

BEAUTY AT ITS BEST

Styrenic packaging solutions for cosmetics



INEOS
STYROLUTION

Driving Success. Together.



ENSURING YOUR PRODUCTS LOOK & FEEL GREAT

INEOS STYROLUTION is the world's leading supplier of styrenic plastics for cosmetics packaging with a deep understanding of the industry, its applications and value chains. In an industry where elegance and beauty must be reflected in every aspect of a product's design and surface quality, INEOS Styrolution offers a wide product portfolio of premium aesthetic solutions for the creation of eye-catching elegant surfaces and visual effects.

Aside from a broad opaque product portfolio, INEOS Styrolution is also continuously innovating new grades with breathtaking transparency.

DOING IT YOUR WAY

As a reliable global supplier, INEOS Styrolution also delivers broad application expertise, a long-term commitment to R&D, and opportunities for product co-development right from day one of a new idea. In a process of collaborative innovation covering every-

For thick walled cream jars, for example, a "crystal clear" appearance is a must. That's why INEOS Styrolution developed its crystal clear Luran® grades with a particularly low intrinsic color and excellent clarity.

Besides good looks, there are applications that also require an attractive acoustic performance. If accidentally dropped on the floor, most other materials will make a clattering, cheap-sounding noise. Product families like our NAS®, Zylar® and Terlux® grades offer superior acoustic performance resulting in a deep, rich sound appropriate to a quality luxury product.

thing from texture to shape and color, customers define together with INEOS Styrolution how their ideas can be transformed into beautiful packaging solutions.

STUNNING STYRENICS PROPERTIES FOR COSMETICS PACKAGING

Some of the reasons specialty styrenics are the polymers of choice for cosmetics packaging:

WATER-CLEAR ^{SUPERIOR} ^{COLOR DEPTH}
^{PIANO PAINT} ^{LOOK} TRANSPARENCY ^{HIGH} ^{TOUGHNESS}
BRILLIANT COLORABILITY
^{EXQUISITE HAPTICS} ^{SCRATCH} ^{EXCELLENT} ^{FLOWABILITY}
^{IN-MOLD DECORATION,} ^{PAINTING AND PRINTING} **HIGH RESISTANCE** ^{SOUND DAMPENING}
^{EASY TO} ^{PROCESS} **GLOSS**
^{LONGEVITY} ^{CUSTOMIZABLE HUES} ^{HIGH COLOR CONSISTENCY}
RESISTANCE TO MEDIA ^{METALLIZATION}
^{IMPACT RESISTANCE} **ELEGANT SURFACE FINISH**

PREMIUM AESTHETICS

FOR COSMETICS PACKAGING SOLUTIONS

► Be inspired by
WATER-CLEAR TRANSPARENCY

that looks as stunning as ice or as sparkling as crystal,
such as in the INEOS Styrolution product lines Luran®, NAS® and Zylar®.

► Let your true colors shine thanks to the
BRILLIANT COLORABILITY

inherent in all INEOS Styrolution products, featuring beautiful color
depth, extremely intense colors and an enormous variety of
hues you can even create yourself in collaboration
with our Color Excellence Center.

► Rest assured that your packaging has excellent
RESISTANCE TO MEDIA

including outstanding chemical resistance, extraordinary heat resistance
and high durability, for example with Luran®, Luran® S and Terlux®.

► Always look fresh and new thanks to superior
SCRATCH RESISTANCE

for an enduring, sophisticated surface quality,
particularly in the INEOS Styrolution product lines Luran® and NAS®.

► You'll be dazzled by the
HIGH GLOSS

of eye-catching and brilliant surfaces
delivered by such INEOS Styrolution product
lines as Novodur® and Styrolux®.



INEOS STYROLUTION PRODUCTS FOR COSMETICS PACKAGING

TYPICAL VALUES FOR UNCOLORED PRODUCTS AT 23 °C

			TRANSPARENT & SCRATCH RESISTANT					TRANSPARENT & IMPACT RESISTANT					IMPACT RESISTANT & HIGH GLOSS						
	TEST METHOD	UNIT	NAS® 30	NAS® 90	LURAN® 338L	LURAN® 348Q	LURAN® 358N	TERLUX® 2802	TERLUX® 2812	STYROLUX® 656C	STYROLUX® 3G 46	ZYLAR® 550	ZYLAR® 960	NOVODUR® P2H-AT	NOVODUR® P3H-AT	NOVODUR® P2MC	NOVODUR® BX13036	LURAN® S 757 G	LURAN® S KR 2950
PROPERTIES																			
POLYMER ABBREVIATION	–	–	SMMA	SMMA	SAN	SAN	SAN	MABS	MABS	SBC	SBC	MBS	MBS	ABS	ABS	ABS	ABS/PMMA	ASA	ASA/PMMA
DENSITY	ISO 1183	kg/m³	1090	1070	1080	1080	1080	1080	1080	1020	1010	1050	1050	1050	1050	1030	1120	1070	1100
MOISTURE ABSORPTION, EQUILIBRIUM 23°C/50% R.H.	ISO 62	%	0.15	0.1	0.2	0.2	0.2	0.35	0.35	0.07	0.07	0.05	0.05	0.2–0.3	0.2–0.3	0.2-0.3	0.2–0.3	0.35	0.4
PROCESSING																			
MELT VOLUME-FLOW RATE MVR 220°C/10 KG	ISO 1133	cm³/10min	30	16	40	19	22	2	8	–	–	55	65	37	12	25	16	25	10
MELT VOLUME-FLOW RATE MVR 200°C/5 KG	ISO 1133	cm³/10min	–	–	–	–	–	–	–	16	12	8	6	–	–	–	–	–	–
MELT TEMPERATURE	–	°C	200–240	200–240	220–260	220–260	220–260	230–260	230–260	180–250	180–250	190–230	190–230	220–260	220–260	220–260	200–240	240–280	240–280
MOLD TEMPERATURE	–	°C	30–50	30–50	40–80	40–80	40–80	50–80	50–80	30–50	30–50	10–60	10–60	60-80	60–80	60-80	60–80	60	40–80
MOLD SHRINKAGE	ISO 294–4	%	0.2–0.6	0.2–0.6	0.3–0.7	0.3–0.7	0.3–0.7	0.4–0.7	0.4–0.7	0.3–1.0	0.3–1.0	0.2–0.6	0.2–0.6	0.4–0.7	0.4–0.7	0.4–0.7	0.5–0.6	0.5–0.9	0.4-0.8
MECHANICAL PROPERTIES																			
TENSILE MODULUS	ISO 527–1/–2	MPa	3300	3100	3500	3600	3700	2000	1900	1800	1550	2100	1640	2500	2500	2200	2600	2400	2100
STRESS AT YIELD	ISO 527–1/–2	MPa	60*	60*	64*	70*	72*	48	42	35	27	28	28	44	48	40	48	51	49
STRAIN AT YIELD	ISO 527–1/–2	%	2.5**	2.3**	2**	2.5**	3**	4	4	20	180	50	120	2.1	2.4	2.4	10**	3.3	3.6
FLEXURAL STRENGTH	ISO 178	MPa	100	100	–	115	120	70	60	48	31	50	45	70	71	62	-	75	–
CHARPY UNNOTCHED IMPACT STRENGTH (23°C)	ISO 179/1eU	kJ/m²	12	13	14	14	16	120	110	25	n.b.	n.b.	n.b.	100	180	n.b.	60	190	120
CHARPY NOTCHED IMPACT STRENGTH (23°C)	ISO 179/1eA	kJ/m²	1.5	1.5	2	1.5	2	5	5	2	3	4	16	16	20	24	5	12	9
IZOD NOTCHED IMPACT STRENGTH (23°C)	ISO 180–1A	kJ/m²	2.5	2.5	2	1.5	2	7	7	3	3	3.5	15	16	18	23	–	11	–
THERMAL PROPERTIES																			
HEAT DEFLECTION TEMPERATURE, HDT A (1.80 MPA)	ISO 75–1/–2	°C	80	75	86	86	86	90	87	67	58	70	67	93	92	94	–	96	–
HEAT DEFLECTION TEMPERATURE, HDT B (0.45 MPA)	ISO 75–1/–2	°C	90	83	98	99	99	94	93	77	75	81	78	97	96	96	–	101	–
VICAT SOFTENING TEMPERATURE VST B 50	ISO 306	°C	98	90	105	105	106	93	87	63	51	73	60	96	96	95	92	97	91
OPTICAL PROPERTIES																			
LIGHT TRANSMISSION (4MM THICK)	ASTM D 1003	%	91	91	90	90	90	89	89	89	90	89	89	–	–	–	–	–	–
HAZE (4MM THICK)	ASTM D 1003	%	0.3	0.3	<1	<1	<1	<3	<3	1.5	1	1.5	2	–	–	–	–	–	–
REFRACTIVE INDEX (ND)	ISO 489	–	1.560	1.560	1.569	1.569	1.567	1.540	1.540	1.579	1.573	1.570	1.560	–	–	–	–	–	–

*Value given for stress at break. ** Value given for strain at break.



HOPF

INEOS Styrolution's custom grade Luran® 338L provides glass-like transparency to Hopf's high-quality aesthetic containers.



TOLY

For its new Halo compact line, Toly combined INEOS Styrolution's custom grade Luran® 378P for excellent transparency and media resistance with Novodur® P2H-AT for long-lasting high gloss.

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PLEASE NOTE

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