC	1010	0.07	M, E, B	11	180-250	30-50	0.3-1.0	1500	26	160	4	n.b.	68	65	75	59	89	1.5	1.57
		Highest transparency	**STYROLUX 3G46**	SBC	1010	0.07	M, E, B	12	180-250	30-50	0.3-1.0	1550	27	180	3	n.b.	65	58	75	51	90	1	1.57
	Sheet extrusion for thermo-forming, blown-film	Chill-roll extrusion	**STYROLUX 693D**	SBC	1010	0.07	E	12.5	180-250	20-40	0.3-1.0	1300	22	260	5	n.b.	64	59	72	48	89	2	1.57
		Greatest effectiveness in GPPS blends, highest impact strength	**STYROLUX 3G55**	SBC	1010	0.07	E	14	190-230	–	–	900	15	> 300	85	n.b.	58	51	62	35	89	3	1.57
	Shrink sleeves	Dedicated grades for the production of shrink films (2 component system)	**STYROLUX T**	SBC	1010	0.07	E	11	180-230	–	–	1200	25	250	2	n.b.	67	–	–	46	89	2	1.57
			STYROLUX S	SBC	1020	0.07	E	11	180-230	–	–	2900	–	2	2	20	83	–	–	64	90	0.5	1.58

K-RESIN®

INEOS Styrolution's crystal-clear thermoplastic styrene butadiene copolymers (SBC) is known for its unique blend of sparkling clarity, impact toughness, stiffness and exceptional gloss. K-Resin is used in various applications ranging from packaging and toys to medical components and displays for more than 40 years.

KEY PROPERTIES

		PROPERTIES				PROCESSING		MECHANICAL								THERMAL		OPTICAL		
		Polymer abbreviation	Density	Moisture absorption		Method: Injection Molding (M), Extrusion (E), Film (F)	Melt flow rate, 200°C/5.0kg	Instrumented dart impact, total energy	Tensile stress at yield, 23°C	Tensile strain at break, 23°C	Flexural strength, 23°C	Flexural modulus, 23°C	Hardness, Shore D	Puncture, energy at peak force	Vicat softening temperature, B/1 (120°C/h, 10N)	DTUL @ 264 psi - annealed	Light transmission at 550nm	Gardner gloss (mold temperature 100°F)	Haze
	TEST METHOD		ISO 1183	ASTM D 570			ISO 1133		ISO 527	ISO 527	ISO 178	ISO 178	ISO 868		ASTM D 1525		ASTM D 1003	ASTM D 2457	ASTM D 1003
	UNIT		kg/m3	%			g/10 min	J	MPA	%	MPa	MPa		J	°C	°C	%	%	%
Injection molding, good stiffness, good toughness, high surface gloss	**K-RESIN KR01**	SBC	1010	–		M	8	2.1	33.4	30	54	1,800	69	–	90	64	93	164	–
	K-RESIN KR03*	SBC	1010	0.09		M	7.5	40	26	230	37	1,795	63	–	85	62	92	162	–
	K-RESIN BK10	SBC	1010	–		M	15	41	26	248	35.6	1,668	62	–	82	60	90	–	–
Impact modifier, improved toughness for styrenic polymers and styrenic polymer blends	**K-RESIN KR20**	SBC	990	–		M, E	6	33	10.3	>500	16	640	46	–	60	50	91	–	–
Extrusion, good stiffness, good formability	**K-RESIN KR05**	SBC	1010	0.09		E	7.5	40	26	230	37	1,795	63	–	85	62	92	162	–
	K-RESIN KR38	SBC	1000	–		E	9	38.4	16.2	260	25	1,365	56	–	74.4	56.7	92	–	–
	K-RESIN KR40	SBC	1020	–		E	10	43	15.4	339	24.4	847	60	–	63	47	90	–	–
	K-RESIN XK44	SBC	1010	–		E	6	47.5	21.6	350	34.5	1,122	65	–	75.6	53	93	–	–
Film, excellent optical properties, high surface gloss, good heat sealability, enhanced printing characteristics	**K-RESIN DK11**	SBC	1010	–		F	7.5	–	–	–	–	–	–	0.9	85 (1)	–	–	140	0.7
	K-RESIN KR52	SBC	1010	–		F	9	–	–	–	–	–	–	3	60 (1)	–	–	145	4
	K-RESIN KR53	SBC	1020	–		F	10	–	–	–	–	–	–	1.1	63 (1)	–	–	140	0.2

Try K-RESIN for its sparkling clarity, impact toughness, stiffness and exceptional gloss.

KEY APPLICATIONS

- Food packaging
- Labeling and twist films
- Shrink film
- Medical devices, e.g drip chambers

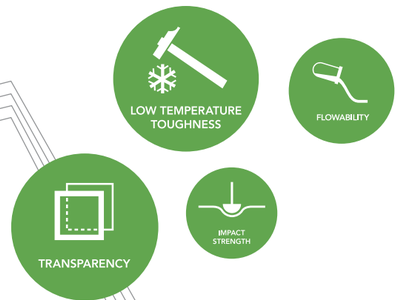
* KR03NW is available as a wax-free option

(1) Injection molded specimen

STYROFLEX®

INEOS Styrolution's styrene-butadiene block copolymer (SBC) with the properties of a thermoplastic elastomer (S-TPE), suitable for extrusion (including both blown and cast film) and injection molding. Characterized by a combination of high resilience and toughness, optical clarity and process stability, Styroflex also offers good printability and good adhesion to many different polymers.
In elastic film applications, Styroflex provides excellent stretch recovery, superior transparency, puncture resistance, as well as high oxygen and moisture permeability. It is also employed as a high performance additive to increase toughness and e.g. the stress cracking resistance of styrenic and olefinic polymers.

KEY PROPERTIES



			PROPERTIES			PROCESSING					MECHANICAL									THERMAL				OPTICAL		
		Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (200 °C/5kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at break	Strain at break	Flexural strength	Charpy notched impact strength (23 °C)	Charpy unnotched impact strength (23 °C)	Izod unnotched impact strength (23 °C)	Izod notched impact strength (23 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50	Vicat softening temperature, VST/A/120	Light transmission (4 mm thickness)	Haze (4 mm thickness)	Refractive Index (nD)
TEST METHOD			ISO 1183	ISO 62		ISO 1133				ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1eA	ISO 179/1eA	ISO 180/1U	ISO 180/1A	ISO 75-1/-2	ISO 75-1/-2	ISO 306	ISO 306	ASTM D 1003	ASTM D 1003	ISO 489
UNIT			kg/m³	%		cm³/ 10 min	°C	°C		%	MPa	MPa	%	MPa	kJ/m²	kJ/m²	kJ/m²	kJ/m²	°C	°C	°C	°C	%	%	–
General purpose	Water clear clarity	**STYROFLEX 2G66**	SBC	1020	0.07	M, E	14	180-230	30-50		0.3-1.0	120	4	5	4	n.b.	n.b.	200	15	–	–	–	35	80	5	1.565

STYROFLEX combines excellent transparency, toughness, elasticity and processability.

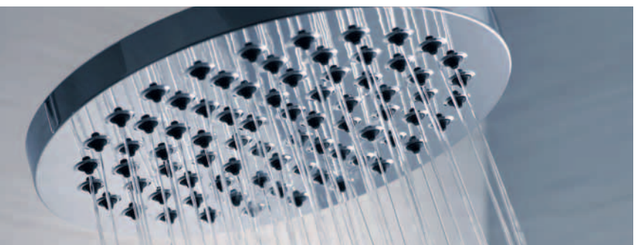
KEY APPLICATIONS

- Flexible films
- Medical tubes
- Stretch hoods
- Impact-modified compounds

ENHANCED SPECIALTIES

DISCOVER THE VERSATILITY

WHAT IS **YOUR** ENHANCED SPECIALTIES APPLICATION?



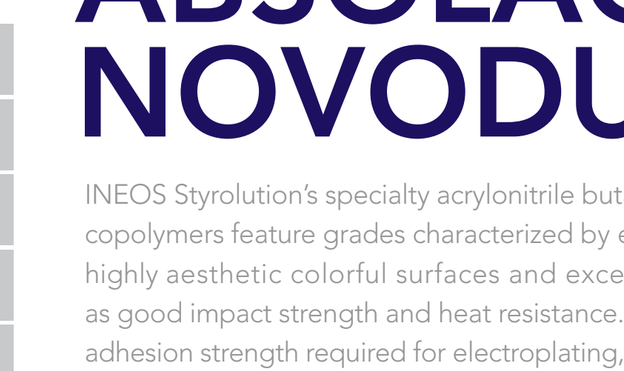
ABSOLAC® / NOVODUR®

INEOS Styrolution's specialty acrylonitrile butadiene styrene (ABS) copolymers feature grades characterized by easy processability, highly aesthetic colorful surfaces and excellent paintability, as well as good impact strength and heat resistance. They also exhibit high adhesion strength required for electroplating, as well as good mechanical strength and chemical resistance. These grades are exclusively manufactured in India.

KEY APPLICATIONS

- Automotive exterior: radiator grilles, light housing, spoiler, helmets
- Automotive interior: loudspeaker grilles
- Housings for electronic devices
- Household applications
- Office equipment

KEY PROPERTIES



ABSOLAC / NOVODUR products are available pre-colored and can be tailored to your needs.

			PROPERTIES		PROCESSING				MECHANICAL							THERMAL			
			Polymer abbreviation	Density	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume rate, MVR (220 °C / 10 kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus (50mm/min)	Stress at yield/break (50mm/min)	Rockwell hardness (23 °C)	Flexural strength (5mm/min)	Flexural modulus (5mm/min)	IZOD notched impact strength (23°C, AT 1/4" thickness)	IZOD notched impact strength (23°C, AT 1/8" thickness)	Heat deflection temperature (annealed)**, HDT A (1.80 MPa)	Heat deflection temperature (annealed)**, HDT B (0.45 MPa)	Vicat softening temperature, Cond.B-50N	Coefficient of linear thermal expansion (23-55°C)
		TEST METHOD		D 792		ISO 1133			D 955	D 638	D 638	D 785 ISO 2039/2	D 790	D 790	D256	D256	D 647	D 647	D 1525	D 696
		UNIT				gms/ 10min	°C	°C	%	kg/cm²	kg/ cm²	R-scale	kg/ cm²	kg/cm²	kg.cm/ cm	kg.cm/ cm	°C	°C	°C	10E-4/°C
High impact	Super high impact	**ABSOLAC 100**	ABS	1.04	M	12	220-260	60-80	0.4 - 0.6	22000	425	95	625	21000	38	45	92	97	96	0.7-1
High impact	Medium flow	**ABSOLAC 120**	ABS	1.04	M	18	220-260	60-80	0.4 - 0.6	27000	480	105	750	25000	24	29	90	97	97	0.7-1
High impact	Good flow	**ABSOLAC 140**	ABS	1.04	M	30	220-260	60-80	0.4 - 0.6	26000	475	102	700	24000	22	26	93	97	98	0.7-1
General purpose	High gloss / High flow	**ABSOLAC 300**	ABS	1.04	M	35	220-260	60-80	0.4 - 0.6	27000	525	105	750	26000	20	24	93	99	100	0.7-1
General purpose	Refrigeration grade	**ABSOLAC 320**	ABS	1.04	M	16	220-260	60-80	0.4 - 0.6	26000	525	110	750	27000	20	24	93	97	98	0.7-1
General purpose	High gloss / Very high flow	**ABSOLAC 380**	ABS	1.04	M	40	220-260	60-80	0.4 - 0.6	27000	525	105	750	26000	18	20	93	97	98	0.7-1
General purpose	Medium impact / Good flow	**ABSOLAC 920 NATURAL**	ABS	1.04	M	>25	220-260	60-80	0.3 - 0.5	25000	500	105	700	24000	>16	19	93	97	97	0.7-1
General purpose	High rigidity	**ABSOLAC 150**	ABS	1.04	M	25	220-260	60-80	0.3 - 0.5	28000	500	110	750	25000	20	24	95	97	97	0.7-1
General purpose	Very high gloss	**ABSOLAC 700**	ABS	1.04	M	>25	220-260	60-80	0.3 - 0.5	26000	475	105	700	24000	>15	18	93	97	97	0.7-1
General purpose	High impact	**NOVODUR E 502**	ABS	1.04	E	5	215-240	–	0.45 - 0.65	25000	450	95	750	21000	40	45	95	97	98	0.7-1
General purpose		**ABSOLAC DP 03H**	ABS	1.04	E	8	215-240	–	0.45 - 0.65	23000	480	100	700	24000	>40	45	94	102	100	0.7-1
Heat resistance	Medium heat / Good flow	**ABSOLAC 120HR**	ABS	1.04	M	21	220-270	70-90	0.4 - 0.6	26000	475	105	650	24000	24	28	95	99	99	0.7-0.9
Heat resistance	High heat / Better flow	**ABSOLAC XT04 M**	ABS	1.04	M	10	220-270	70-90	0.45 - 0.65	28000	525	110	750	28500	17	22	99	102	102	0.7-0.8
Heat resistance	High heat	**ABSOLAC XT04 P**	ABS	1.04	M	4	220-270	70-90	0.45 - 0.65	28000	550	106	700	24000	18	22	102	105	108	0.7-0.8
Heat resistance	Super high heat	**ABSOLAC XT04 PM**	ABS	1.04	M	5	220-270	70-90	0.45 - 0.65	28000	550	110	900	28000	18	20	103	114	110	0.7-0.8
Special grades	Electroplating	**ABSOLAC 200EP**	ABS	1.04	M	20	220-260	60-80	0.4 - 0.6	26000	450	102	625	21000	30	35	93	95	95	0.7-1
Special grades	Standard impact / High flow	**NOVODUR M 204**	ABS	1.04	M	35	220-260	60-80	0.3 - 0.5	27000	500	103	750	25000	26	28	93	100	97	0.7-1

ABSOLAC Glass filled grades - ABSOLAC 30 GF 15%; ABSOLAC 30 GF 20%; & ABSOLAC 30 GF 30% - are also available. Kindly contact us for more product details.

NOVODUR®

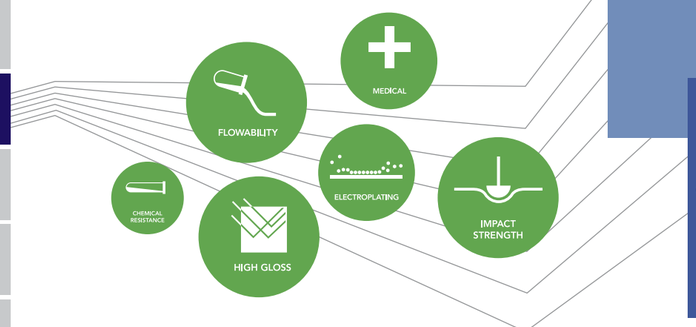
INEOS Styrolution's specialty acrylonitrile butadiene styrene (ABS) copolymers feature grades with a well-balanced mix of properties for injection molding, including good impact strength, dimensional stability and heat resistance. Novodur is easy to process and creates a highly aesthetic, colorful surface appearance. The versatile product line is available pre-colored and contains products with many unique features to fit the most demanding product applications, including medical.

Ask us how NOVODUR can be tailored to your needs.

KEY APPLICATIONS

- **Automotive exterior: rear spoilers**
- **Automotive interior: plated parts**
- **Vacuum cleaner housings**
- **Fridge inner/door liners**
- **Medical appliances such as inhaler housings**
- **Housings for electronic devices**

KEY PROPERTIES



		PROPERTIES		PROCESSING				MECHANICAL								THERMAL			
		Polymer abbreviation	Density	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume rate, MVR (220 °C / 10 kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at yield / break	Strain at yield / break	Flexural strength	Charpy unnotched impact strength (23 °C / -30 °C)	Charpy notched impact strength (23 °C / -30 °C)	IZOD notched impact strength (23 °C / -30 °C)	Ball indentation hardness (H 358 / 30)	Heat deflection temperature (annealed)**, HDT A (1.80 MPa)	Heat deflection temperature (annealed)**, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50	Vicat softening temperature, VST/B/120
	TEST METHOD		ISO 1183		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178			ISO 180/1A		ISO 75-1/-2	ISO 75-1/-2	ISO 306	ISO 306
	UNIT		kg/m³		cm³/ 10min	°C	°C	%	MPa	MPa	%	MPa			kJ/m²		°C	°C	°C	°C
Stiffness	**NOVODUR 250**	ABS	1040	M	38	220-260	60-80	0.4-0.7	2500	49 / 37	2.6 / 20	75	–	–	14/6	–	92	96	–	99
Plating	**NOVODUR 377**	ABS	1040	M	28	220-260	60-80	0.4-0.7	2500	48 / 34	2.6 / 20	71	–	–	17/7	–	91	95	–	98
Medical	**NOVODUR HD M203FC**	ABS	1050	M	31	230-260	60-80	0.4-0.7	2400	46 / n.d.	2.6 / >15	70	110/90	15/7	15/7	105	94	98	99	101
Paintable	**NOVODUR 970**	ABS	1040	M	22	220-260	60-80	0.4-0.7	2250	41 / 31	2.6 / 20	71	–	–	17/7	–	91	95	–	98
Electroplating	**NOVODUR P2MC**	ABS	1040	M	25	230-260	60-80	0.4-0.7	2200	40 / n.d.	2.4 / >15	62	n.d.(**)	24/14	23/12	90	94	96	95	98
Enhanced flow	**NOVODUR P2H-AT**	ABS	1040	M	37	230-260	60-80	0.4-0.7	2500	42/32	2.1 / >25	68	100/80	16/7	16/7	110	93	97	98	–
Chemical resistance	**NOVODUR 680 LNS503**	ABS	1040	M	10	220-260	60-80	0.4-0.7	2600	49 / 37	2.6 / >25	72	–	–	23/10	–	92	96	102	–
Impact strength	**NOVODUR 640**	ABS	1040	M	16	220-260	60-80	0.4-0.7	2250	43 / 33	2.5 / 20	67	–	–	24/10	–	91	95	–	99
Extrusion	**NOVODUR 530**	ABS	1040	E	3.5	220-260	60-80	n/a	2200	41 / 33	- / >25	66	–	–	30/13	–	91	95	–	98
Enviromental stress cracking resistance (ESCR)	**NOVODUR 595CP**	ABS	1050	E	3	220-260	60-80	n/a	2550	46 / 38	- / >25	70	–	–	25/11	–	96	100	–	102
Super high impact	**NOVODUR 532**	ABS	1040	E	2.5	220-260	60-80	n/a	1900	38 / 31	- / >25	61	–	–	35/15	–	90	93	–	95

General purpose

* no break
** not determined
*** 4h@80 °C

NOVODUR® HIGH HEAT

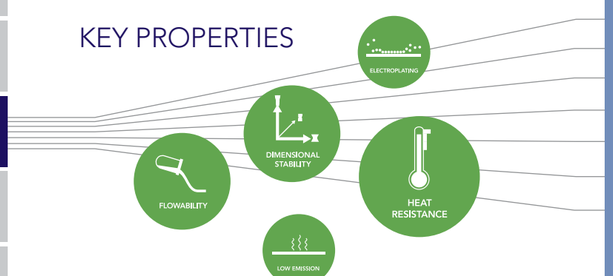
INEOS Styrolution's specialty acrylonitrile butadiene styrene (ABS) copolymers feature grades with a well-balanced mix of properties for injection molding, including good impact strength, dimensional stability and heat resistance. Novodur High Heat is easy to process and creates a highly aesthetic, colorful surface appearance. The versatile product line is available pre-colored and contains products with many unique features to fit the most demanding product applications.

NOVODUR HIGH HEAT is the material of choice for heat resistance and aesthetics.

KEY APPLICATIONS

- Automotive exterior: mirror housings, light housings, front grills, trims
- Automotive interior: glove boxes, center consoles, instrument panel trims, trims
- Vacuum cleaner housings, coffee machines

KEY PROPERTIES



				PROPERTIES		PROCESSING				MECHANICAL								THERMAL			
				Polymer abbreviation	Density	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume rate MVR (220 °C / 10 kg) / (260 °C / 5 kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at yield / at break	Strain at yield / at break	Flexural strength	Charpy unnotched impact strength (23 °C / -30 °C)	Charpy notched impact strength (23 °C / -30 °C)	Izod notched impact strength (23 °C / -30 °C)	Ball indentation hardness (H 358 / 30)	Heat deflection temperature, (annealed)***, HDT A (1.80 MPa)	Heat deflection temperature (annealed)***, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50	Vicat softening temperature, VST/B/120
		TEST METHOD			ISO 1183		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1U	ISO 179/1eA	ISO 180/A	ISO 2039-1	ISO 75-1/-2	ISO 75-1/-2	ISO 306	ISO 306
		UNIT			kg/m³		cm³/ 10 min	°C	°C	%	MPa	MPa	%	MPa	kJ/m²	kJ/m²	kJ/m²	MPa	°C	°C	°C	°C
High heat	Highest	Impact strength	**NOVODUR H950**	ABS	1050	M	4 / n.d.	230-260	60-80	0.5-0.7	2600	50 / n.d.	2.7 / >15	80	140 / 90	16 / 7	17 / 8	110	101	108	113	116
		Stiffness	**NOVODUR HH-112**	ABS	1050	M	6 / n.d.	230-260	30-80	0.4-0.7	2700	58 / n.d.	3.1 / 8	81	140 / 80	12 / 5	12 / 5	114	109	113	112	114
		Low flow	**NOVODUR P2T**	ABS	1050	E	3 / n.d.	220-260	60-80	0.45-0.65	2800	53 / n.d.	n.d. / >10	80	n.d.	n.d.	15 / 6	–	98	105	110	–
	High	Stiffness	**NOVODUR H802**	ABS	1050	M	8 / n.d.	230-260	60-80	0.4-0.7	2700	51 / n.d.	2.8 / >15	80	100 / 80	15 / 7	15 / 7	115	101	107	109	111
		Balanced property profile	**NOVODUR HH-106**	ABS	1050	M	7 / n.d.	230-260	30-80	0.4-0.7	2400	51 / n.d.	3 / 9	72	190 / 100	17 / 7	17 / 7	102	106	111	106	108
		Impact strength, low emission	**NOVODUR H801**	ABS/PC	1070	M	9 / n.d.	240-260	60-80	0.4-0.7	2400	49 / n.d.	3 / >15	77	220 / 160	30 / 12	30 / 12	105	99	106	105	108
		Very high impact strength	**NOVODUR ULTRA 4105**	ABS/PC	1070	M	9 / 14	240-260	60-80	0.6-0.8	2000	45 / n.d	3.7 / >15	70	n. b.(*) / 280	40 / 30	42 / 34	85	99	108	106	109
		Enhanced flow	**NOVODUR H702**	ABS	1040	M	16 / n.d.	230-260	60-80	0.4-0.7	2500	46 / n.d.	2.6 / >15	73	100 / 90	16 / 8	17 / 8	105	99	104	103	105
	Medium	Electroplating, impact strength	**NOVODUR ULTRA 4140PG**	ABS/PC	1070	M	9 / 13	240-260	60-80	0.6-0.8	2100	46 / n.d.	3.5 / >15	72	n. b.(*) / 280	38 / 28	40 / 31	85	99	108	106	108
		Electroplating, stiffness	**NOVODUR ULTRA 4000PG**	ABS	1050	M	6 / n.d.	230-260	60-80	0.5-0.8	2400	46 / n.d.	3.1 / >15	73	n. d. (**)	20 / 10	23 / 10	100	98	103	107	110
		Enhanced flow	**NOVODUR H605**	ABS	1050	M	25 / n.d.	230-260	60-80	0.4-0.6	2400	47 / n.d.	2.5 / >15	72	90 / 80	17 / 7	17 / 7	105	98	102	101	104
		Chemical resistance	**NOVODUR H604**	ABS	1040	M	8 / n.d.	230-260	60-80	0.5-0.7	2400	45 / n.d.	2.6 / >15	70	180 / 110	20 / 11	21 / 12	105	98	102	102	104

* no break
** not determined
*** 4h@80 °C

LURAN® S

INEOS Styrolution's acrylonitrile styrene acrylate (ASA) polymers are the benchmark styrenic polymer for weather resistance. The grades in the Luran S portfolio feature high surface quality, excellent chemical resistance and good impact strength, including enhanced color fastness and superior long-term performance when exposed to UV irradiation and heat.

LURAN S is our benchmark material for bright conditions.

KEY APPLICATIONS

- **Automotive exterior: radiator grilles, mirror housings**
- **Automotive interior: overhead compartments**
- **Household applications**
- **PVC capstock for sheets, sidings, roof tiles**
- **Gardening equipment**
- **Sanitary**

KEY PROPERTIES

			PROPERTIES			PROCESSING				MECHANICAL							THERMAL		
			Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (IM), extrusion (E), blow molding (B)	Melt volume rate MVR (220 °C / 10 kg)	Melt temperature range	Mold temperature range	Linear mold shrinkage	Tensile modulus	Tensile stress at yield, 23 °C	Tensile strain at yield, 23 °C	Flexural strength	Charpy notched impact strength (23 °C)	Charpy notched impact strength (-30 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50
	TEST METHOD		ISO 1183	ISO 62		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1eA	ISO 179/1EA	ISO 75-1/-2	ISO 75-1/-2	ISO 306
	UNIT		kg/m³	%		cm³/ 10 min	°C	°C	%	MPa	MPa	%	MPa	kJ/m²	kJ/m²	°C	°C	°C
High heat	Chemical resistance	**LURAN S 778T**	ASA	1070	0.35	M/E	5	240 - 280	60	0.5 - 0.9	2500	54	3.4	80	15	4	103	106	104
	Enhanced flow	**LURAN S 757G**	ASA	1070	0.35	M	25	240 - 280	60	0.5 - 0.9	2400	51	3.3	75	12	3	96	101	97
	Enhanced stiffness	**LURAN S 757R**	ASA	1070	0.35	M	8	240 - 280	60	0.5 - 0.9	2600	56	3.1	80	12	3	97	101	98
	Universal	**LURAN S 777K**	ASA	1070	0.35	M	15	240 - 280	60	0.5 - 0.9	2300	48	3.3	70	17	4	97	101	97
High impact	Highest impact	**LURAN S 797S(E)**	ASA	1070	0.35	M/E	5.5	240 - 280	60	0.5 - 0.9	2000	42	3.5	60	40	9	95	100	90
	Low gloss/ extrusion	**LURAN S 797SE Q440**	ASA	1070	0.4	E	5	200 - 240	60	0.5 - 0.9	1900	41	3.5	–	20	5	96	101	102
Surface gloss	Low gloss	**LURAN S 776S(E)**	ASA	1070	0.35	M/E	4	240 - 280	60	0.5 - 0.9	2200	47	3.3	65	30	4	96	101	92
	High gloss	**LURAN S 757RE Q385**	ASA	1070	0.35	E	7	240 - 280	60	0.5 - 0.9	2600	54	3.2	79	8	3	97	101	98

E = extrusion grade

LURAN® SC

INEOS Styrolution's blends of acrylonitrile styrene acrylate copolymer and polycarbonate (ASA/PC) offer superior UV resistance combined with high heat resistance. Luran SC grades are primarily used for demanding applications in automotive interiors and exteriors. INEOS Styrolution also offers a flame-retardant grade that meets UL 94 test standards at V0.

Explore the possibilities of LURAN SC's antistatic and flame-retardant grades.

KEY APPLICATIONS

- **Automotive exterior: radiator grilles, mirror housings**
- **Automotive interior: overhead compartments**
- **Sanitary applications**
- **PVC capstock for sheets, sidings, roof tiles**
- **Office equipment**
- **Truck cabin parts, wind turbines**
- **Electronics: antenna applications**

KEY PROPERTIES

			PROPERTIES			PROCESSING					MECHANICAL						THERMAL		
		Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume rate MVR (220 °C / 10 kg)	Melt volume rate MVR (260 °C / 5 kg)	Melt temperature range	Mold temperature range	Linear mold shrinkage	Tensile modulus	Tensile stress at yield, 23 °C	Tensile strain at yield, 23 °C	Flexural strength	Charpy notched impact strength (23 °C)	Charpy notched impact strength (-30 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50
	TEST METHOD		ISO 1183	ISO 62		ISO 1133	ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 179/1eA	ISO 179/1EA	ISO 75-1/-2	ISO 75-1/-2	ISO 306
	UNIT		kg/m³	%		cm³/ 10 min	cm³/ 10 min	°C	%	%	MPA	MPA	%	MPa	kJ/m²	kJ/m²	°C	°C	°C
High impact strength	Highest impact strength	**LURAN S KR2868**	ASA/PC	1150	0.25	M	–	20	260 - 300	80	0.5 - 0.9	2400	60	4.6	80	100	15	103	123	130
	Enhanced flow	**LURAN S KR2864C**	ASA/PC	1150	0.18	M	10	25	260 - 300	80	0.5 - 0.9	2600	63	4.6	100	55	11	105	124	120
	Highest heat resistance	**LURAN S KR2863C**	ASA/PC	1160	0.16	M	7	18	260 - 300	80	0.5 - 0.9	2500	62	4.9	93	60	17	109	130	130
		LURAN S KR2861/1C	ASA/PC	1150	0.25	M	3.5	14	260 - 300	80	0.5 - 0.9	2300	53	4.9	78	60	20	106	125	120
	Reduced PC content	**LURAN S KR2866C**	ASA/PC	1110	0.25	M	5	11	260 - 300	80	0.5 - 0.9	2600	60	3.4	90	35	9	102	113	110
	Flame retarding	**LURAN S KR2867CWU**	ASA/PC	1190	0.15	M	25	45	260 - 300	80	0.5 - 0.9	2600	61	4	90	40	6	96	100	105

TERBLEND® N
TERBLEND® S

High-performance applications are driven by TERBLEND N/S.

INEOS Styrolution's acrylonitrile butadiene styrene and acrylonitrile styrene acrylate copolymer blends with polyamide (ABS/PA and ASA/PA) are the ideal choice for a matt surface finish. Terblend N (ABS/PA blends) and Terblend S (ASA/PA blends) comprise a family of styrenic grades perfect for a wide range of uses across multiple industries, including automotive, construction, household and electronics. Some of their unique features include pleasant haptics, easy processing, good adhesion to soft components, paintability without pretreatment and the potential for accelerated cycle times.

KEY APPLICATIONS

- Automotive interior loudspeaker grilles, air inlets, steering wheel covers
- Automotive center consoles, helmets
- Soap dispensers, unpainted automotive interiors
- Overhead consoles, housings for electrical and electronic devices

KEY PROPERTIES

				PROPERTIES			PROCESSING			MECHANICAL							THERMAL		
		Polymer abbreviation	Density	Moisture absorption, equilibrium 23 °C / 50% r.h.	Method: injection molding (M), extrusion (E), blow molding (B)	Melt volume-flow rate (240 °C / 10 kg)	Melt temperature	Mold temperature	Mold shrinkage	Tensile modulus	Stress at yield	Strain at yield	Flexural strength	Flexural modulus	Charpy notched impact strength (23 °C)	Charpy notched impact strength (-30 °C)	Heat deflection temperature, HDT A (1.80 MPa)	Heat deflection temperature, HDT B (0.45 MPa)	Vicat softening temperature, VST/B/50
TEST METHOD			ISO 1183	ISO 62		ISO 1133			ISO 294-4	ISO 527	ISO 527	ISO 527	ISO 178	ISO 178	ISO 179/1eA	ISO 179/1eA	ISO 75-1/-2	ISO 75-1/-2	ISO 306
UNIT			kg/m³	%		cm³/ 10 min	°C	°C	%	MPa	MPa	%	MPa	MPa	kJ/m²	kJ/m²	°C	°C	°C
High impact	UV resistance	Highest UV resistance	**TERBLEND S NM-31**	ASA/PA	1070	1.5	M	60	240 - 270	40 - 80	0.8	2100	50	3.3	65	2000	70	9	65	92	110
		Enhanced flow	**TERBLEND N NM-21EF**	ABS/PA	1070	1.3	M	60	240 - 270	40 - 80	0.8	2100	45	3.1	65	2000	70	12	63	88	110
			TERBLEND N NM-19(XP)	ABS/PA	1070	1.2	M	30 (40)	240 - 270	40 - 80	0.8	2000	43	3.5	62	1800	65	15	65	85	102
		Painting grade & high toughness	**TERBLEND N NMX04**	ABS/PA	1070	1.2	M	35	240 - 270	40 - 80	0.7	2000	40	3.5	60	1800	65	20	72	97	97
		Low temperature toughness	**TERBLEND N NM-13**	ABS/PA	1070	1.1	M	25	240 - 270	40 - 80	0.8	1600	35	3.4	50	1500	80	30	58	80	91
			TERBLEND N NM-11	ABS/PA	1070	1.2	M	30	240 - 270	40 - 80	0.8	2000	43	3.5	62	1800	65	15	65	85	102
		Good flow	**TERBLEND N NM-12**	ABS/PA	1070	1.1	M	34	240 - 270	40 - 80	0.8	2200	50	3.2	74	2200	17	9	66	88	105
Enhanced dimensional stability and rigidity	Glass fiber reinforced		**TERBLEND N NG-02(UV)**	ABS/PA GF8	1120	1.1	M	30	240 - 270	40 - 80	0.6	3200	50 (55)	3	80	2800	8	3	80	105	108
		Impact strength	**TERBLEND N NG-03**	ABS/PA GF15	1180	0.9	M	25	240 - 270	40 - 80	0.5	4000	60	3.2	100	3500	8	4	100	164	111
		Highest stiffness	**TERBLEND N NG-04**	ABS/PA GF20	1200	0.9	M	15	240 - 270	40 - 80	0.4	5400	60	3.2	115	4500	8	5	100	164	114
	Mineral reinforced		**TERBLEND N 3154**	ABS/PA MF8	1110	3.9 (saturated)	M	8 (260 °C/ 5 kg)	250 - 285	80	0.6	2700	55	2.9	80	2500	8	6	83	97	105

INEOS STYROLUTION AT A GLANCE

INEOS Styrolution is the global leader in styrenics – and the world's leading supplier of automotive styrenics. The company also provides styrenic applications for many everyday products across a broad range of other industries, including healthcare, electronics, household, construction, toys/sports/leisure, and packaging.

LET'S COLLABORATE

If you would like further details, need assistance in creating your applications, or are curious to explore new possibilities with styrenics, please contact us! Please also refer to: **www.ineos-styrolution.com**

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INEOS STYROLUTION

Driving Success. Together.