



ELIX
POLYMERS

A member of
Sinochem
International

High Performance ABS Products





ELIX Polymers is a leading manufacturer of ABS (Acrylonitrile-Butadiene-Styrene) resins and derivatives in Europe.

Operating from its head office in Tarragona, Spain, and with sales support teams in all key markets, the company is a specialist provider of tailor-made solutions for high quality thermoplastics applications. With more than 40 years track record, ELIX Polymers is an expert in ABS polymers, and it has the resources, the expertise and the experience to create value for its customers through highly individual solutions.

Compromise



Certifications



Memberships





ELIX Polymers has strong technical expertise in product formulation and color development and offers a range of high performance products that meet the stringent requirements of the Automotive, Healthcare, Appliances, Electrical and Electronic and other industries.

In addition, the company has ISO 9001, ISO 14001 and ISO 50001 certifications and fully underwrites the chemical industry's responsibilities.

ELIX Polymers' vision is to be the benchmark global leader in the specific market of the thermoplastics field, offering as customer-oriented company, personalized services and a wide portfolio of products. Upholding their commitment to the environmental sustainability and fostering the professional development of their employees.

Their key factors are continuous improvement, innovation, state-of-the-art technology, a high level of experience in the sales and technical marketing departments, as well as their team of professionals who make up the human capital of ELIX Polymers.

ELIX ABS

Grades		Typical basic properties					
		Melt volume-flow rate 220°C/10kg *260°C/5kg cm ³ /10' ISO 1133	Tensile modulus 1 mm/min MPa ISO 527-1,-2	Izod notched impact strength 23°C kJ/m ² ISO 180-1A	Izod notched impact strength -30°C kJ/m ² ISO 180-1A	Vicat 50N, 50°C/h °C ISO 306	
General Purpose	P2H-AT	37	2500	16	7	98	
	P2M-AT	22	2300	23	11	98	
	M220	32	2300	18	12	97	
Specialties	M203	31	2400	15	7	99	
	P3H-AT	12	2500	18	10	96	
	P2M-V	18	2300	23	11	97	
	M201AS	18	2400	20	10	98	
	M305	12	2300	21	11	99	
	118HF	57	2260	14	7	98	
	M116GF	15	5750	7	-	106	
	M545TF	31	2400	15	7	99	
High Heat	H604	8	2400	21	12	102	
	H605	25	2400	17	7	101	
	HH 3105	16	2150	18	11	103	
	HH 3110	12	2300	15	11	108	
	HH 3114	9	2200	13	8	112	
	H801	9	2400	30	12	105	
	Ultra 4105	14*	2000	42	34	106	
	Ultra HH 4115 HI	14*	2000	58	41	113	
Electroplating	P2MC	25	2200	23	12	95	
	HH P2MC	22	2210	21	12	103	
	Ultra HH 4115 PG	14*	2000	58	41	113	
Medical	M203FC	31	2400	15	7	99	
	M205FC	20	2550	15	7	98	
Extrusion	E401	5	1900	30	19	99	
	E310	5	2200	21	11	100	

	Major Benefits	Typical Applications	Markets
	High flow and gloss with antistatic additive	Washing machine panel, kitchen & coffee machines, electrical switches, distribution boards, power sets, cosmetic compact	  
	Medium impact and high gloss with antistatic additive	Power tool boxes	 
	Good flow characteristic, grade designed for self coloring	Toys, grade for self coloring	 
	High gloss, high flow	Washing machine panel, electrical switches, distribution boards, power sets	 
	Chemical resistance, dynamic loading	Lawnmowers, dishwasher panel, lids for electrical accumulators, power sets	  
	Low emission, medium impact	Center console, door components, instrument panel parts	
	Chemical resistance, high gloss, medium impact	Telephones, electronic boards, housings, refrigerator door handles	  
	Dimensional accuracy, dynamic loading capacity	Smart cards	
	Very high flow ABS, high gloss surface with antistatic additive	Housing big parts	  
	Excellent balance of impact strength, rigidity and flowability, good dimensional stability, high rigidity	Semi-structural Automotive interior parts, exterior Automotive pillars, air conditioner fan	 
	High gloss, high flowability	Food contact applications, toys, cosmetics packaging	  
	Low emission, medium heat resistance, chemical resistance	Mirror housing, door components, instrument panel parts, pipes & fittings	 
	Low emission, medium heat resistance, high flowability	Radiator grille, door components, enclosures for electric devices	  
	Low emission, high heat resistance, high flowability, good balance of impact strength and flowability	Mirror housing, spoiler, radiator grille, center console trim, door components, instrument panel parts, distribution assemblies.	 
	Low emission and odor, very high heat resistance, increased flow, good processability behavior	Rear light housing, spoiler, center console trim, door components, instrument panel parts, connectors	 
	Low emission, extreme heat resistance	Rear light housing, sun visor, upper instrument panel parts, fans and ventilation systems	 
	Low emission, high impact (PC modified)	Radiator grille, rear light housing, tailgate cover, door components, instrument panel parts	
	Low emission, very high impact (PC modified)	Radiator grille, tailgate cover, glove box, instrument panel parts	
	Low emission, high heat resistance, extreme high impact resistance (PC modified)	Radiator grille, tailgate cover, pillars, instrument panel parts, seating parts, center console trim, door components, roof consoles	
	High galvano quality for class A surfaces, high flowability, electroplating grade	Hand showers & faucets, cosmetic compacts, decorative interior parts, logos, profiles, radiator grille, tailgate handles	 
	High quality for class A surfaces, high heat resistance, high flowability	Decorative interior parts, profiles, radiator grille, tailgate handles	
	High quality for class A surfaces, very high heat resistance, extreme high impact resistance (PC modified)	Decorative interior parts, radiator grille	
	High gloss, high flow	Respiratory devices, auto injection devices, medical housing.	
	High gloss, high rigidity	Infusion System	
	High Impact, good surface appearance	Profiles and Sheets for thermoforming, refrigerator panel	 
	High impact resistance, high gloss surfaces, good chemical resistance	Profiles and Sheets for thermoforming, refrigerator panel	



ELIX PC/ABS

Grades	Typical Basic Properties				
	Melt volume-Flow Rate 260°C/5kg cm ³ /10' ISO 1133	Tensile Modulus 1 mm/min MPa ISO 527-1,-2	Izod Notched Impact Strength 23°C kJ/m ² ISO 180-1A	Izod Notched Impact Strength -30°C kJ/m ² ISO 180-1A	Vicat 120N, 120°C/h °C ISO 306
5120	21	2320	51	39	120
5130	21	2270	53	39	130

Grades	Major Benefits	Typical Applications	Markets
5120	Low emission, high heat resistance, very high impact, high flowability, Extreme high impact up to - 40°, excellent processability and paintability"	Radiator grille, pillars, instrument panel parts, seating parts, center console trim, door components, small household, electrical switches, distribution boards, power sets.	
5130	Low emission, extreme heat resistance, very high impact, high flowability	Rear light housing, pillars, instrument panel parts, coffee machine, electrical switches, distribution boards, power sets.	

ELIX Polymer Modifiers

Grades		Typical Basic Properties			
		Butadiene Content (%) in polymer	Acrylonitrile Content (%) in polymer	Melt Volumer-Flow Rate 220- 10 Kg-cm3/10'	Physical form
ABS	158I	54-58			Powder
SAN	230G		26,5-28,5	90-110	Pellets
	250G		23,0-24,5	35-45	Pellets
	260G		26,5-28,5	50-61	Pellets
	280G		23,0-24,5	30-35	Pellets

Grades		Major Benefits	Typical Applications
ABS	158I	Impact modifier, Superior low temperature performance.	Used to improve toughness of engineering thermoplastics and PVC.
SAN	230G	Improved flowability for ABS grades; Excellent balance of mechanical properties, process ability and aesthetics; Easy dispersion for pigments & colorants.	Used as base resin in color concentrates; Suitable for blending purposes.
	250G	Improved flowability for ABS grades; Excellent balance of mechanical properties, process ability and aesthetics; Easy dispersion for pigments & colorants.	Used as base resin in color concentrates; Can be blended with High Rubber Modifiers (ELIX™ 100 series) to manufacture or modify properties profile of ABS resin and blends containing Polycarbonate.
	260G	Improved flowability for ABS grades; Excellent balance of mechanical properties, process ability and aesthetics; Easy dispersion for pigments & colorants.	Used as base resin in color concentrates; Can be blended with High Rubber Modifiers (ELIX™ 100 series) to manufacture or modify properties profile of ABS resin and blends containing Polycarbonate.
	280G	Improves melt strength and melt stability in PVC compositions and ABS resin; Allows superior dynamic loading performance for ABS resin.	Used to improve dimensional and thermal stability in PVC extruded applications; Can be blended with High Rubber Modifiers (ELIX™ 100 series) to manufacture or modify properties profile of ABS resin; Used as Intermediate for polymer blends.

Cadon

Grades	Typical Basic Properties*				
	Melt Volume-Flow Rate 220°C/10kg cm ³ /10' ISO 1133	Tensile Modulus 1 mm/min MPa ISO 527-1,-2	Izod Notched Impact Strength 23°C kJ/m ² ISO 180-1A	Izod Notched Impact Strength -30°C kJ/m ² ISO 180-1A	Vicat 50N, 50°C/h °C ISO 306
CG28	14	1600	28	21	93

Grades	Major Benefits	Typical Applications
CG28	Very high toughness, medium flow, excellent impact and fracture resistance at low temperatures. Grade designed for self-colouring	Used to improve toughness of engineering thermoplastics and PVC.

Technical Information Processing

Drying Conditions

Recommended drying conditions for **ELIX ABS, PC/ABS** and **CADON** grades

ELIX Grade	Drying Temperature (°C)	Permitted Residual Moisture Content (% weight)	Drying Time (h)		
			Circulation Dryer (50% Fresh air)	Fresh Air Dryer (High speed)	Dried Air System
ELIX ABS CADON	80	<0,15	4 – 6	3 – 4	2 – 3
ELIX Ultra ELIX ABS H801 ELIX PC/ABS	90	<0,05	4 – 8	3 – 4	2 – 4

For process parameters consult the *ELIX Injection Moulding Guideline* (available in the corporate web site)

Injection Conditions

ELIX Grade	Melt Temperature (°C)	Mould Temperature (°C)	Processing Temperature (°C)			
			Feeding Section	Metering Section	Compression Section	Nozzle
ELIX ABS CADON	230-260	60-80	180-210	210-240	215-240	220-240
ELIX HH ELIX Ultra ELIX ABS H801	240-260	60-80	200-220	220-240	230-260	240-260
ELIX PC/ABS	260-280	60-80	220-240	240-260	250-280	260-280



Services

Proximity to customers

We give equal importance to our proximity to the customers in terms of bespoke services, as well as to geographical proximity to our main markets.

Our sales team and our group of customer service representatives are in charge of managing all aspects related to proximity to the client, to guarantee a personalized approach. Furthermore, our secure web portal gives customers' online access to company information such as invoices, COA's, order status, new orders and other features.

In terms of geographic proximity, we operate a hub in Germany to optimize the distribution of our products, especially for our clients based in Northern Europe. This helps enable us to apply Lean/Just-in-Time principles to our production, thereby increasing our agility, flexibility and efficiency.

In the NAFTA Region (USA, Mexico, Canada) we operate through a logistic hub to support the resin distribution in the area.

Flexibility

Our corporate structure is designed to allow for additional technical/production capacity, affording our customers the flexibility and agility to cover possible changes in demand, and to help assure them a steady supply of our products. Through our cross-functional teams, we evaluate and continuously revise our lead times, with the aim of adapting to market needs.

In Europe, we also offer our clients a four-day lead time for standard materials and a four-week lead time for customized materials. We will work with you, if you have any special need for even shorter lead times.

Tailor-made services

We provide tailor-made solutions for both our products as well as services. Our team of experts called TASKFORCE is on hand, together with the Perfect Order Committee in tandem with other departments, work to satisfy the logistical needs of all our clients who need specific solutions related to procurement. The key here is for our sales, customer service, export/transport and production personnel to work efficiently as a team, exchanging the vital information that allows us to adapt to changing circumstances and best serve our clients.

We also leverage use of a Customer Relationship Management (CRM) database that enables us to register every type of interaction we have with our clients, which allows us to constantly improve our service.

Proactivity

One of our priorities is to collaborate closely with customers, suppliers and distributors in a way that enables us to establish long-term relationships to achieve positive synergies.

This makes it vital for us to keep abreast of external factors that could impact on all parties, such as those relating to climate, socio-economic, socio-demographic, political and security matters. Thanks to our Business Intelligence we have a 360° perspective and can offer relevant advice to our clients in a timely and effective manner to help them make the best possible business decisions.

Global Presence

We currently have commercial relationships with companies in 40 countries.

We offer customer service in a broad range of languages helping to simplify and improve the communications. Our extensive knowledge of international business allows us to advise our clients as regards the correct choice of Incoterms, thereby optimizing the management of safety and risk. Our four decades of experience enable us to offer worldwide service coverage individually, and to help each and every one of our clients to deal with their specific and differing sets of market factors, regardless of where they are based.

**ELIX SERVICES is subject to the customer's geographic location, the type of business and other factors to be evaluated individually.*

Technical Service

ELIX technical service comprises a multidisciplinary team with the capabilities and resources to support our customers during their product development processes. Whether it is a new colour development or selecting the right material to fulfill the complex regulations from the demanding markets and leading-edge applications. We have highly experienced professionals who specialize in those market segments where the ABS is present, such as Automotive, Appliances, Electrical & Electronic, Consumer Goods and Healthcare.

ELIX technical service activities include the following:

- New colour and product development.
- Technical support & troubleshooting.
- Product stewardship / IP management / technological surveillance.
- Specialized support for each market segment.
- Functional design of part by customers.
- Processing our products.
- Technical assistance for smart solutions.
- New business development.



Sustainability and Social Responsibility

Safety

Safety is the top priority at ELIX Polymers. We work actively to guarantee the safety of our production processes and the health of our employees, through prevention of occupational risks, implementing a safety culture through risk-analysis processes, mechanical integrity of our equipment and safe work practices. We always pay special attention on the strict compliance with all the legal requirements.

Health

ELIX is the leader in Europe in health compliance for ABS materials, where it fulfills all health and safety legal requirements (product hazard and risks). To achieve this, ELIX focus its efforts on health impact awareness (legal requirements such as REACH, EC directives, Plastics in Food Contact Applications, etc.).

Environment

At ELIX Polymers we assert our commitment to the environment – both in the types of friendly products we make, as well as in the manufacturing procedures used.

Our environmental protection strategy is based on two main aspects:

Eco Friendly Manufacturing

Over the years, ELIX's ABS manufacturing site has adapted its processes and technologies to the highest levels of the environmental performance. The state-of-the-art eco friendly technologies are operating in the production facility, through several actions as:

- Strong commitment on environmental regulations and certifications.
- Zero air residual and waste-water direct emissions.
- Life Cycle Assessment (LCA) and CO2 footprint reduction.
- Successful energy consumption reduction program.
- ELIX Polymers has implemented an Energy Management System standard ISO 50001: 2011: This system aims for continuous improvement in the use and consumption of energy, to achieve energy efficiency from responsible management, which reduces energy costs in a systematic and sustained way over time.

More Sustainable Products

We always take the environment into account when developing new products.

- Products based on non-renewably-sourced raw materials but which overall are more sustainable (e.g., environmentally friendly products with a lower CO2 footprint and which consume less energy to produce).

- Products based on renewably-sourced raw materials (e.g., new product portfolios that combine the best of ABS materials with natural fibers and bioplastics).

Social Responsibility

ELIX Polymers believes that promoting and integrating a Corporate Social Responsibility strategy will improve transparency and valuation in the markets to help the company to become a more trustworthy entity. This allows us to offer higher-quality products and services, increase their value and, above all, strengthen their contributions to society.

To do this, ELIX Polymers fully participates in the **Responsible Care Program**, which provides actions in different areas:

1. Ethics and values
2. Human resources
3. Environment
4. Supply chain
5. Customers
6. Local community
7. Communication and dialogue





ABS Manufacturer

Global presence, covered by extensive
ELIX Polymers' sales force, distributors
and agents



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For comprehensive technical information on our products, or processing advice please visit: www.elix-polymers.com

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