

DRIVING DESIGN INNOVATION

Styrenic solutions for the automotive industry



INEOS
STYROLUTION

Driving Success. Together.

TABLE OF CONTENTS

IMAGINE	
Unique styrenic properties	04
DISCOVER	
Wide-ranging automotive applications	08
PERFORM	
INEOS Styrolution products & services	14
COLLABORATE	
Pioneering customised solutions	22
SUSTAINABILITY	
Contributing to a circular economy	26
GLOBAL REACH	
And proximity to customer markets	28
EXPLORE	
Statistics, studies, specifications	30



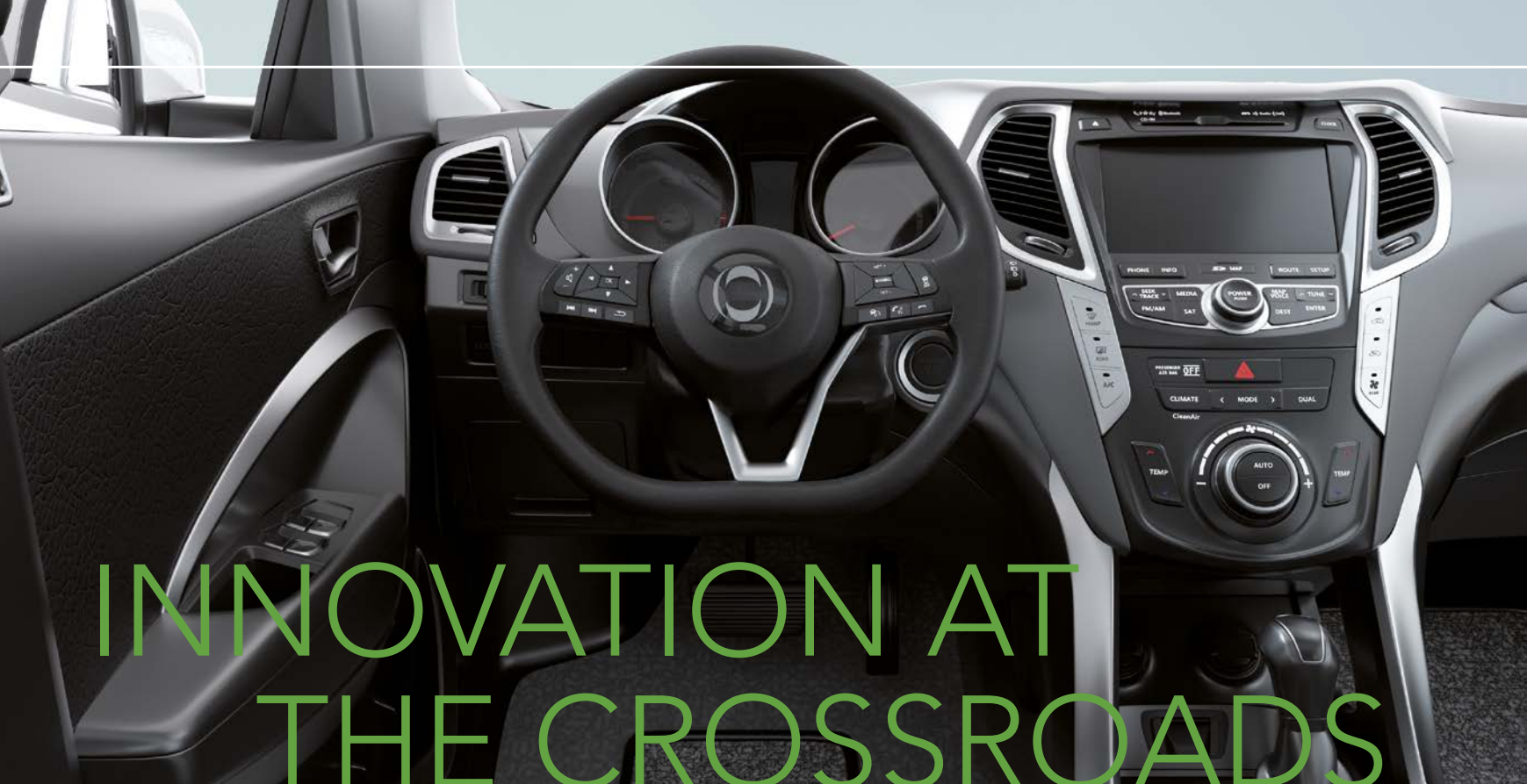
IMAGINE

ENVISIONING

MATERIAL BENEFITS

A forward-thinking purchasing manager at an automotive OEM needs a global and reliable supplier with polymer application expertise. Specifically, it could be for a new steering wheel housing his company is developing to meet changing regulatory requirements, or it could be for a pre-coloured interior trim that needs to be affordable, lighter and more durable. Styrenics from INEOS Styrolution provide the innovation and superior aesthetics he requires. INEOS Styrolution offers a deep understanding of the complex interdependency of materials and design.

“WHAT ARE THE UNIQUE PROPERTIES OF STYRENICS THAT MAKE THEM SO ATTRACTIVE TO THE AUTOMOTIVE SECTOR?”



INNOVATION AT THE CROSSROADS

OF FUNCTION AND FORM

We live in a world of unprecedented change in global production, trade and consumption. In the automotive sector, this means that greater demands for fuel efficiency – ecological, legal and consumer-based – are driving alternative power train development, the use of lighter weight materials and regulatory change. Emerging markets are the incubators of huge numbers of new consumers and everywhere the value chain is becoming more diverse and more complex.

Take just one example: aesthetics. Polymers in car exteriors offer visible proof of vehicle quality, superiority and differentiated overall performance. At the same time, they are also used to improve the look and feel of lower cost automobiles. The easy processability and colouring characteristics of styrenic polymers also make them attractive to designers and manufacturers, allowing changes to be simpler and more cost-effective. Plus, they enable expanded customer choice.

STYRENIC SPECIALTIES STAND FOR AFFORDABLE HIGH AESTHETICS

Low system costs and exceptional aesthetic solutions for interior and exterior applications, such as high and low gloss, weatherability, and unpainted solutions.

HOW STYRENIC SOLUTIONS ARE SHAPING THE FUTURE

Styrenics are a family of unique thermoplastics with a broad range of applications. Styrenics are being used in more and more applications in the automotive sector because of properties like lower density, excellent aesthetics and superior processing abilities. At the end of the day, the balanced performance of styrenics delivers high surface quality at low cost, resulting in greater customer satisfaction.

Additionally, the unique characteristics of styrenics materials make secondary operations such as gluing, in-mould decorating, welding, painting and electroplating easy and affordable.

STYRENICS PROPERTIES THAT OUTPERFORM

Some of the reasons styrenics specialties are becoming the automotive polymer of choice

HIGH UV RESISTANCE EASY PAINTING
DEEP COLOURS UNPAINTED
EASY GLUING SOLUTIONS
OUTSTANDING LOW SYSTEM COST
AESTHETICS GLOSS WELDABILITY
IN-MOULD VERY GOOD
DECORATION PROCESSABILITY
LOW DENSITY
EXCELLENT OPTIMAL SCRATCH
WEATHERING RESISTANCE
EXCELLENT DIMENSIONAL STABILITY
HOT STAMPING



DISCOVER

DISCERNING FLEXIBILITY AND ATTRACTION

The advanced development engineer of a large Tier 1 manufacturer is considering the design concept for the next model of a global brand. The innovation behind styrenic specialties not only provides him with superior aesthetics, reduced weight and increased resistance to weather and ageing, but also the flexibility to choose between injection moulding or extrusion. So styrenics provide him complete freedom of colour and design across all applications.

“WHY ARE STYRENIC SPECIALTY SOLUTIONS SO ATTRACTIVE TO
CONSUMERS, DESIGNERS AND MANUFACTURERS?”



GREATER INSPIRATION FOR GROWING APPLICATIONS

Whether for rearview mirrors or instrument panels, front grills or rear lights, automotive applications based on styrenics solutions are growing. It is not just superior performance and physical durability that make styrenics attractive for manufacturers all along the automotive value chain. There's also easy processability and low density. And, of course, the exceptionally compelling aesthetics: styrenics based products look better.

Styrenics address two of the attributes most desirable to automotive OEMs and suppliers: appearance and low weight. The depth and breadth of the aesthetic and design possibilities of styrenics make them ever more interesting to engineers and designers alike. Here is a sampling:

AUTOMOTIVE STYRENIC APPLICATIONS INSIDE & OUT

INTERIOR APPLICATIONS

DOOR PANELS

- high impact resistance, high heat resistance, excellent flow, low emissions and dimensional stability

CENTER CONSOLES

- adaptable to specific requirements, such as high heat, high impact and high-level aesthetics

INSTRUMENTAL PANEL COMPONENTS

- high impact resistance, high surface quality aesthetics, outstanding acoustic properties, and high dimensional stability

INTERIOR UPPER AND LOWER TRIMS

- high quality, low emissions, high impact, high heat, and UV resistance
- excellent flow for high surface quality appearance

SEAT COVERS

- high impact resistance, enhanced UV resistance and colour fastness

EXTERIOR APPLICATIONS

SPOILERS

- high impact resistance, high heat resistance, enhanced UV performance

ELECTROPLATED TRIMS

- very high impact strength and high flowability

FRONT GRILLS AND REARVIEW MIRRORS

- colour retention, high impact, aesthetics and processability
- superior UV-stabilisation for unpainted mirror components and excellent paint adhesion for painted mirror housings

REAR AND FRONT LIGHTS

- highest heat-resistant ABS on the market, platable, excellent flow for high surface quality

FASCIA AND MOUNTING BRACKETS

- high impact resistance, high heat resistance

INSTRUMENT PANEL COMPONENTS

- painted HH ABS (Novodur®)
- ABS/PA or ASA/PA (Terblend® N/S)

DOOR PANELS

- HH ABS (Novodur®)

LOUD-SPEAKER GRILLS

- ABS/PA or ASA/PA (Terblend® N/S)

SEAT COVERS

- painted HH ABS (Novodur®)
- ABS/PA or ASA/PA (Terblend® N/S)

REAR SPOILERS

- painted HH ABS (Novodur®)
- ASA (Luran® S)
- ASA/PC (Luran® SC)

CENTER CONSOLES

- HH ABS (Novodur®)
- ABS/PA or ASA/PA (Terblend® N/S)
- electroplated ABS (Novodur®)

MIRROR TRIANGLES

- high gloss HH-120 (Luran®)
- ASA (Luran® S)

REAR VIEW MIRRORS

- ASA (Luran® S)
- painted ABS (Novodur®)

FRONT LIGHTS

- HH ABS (Novodur®)

FRONT GRILLS

- painted HH ABS (Novodur®)
- ASA (Luran® S)
- ASA/PC (Luran® SC)

REAR LIGHT HOUSINGS

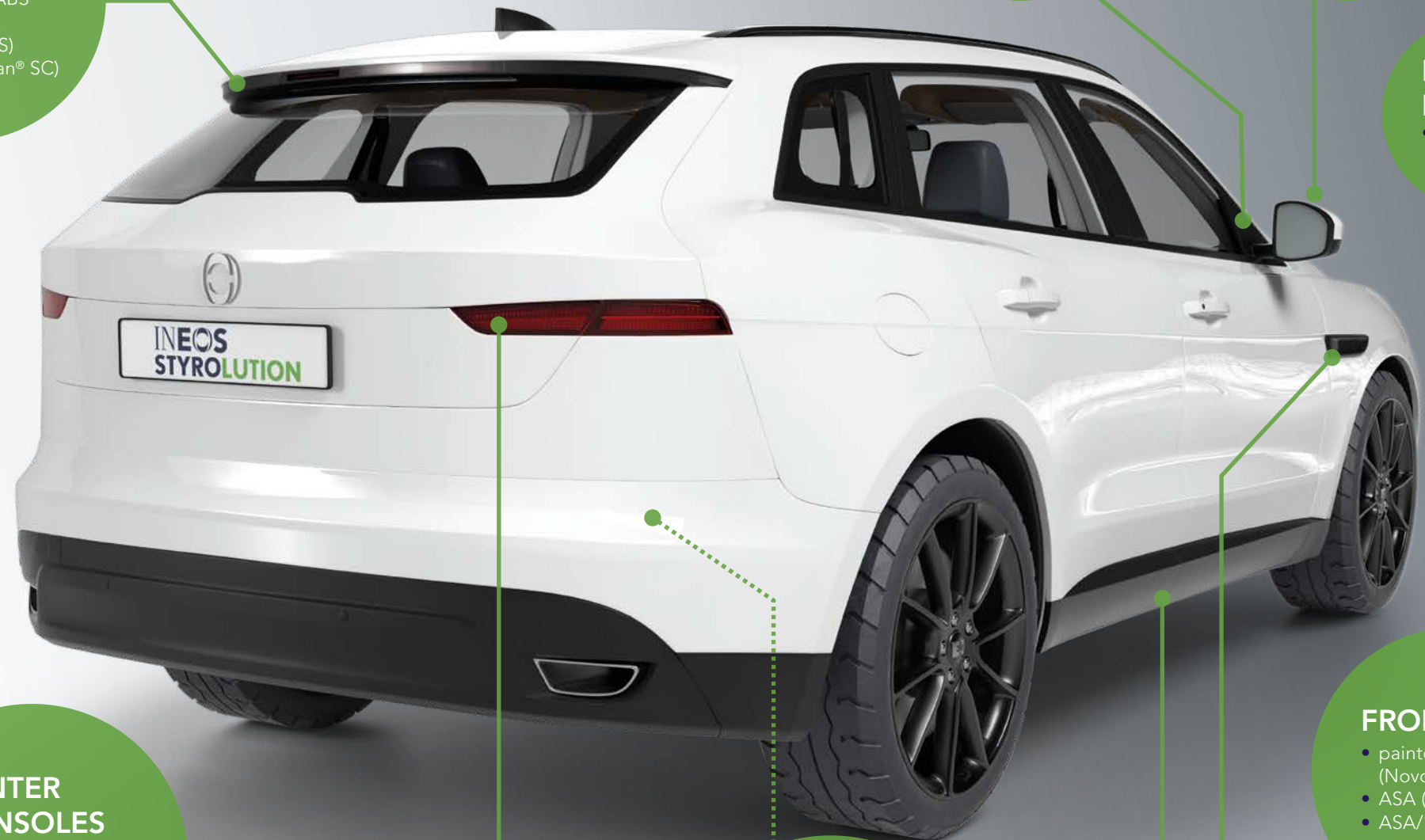
- HH ABS (Novodur®)
- ASA (Luran® S)

BUMPER AND FASCIA BRACKETS

- ASA (Luran® S)
- ASA/PC (Luran® SC)
- HH ABS (Novodur®)

EXTERIOR TRIMS

- electroplated ABS (Novodur®)
- ASA (Luran® S)
- painted HH ABS (Novodur®)





PERFORM

ADDING VALUE FOR WORLD- CLASS SOLUTIONS

The Head of Design at a major global car company relies on INEOS Styrolution because she knows she can count on them as a trusted global supplier with a large portfolio and broad expertise to help her balance optics, function and costs across a wide range of applications and regional demands. With INEOS Styrolution she gets solutions to launch new global platforms with local material supplies, while also addressing regional design trends.

“HOW DOES INEOS STYROLUTION FACILITATE THE DEVELOPMENT AND IMPLEMENTATION OF INNOVATIVE AUTOMOTIVE SOLUTIONS?”

HOW INEOS STYROLUTION SERVES YOU

AUTOMOTIVE
PROJECT
MANAGEMENT
SUPPORT

SOLUTIONS THAT KEEP YOU
ON TRACK – SERVICE THAT
KEEPS YOU ON TIME

INEOS Styrolution invests its success in the success of its customers. The company provides customers with the broadest styrenic specialty product portfolio in the industry, backed by the resources of R&D, consistent reliability and sustainability, as well as a dedicated, experienced sales and technical team within each region.

To grow customer value, INEOS Styrolution not only offers exceptional global presence, but also innovative technology. This includes cutting-edge competence in plastic design, colour and new applications. This ranges from an expanding array of lower cost alternatives for painted plastic parts to a constant effort to improve the feel and visual appearance of all surfaces, with a unique emphasis on light, stable and pre-coloured materials for interior and exterior applications.

DEDICATED
QUALITY

and global technical teams

SECURITY
OF SUPPLY

long-term and global availability

DESIGN
SUPPORT

for part and injection moulding tools

ENHANCED
QUALITY
CONTROL
PROCESSES

ISO 9001

COLOUR
DEVELOPMENT

and release at automotive OEMs (vast colour database and in-depth knowledge of colourants and their compliance requirements when used in automotive applications)

SPECIFICATION
OF MATERIAL

at OEMs

SECONDARY
OPERATION
EXPERTISE

(painting, gluing, in-mould decoration, electroplating)

GLOBAL
REGULATORY
SUPPORT

IMDS

TECHNICAL
DEVELOPMENTAL
SUPPORT

(processing, design, CAE simulation)

INNOVATIVE MATERIALS

INEOS Styrolution specialty product innovations include:

- **Novodur® Ultra 4255** – for interior and exterior applications, such as door panels, consoles, lower seat trims and glove box doors and frames, combines high impact strength at room as well as at low temperature, 100 % ductility at -30 °C, high heat resistance and a best-in-class flowability.
- **Novodur® Ultra 4140PG** – for electroplated decorative parts – a styrenic blend and the newest member of our family of electroplatable product portfolio which includes Novodur P2MC. It provides exceptional heat and impact resistance for both interior and exterior applications, and can be conveniently processed on standard electroplating production lines.
- **Terblend® S SG-02EF** – for interior applications, such as air vents – a low-emission and 8% glass-fibre reinforced grade with superior heat resistance and dimensional stability, provides a cost-effective matte surface finish that doesn't require painting.

INEOS STYROLUTION PRODUCTS FOR AUTOMOTIVE

ISO Standards

			ABS		ABS HIGH HEAT									ABS/PC HIGH HEAT AND HIGH IMPACT			ABS AND ABS/PC ELECTROPLATABLE GRADES		ASA AND ASA/PC								ABS/PA AND ASA/PA					SAN HIGH HEAT
Typical values for uncoloured products at 23 °C	Test method	Unit	TERLURAN® GP-22	NOVODUR® P2H-AT	NOVODUR® H605	NOVODUR® H701	NOVODUR® H702	NOVODUR® HH-106	NOVODUR® HH-112	NOVODUR® H802	NOVODUR® HH-106 G1	NOVODUR® HH-106 G2	NOVODUR® P2HGV	NOVODUR® H801	NOVODUR® ULTRA 4105	NOVODUR® ULTRA 4255	NOVODUR® P2MC	NOVODUR® ULTRA 4140PG	LURAN® S 777K	LURAN® S 778T	LURAN® S 797S	LURAN® S KR2861/1C	LURAN® S KR2863C	LURAN® S KR2864C	LURAN® S KR2866C	TERBLEND® N NM-21EF	TERBLEND® N NG-02EF	TERBLEND® S NM-31	TERBLEND® S SG-02EF	LURAN® HH-120		
PROPERTIES																																
Polymer abbreviations	-	-	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS GF4	ABS GF8	ABS GF16	ABS/PC	ABS/PC	ABS/PC	ABS	ABS/PC	ASA	ASA	ASA	ASA/PC	ASA/PC	ASA/PC	ASA/PC	ABS/PA	ABS/PA 8% GF	ASA/PA	ASA/PA 8% GF	AMSAN		
Density	ISO 1183	kg/m³	1040	1050	1050	1040	1040	1050	1050	1050	1070	1100	1160	1070	1070	1100	1030	1070	1070	1070	1070	1150	1160	1150	1110	1070	1120	1070	1140	1080		
Moisture absorption, equilibrium 23°C/50% r.H.	ISO 62	%	0.22	-	-	-	-	0.25	0.25	-	-	-	-	-	-	-	-	-	0.35	0.35	0.35	0.25	0.16	0.18	0.25	1.30	1.10	1.50	1.40	0.3		
PROCESSING																																
Melt Volume Rate MVR 220°C/10 kg	ISO 1133	cm³/10min	19	37	26	8	14	7	5.5	9.5	-	3.5	3	10.5	9	17 (260/5)	25	9	15	5	5.5	14 (260/5)	20 (260/5)	25 (260/5)	11 (260/5)	65 (240/10)	40 (240/10)	60 (240/10)	45 (240/10)	7		
Melt temperature range	-	°C	220 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	230 - 260	240 - 260	240 - 260	250 - 270	230 - 260	240 - 260	240 - 280	240 - 280	240 - 280	260 - 300	260 - 300	260 - 300	260 - 300	240 - 270	240 - 270	240 - 270	240 - 270	220 - 270		
Mould temperature range	-	°C	30 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	60 - 80	40 - 80	40 - 80	40 - 80	60 - 90	60 - 90	60 - 90	60 - 90	60 - 80	60 - 80	60 - 80	60 - 80	40 - 80		
Mould shrinkage range	ISO 294-4	%	0.4 - 0.7	0.4 - 0.7	0.4 - 0.6	0.5 - 0.8	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.4 - 0.6	0.2 - 0.4	0.4 - 0.7	0.5 - 0.8	0.55 - 0.75	0.2 - 0.7	0.5 - 0.8	0.4 - 0.7	0.4 - 0.7	0.4 - 0.7	0.3 - 0.7	0.3 - 0.7	0.3 - 0.7	0.3 - 0.7	0.7 - 0.9	0.5 - 0.8	0.7 - 0.9	0.5 - 0.8	0.3 - 0.7		
MECHANICAL PROPERTIES																																
Tensile modulus	ISO 527	MPa	2300	2500	2400	2100	2500	2400	2700	2700	3000	3600	5500	2400	2000	2100	2200	2100	2300	2500	2000	2300	2500	2600	2600	2100	3100	2100	3300	3900		
Tensile stress at yield	ISO 527	MPa	45	44	47	41	46	51	58	51	51	58	-	49	45	47	40	46	48	54	42	53	62	63	60	45	55	50	65	79		
Tensile strain at yield	ISO 527	%	2.6	2.1	2.5	2.7	2.6	3.0	3.1	2.8	3.0	-	-	3.0	3.7	4.1	2.4	3.5	3.3	3.4	3.5	4.9	4.9	4.6	3.4	3.1	3.0	3.3	3.2	-		
Tensile strain at break	ISO 527	%	10	>15	>15	>15	>15	-	-	>15	-	3	2	>15	>15	>30	>15	>15	9	8	11	>50	>50	>50	15	25	6	25	4.4	3.0		
Flexural strength	ISO 178	MPa	65	70	72	65	73	72	81	80	72	97	101	77	70	70	62	72	70	80	-	78	93	100	90	65	85	65	100	135		
Flexural modulus	ISO 178	MPa	-	2400	2400	2100	2400	2400	2700	2700	-	-	5400	2300	2000	2400	2100	2100	-	-	-	-	-	-	-	-	2000	2800	2000	2400	3900	
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m²	22	18	15	22	19	16	11	18	12	6	6	35	40	55	25	41	17	15	40	65	70	60	40	70	11	70	10	2.0		
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m²	8	8	7	12	9	7	6	8	6	4	5	14	32	55	16	33	4	4	9	20	17	11	9	12	6	9	5	-		
THERMAL PROPERTIES																																
Heat deflection temperature; HDT A (1.80 MPa) (annealed 4h 80°C)	ISO 75	°C	94	93	98	99	99	99	102	101	99	99	102	99	99	103	94	99	97	103	95	106	109	105	102	86	97	87	98	104		
Heat deflection temperature; HDT B (0.45 MPa) (annealed 4h 80°C)	ISO 75	°C	99	97	102	105	104	107	110	107	107	108	106	106	108	116	96	108	101	106	100	125	130	124	113	98	171	97	174	110		
Vicat softening temperature VST/B/50 (50 N, 50°K/h)	ISO 306	°C	96	98	102	105	104	106	111	108	107	107	105	106	107	110	96	106	97	104	90	120	130	120	110	110	118	110	128	120		

DISCOVER THE VERSATILITY
OF AUTOMOTIVE APPLICATIONS



INEOS STYROLUTION GRADES PRODUCED
AND AVAILABLE IN ASIA-PACIFIC

			ABS		ABS MEDIUM HEAT	ABS HIGH HEAT	ABS ELECTRO- PLATABLE
Typical values for uncoloured products at 23 °C	Test method	Unit	NOVODUR® 550	ABSOLAC® 120HR	ABSOLAC® XT04M	ABSOLAC® E502 BML	ABSOLAC® 200EP
PROPERTIES							
Polymer abbreviations	-	-	ABS	ABS	ABS	ABS	ABS
Density	ISO 1183	kg/m³	1040	1040	1040	1040	1040
PROCESSING							
Melt Volume Rate MVR 220°C/10 kg	ISO 1133	cm³/10min	3.0	-	-	-	-
Melt flow rate 220°C/10 kg	ISO 1133	g/10 min	-	21	10	2.5	20
Mould shrinkage range	ISO 294-4	%	-	0.4 - 0.6	0.4 - 0.6	0.4 - 0.6	0.4 - 0.6
MECHANICAL PROPERTIES							
Tensile modulus	ISO 527	MPa	2100	2600	2800	2550	2600
Tensile stress at yield	ISO 527	MPa	40	48	53	48	45
Tensile strain at break	ISO 527	%	28	-	-	-	-
Flexural strength	ISO 178	MPa	60	65	75	73	63
Flexural modulus	ISO 178	MPa	1500	2400	2800	2250	2100
Izod notched impact strength (at 1/4 thickness)	ASTM D 256	kJ/m²	25	24	17	Min 37	30
Izod notched impact strength (at 1/8 thickness)	ASTM D 256	kJ/m²	13	28	22	45	35
THERMAL PROPERTIES							
Heat deflection temperature; HDT A (1.80 MPa)	ISO 75	°C	99	95	98	100	93
Heat deflection temperature; HDT B (0.45 MPa)	ISO 75	°C	108	99	102	-	95
Vicat softening temperature VST/B/50 (50 N, 50°K/h)	ISO 306	°C	101	-	-	-	-
Vicat softening temperature, B/2 (120 °C/h, 50 N)	ASTM D 1525	°C	-	99	102	105	95

INEOS STYROLUTION GRADES PRODUCED
AND AVAILABLE IN AMERICAS

			ABS	ABS MEDIUM HEAT		ABS HIGH HEAT	ABS PLATEABLE	ABS HIGH IMPACT
Typical values for uncoloured products at 23 °C	Test method	Unit	LUSTRAN® LGA	LUSTRAN® ELITE 1827	NOVODUR® MH-102	LUSTRAN® ELITE 1891	LUSTRAN® PG298	LUSTRAN® 446
PROPERTIES								
Polymer abbreviations	-	-	ABS	ABS	ABS	ABS	ABS	ABS
Density	ISO 1183	kg/m³	1050	1050	1050	1050	1060	-
Moisture absorption, equilibrium 23°C/50% r.H.	ISO 62	%	-	-	0.3	-	-	-
PROCESSING								
Melt Volume Rate MVR 220°C/10 kg	ISO 1133	cm³/10min	-	-	6	-	-	-
Melt flow rate 220°C/10 kg	ISO 1133	g/10 min	21	13	-	7	19	13
Melt flow rate 230°C/3.8 kg	ISO 1133	g/10 min	7	4	-	2	5	4
Melt temperature range	-	°F	245 - 265	250 - 270	464 - 536	250 - 270	260 - 280	475 - 510
Mould temperature range	-	°F	45 - 65	50 - 70	104 - 176	50 - 70	50 - 60	110 - 150
MECHANICAL PROPERTIES								
Tensile modulus	ISO 527	MPa	2200	2260	2800	2200	2770	2480
Tensile stress at yield	ISO 527	MPa	39	42	53	45	43	44
Tensile strain at yield	ISO 527	%	3.2	2.8	3.2	2.8	2.6	3
Tensile strain at break	ISO 527	%	-	-	13	-	-	-
Flexural strength	ISO 178	MPa	72	70	82	70	79	69
Flexural modulus	ISO 178	MPa	2430	2350	2700	2270	2730	2540
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m²	18	18	17	15	18	25
Charpy notched impact strength (-30°C)	ISO 179/1eA	kJ/m²	9.2	9.5	8	9	6	6
THERMAL PROPERTIES								
Heat deflection temperature; HDT A (1.80 MPa)	ISO 75	°C	95	99	100	103	94	100
Heat deflection temperature; HDT B (0.45 MPa)	ISO 75	°C	101	105	103	109	100	103
Vicat softening temperature VST/B/50 (50 N, 50°K/h)	ISO 306	°C	96	101	103	104	98	97



COLLABORATE

COLLABORATING
FOR LASTING
INNOVATION

After launching a company to mould plastic parts for the automotive industry, rapid growth in Asian OEMs helped a young entrepreneur's business move up the value chain to parts manufacturer. Now he is producing sophisticated vehicle systems thanks to collaborative innovation with INEOS Styrolution. Together they were able to identify a gap in the supply chain for lightweight side panels with premium aesthetics, exceptional performance and the flexibility of 2,500 colour options. And that's only the beginning of his success story.

"WHY DO MANUFACTURERS PREFER INEOS STYROLUTION
TO OTHER STYRENIC SOLUTION PROVIDERS?"

A PIONEER GOES FURTHER WITH A RELIABLE PARTNER

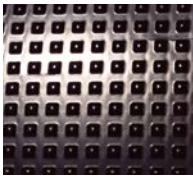
INEOS Styrolution offers global assistance with a personal touch. Whenever specialised innovation is required, INEOS Styrolution works hand-in-hand with its customers to help them gain a competitive advantage – through best-in-class service and customised solutions.

With first-rate technology, leading R&D skills and strong intellectual property and patent positions, INEOS Styrolution is uniquely equipped to ensure that new applications find the right formulation for success. To enable best possible quality and process efficiency, INEOS Styrolution provides testing and technical support in the processing, design and computer simulation phases.

Thanks to its broad experience and processing expertise, INEOS Styrolution is an attractive partner for developing new products, technologies and solutions for automotive customers.

TURNING IDEAS INTO PROFIT

Each new product or new application begins with an idea. Together with INEOS Styrolution, customers define how those ideas are transformed into real, innovative and practical items for use in the automotive sector.



TEXTURE

Styrenics are widely appreciated for their attractive aesthetics. From glossy to smooth to easy-grip/ no-slip surfaces: INEOS Styrolution helps ensure the look, feel and safety are all premium.



SHAPE

Tough, flexible, thin, robust: INEOS Styrolution helps customers find the right blend for the size and requirements of their application.



COLOUR

Customers can choose from over 2,500 existing pre-tested colours or use the INEOS Styrolution Color Excellence Center (CEC) to customise any colour and confirm its performance.

WHY COLLABORATING WITH INEOS STYROLUTION IS DIFFERENT: STEP BY STEP

1

An automotive OEM or a large Tier 1 customer faces a challenge or has a wish and communicates this to INEOS Styrolution.

2

INEOS Styrolution listens, reflects, and asks for specific application, regulatory requirements.

3

INEOS Styrolution draws on its wide expertise to present the customer with the optimal mix of existing formulations and promising fields of development.

4

INEOS Styrolution delivers customised products for customer sampling and test evaluation according to part specifications.

5

Customer and INEOS Styrolution work in collaborative innovation to finalise plans to create the new application.

6

Once validated by the OEM, the project for a new vehicle platform can begin.



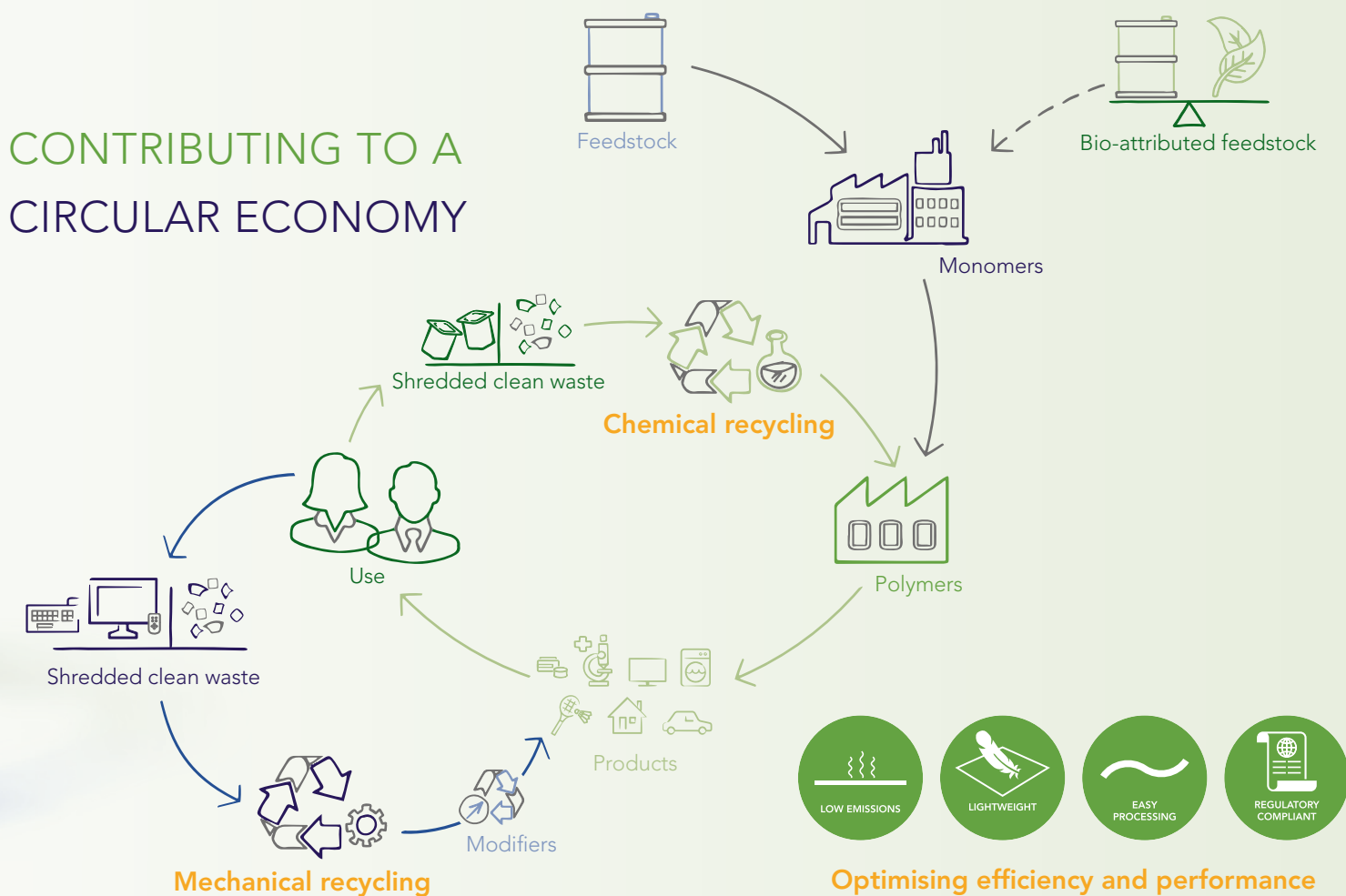
STYRENICS. MADE FOR RECYCLING.

Styrenics are one of the most versatile materials in the 21st century, and have revolutionised the way we live today. Our products have become an indispensable part of consumers' everyday lives and provide solutions to societal challenges such as climate change, resource scarcity, urbanisation, rising living standards and population growth.

The solutions styrenics products offer include extending food shelf life thereby reducing food waste, while also providing lightweight solutions for the automotive industry leading to lower fuel consumption.

This new ECO range not only complements INEOS Styrolution's existing strong portfolio of styrenics standard products and specialties, but also matches the performance of our existing portfolio.

CONTRIBUTING TO A CIRCULAR ECONOMY



INEOS
STYROLUTION
ECO

By offering styrenics solutions that deliver strong, sustainable performance, we want to ensure that our customers' businesses and end consumers' choices become more sustainable.

To read more about our ECO family of solutions, please visit:
www.styrolution-eco.com.

To read more about our actions and performance on sustainability visit:
www.ineos-styrolution.com/sustainability

SM: styrene monomer
PS: polystyrene
ABS: acrylonitrile butadiene styrene
Specialties: ABS/ASA, ASA, SAN, AMSAN, SBC, SMMA



Green colour showing the relevant automotive sites.

⁽¹⁾ INEOS Styrolution acts as exclusive distributor for the INEOS ABS plant in Addyston, Ohio.

⁽²⁾ New plant – expected to be operational by 2021.

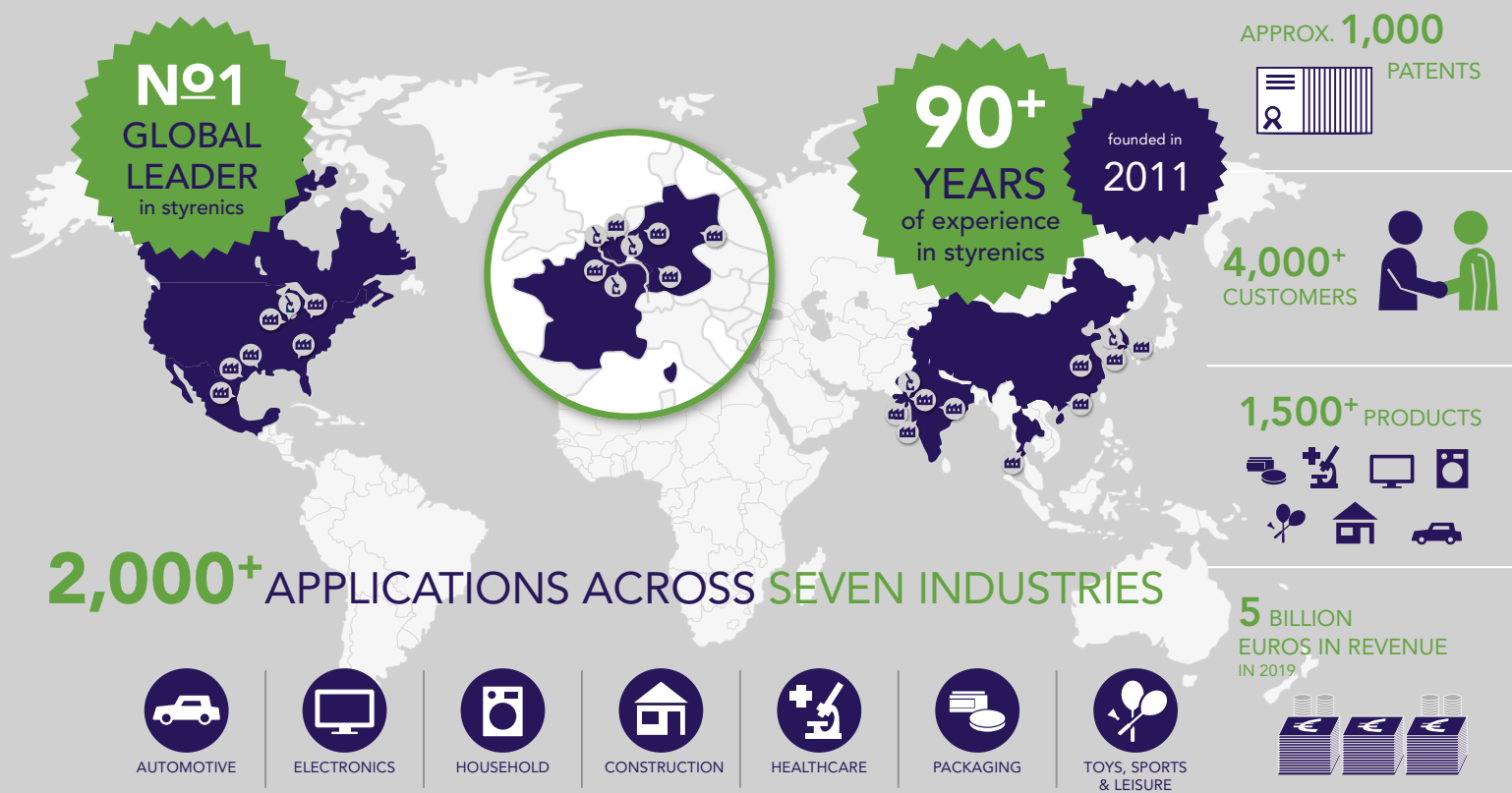
GLOBAL REACH AND PROXIMITY TO CUSTOMER MARKETS

INEOS Styrolution is the only global company focused solely on styrenics with a broad product portfolio and proven customised approach to co-development. INEOS Styrolution delivers innovation and professional support with an experienced, personal touch.

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.

 **3,600** EMPLOYEES |  **10** COUNTRIES | **20**  PRODUCTION SITES |  **6** R&D CENTERS |  **24** sales offices



INEOS STYROLUTION SERVES THE AUTOMOTIVE INDUSTRY AROUND THE WORLD WITH THE LARGEST PORTFOLIO OF STYRENICS SPECIALTIES, FUELED BY INNOVATION.

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!

www.ineos-styrolution.com/industry/automotive.html

LOCAL REPRESENTATIVES

EUROPE, MIDDLE EAST AND AFRICA

INEOS Styrolution Group GmbH
Mainzer Landstrasse 50
60325 Frankfurt am Main
Germany

INSTY.info@ineos.com

AMERICAS

INEOS Styrolution America LLC
4245 Meridian Parkway, Suite 151
Aurora, IL 60504
USA

INSTY.americas@ineos.com
+1 866 890 6354

ASIA-PACIFIC

INEOS Styrolution APAC Pte Ltd.
111 Somerset Road, #14-16 to 21
TripleOne Somerset
Singapore 238164

INSTY.asia@ineos.com
+82 2 6322 7775

INEOS Styrolution Group GmbH

Global Headquarters

Mainzer Landstrasse 50

60325 Frankfurt am Main, Germany

ineos-styrolution.com

PLEASE NOTE

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. (March 2020)