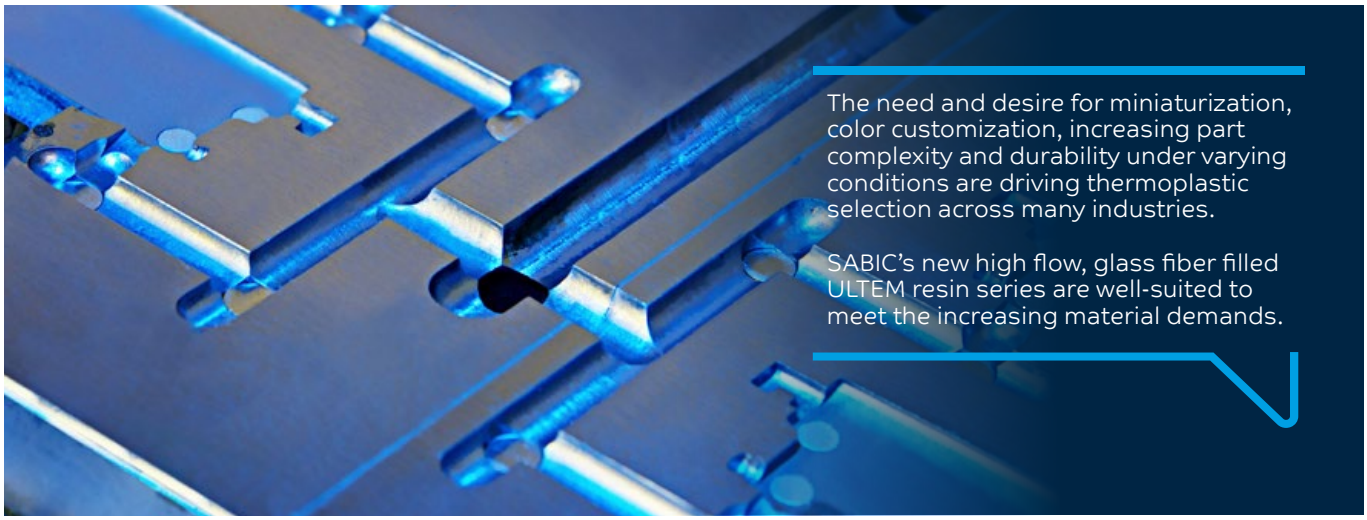
ULTEM™ 2120, 2220 AND 2320 COLORABLE GLASS-FILLED RESINS WELL-SUITED FOR COMPLEX AND THIN-WALLED PARTS



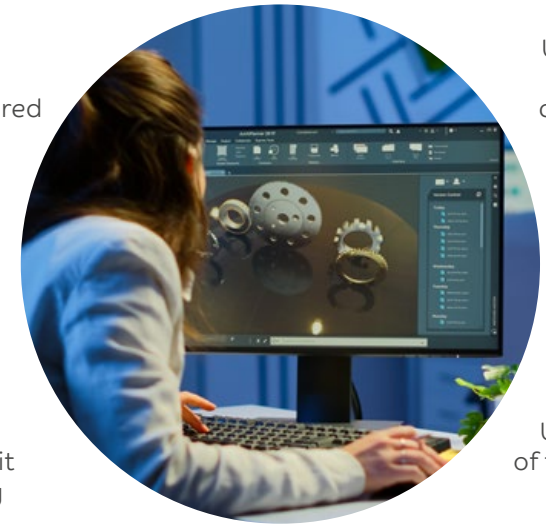
The need and desire for miniaturization, color customization, increasing part complexity and durability under varying conditions are driving thermoplastic selection across many industries.

SABIC's new high flow, glass fiber filled ULTEM resin series are well-suited to meet the increasing material demands.

High flow colorable ULTEM 2120, 2220, and 2320 resins (ULTEM 2x20 series) are the latest addition to our glass-filled portfolio. These resins help designers and producers address the increasingly challenging design and service life requirements of precision plastic components.

PRECISION COMPONENTS

ULTEM 2x20 resin's dimensional stability and high melt flow can enable the tight tolerances required to design and manufacture the latest precision components.



COMPLEX DESIGNS

ULTEM 2x20 resins are well-suited for molding into a variety of complex geometries providing the opportunity to consolidate parts to help lower system costs.

HIGH STRENGTH

ULTEM 2x20 resin's high mechanical performance makes it an excellent candidate for strong thin-walled assemblies.

LONG IN-SERVICE LIFE

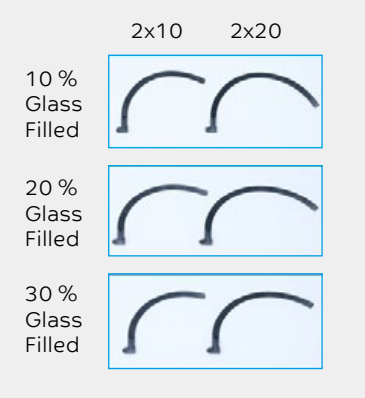
ULTEM 2x20 resin's low coefficient of thermal expansion (CTE) and high temperature resistance support long-term in-service life.

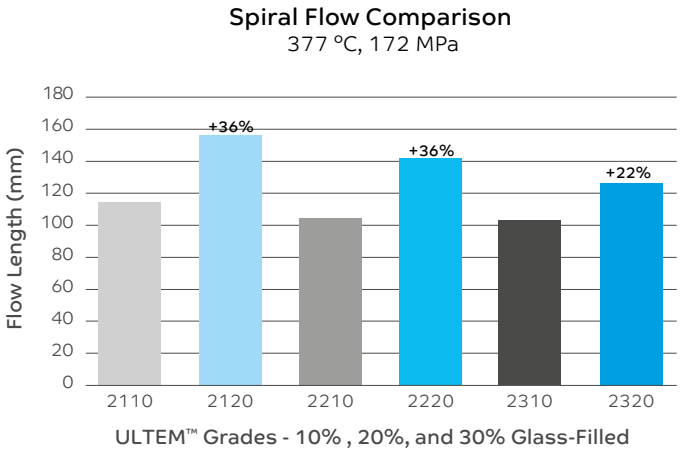
POTENTIAL MATERIAL ADVANTAGES & BENEFITS

ULTEM 2120, 2220 and 2320 resins were developed following customer needs across multiple industries to enhance part design, colorability, durability and production costs.

HIGH FLOW FOR COMPLEX PRECISION COMPONENTS

ULTEM 2120, 2220, and 2320 resins exhibit exceptional flow characteristics. The lower viscosity materials enable smaller, more-complex, and thinner walled components.

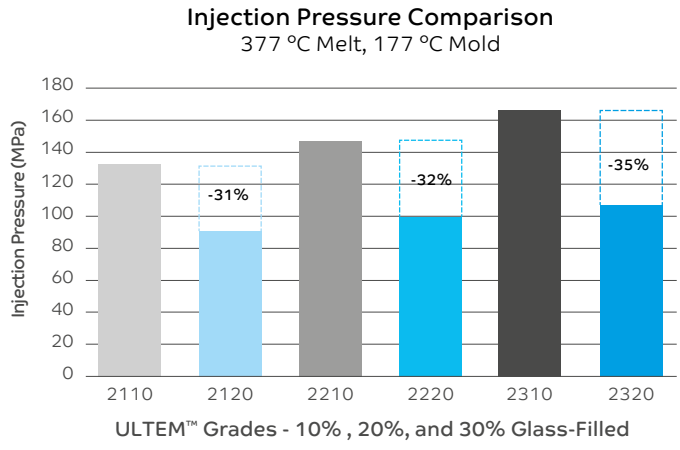




SAVE PROCESSING TIME AND PRODUCTION COSTS

ULTEM 2120, 2220, and 2320 resins process at lower injection pressures. This can enable more flexible design and save processing time and cost.

- Injection pressures drop up to 35% helping enable thin wall designs and processing flexibility
- Ability to reduce cooling time up to 10% -> potential to increase productivity and reduce part cost



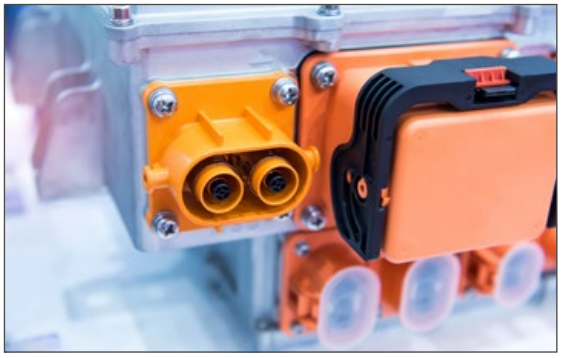
COLORABILITY FOR CUSTOMIZATION AND IDENTIFICATION

The ULTEM 2x20 resin series can be colored for easy customization and identification.

Some potential benefits:

- Easy part identification
- Component customization
- Extraordinary colors for your brand

Fiber Optic Connectors

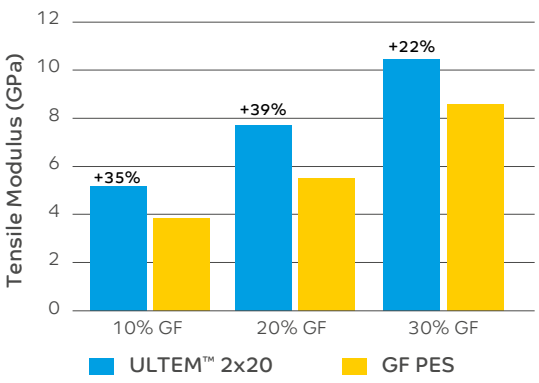


Electrical Connectors

HIGH MECHANICAL STRENGTH FOR DURABILITY AND RELIABILITY

ULTEM 2120, 2220, and 2320 resins have excellent mechanical properties, enabling durable, high-strength parts.

Tensile Modulus (ASTM D638)



Thin wall Housings

Consumer Electronics

MATERIAL PROPERTIES

ULTEM™ RESIN TYPICAL PROPERY VALUES	ULTEM 2120 RESIN	ULTEM 2220 RESIN	ULTEM 2320 RESIN
MECHANICAL			
Tensile Modulus, 5 mm/min (ASTM D638)	5100 MPa	7700 MPa	10500 MPa
Tensile Stress, brk, Type I, 5 mm/min (ASTM D638)	120 MPa	160 MPa	175 MPa
Tensile Strain, brk, Type I, 5 mm/min (ASTM D638)	3%	3,34%	2%
Flexural Modulus, 1.3 mm/min, 50 mm span (ASTM D790)	5100 MPa	7600 MPa	10500 MPa
Flexural Stress, brk, 1.3 mm/min, 50 mm span (ASTM D790)	220 MPa	250 MPa	270 MPa
IMPACT			
Izod Impact, notched, 23°C (ASTM D256)	50 J/m	60 J/m	80 J/m
Izod Impact, notched, -30°C (ASTM D256)	45 J/m	55 J/m	60 J/m
Izod Impact, unnotched, 23°C (ASTM D4812)	510 J/m	580 J/m	615 J/m
THERMAL			
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm (ISO 75/Bf)	214 °C	215 °C	217 °C
Vicat Softening Temp, Rate B/120 (ISO 306)	218 °C	225 °C	230 °C
CTE, -40°C to 40°C, flow (ASTM E831)	3.15E-05 1/°C	1.6E-05 1/°C	1.5E-05 1/°C
CTE, -40°C to 40°C, xflow (ASTM E831)	5.92E-05 1/°C	5.34E-05 1/°C	5.8E-05 1/°C
PHYSICAL			
Specific Gravity (ASTM D792)	1,34	1,4	1,5
Melt Flow Rate, 337°C/6.7 kgf (ASTM D1238)	20 g/10 min	14 g/10 min	10 g/10 min
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (UL 94)	≥0.5 mm	≥0.5 mm	≥0.5 mm
FAR 25.853, Vertical Burn 60s	Pass*	Pass*	Pass*
FAR 25.853, Smoke Density	Pass*	Pass*	Pass*

* not available yet on lot certification

SABIC ISCC+ CERTIFIED RENEWABLE ULTEM RESIN SOLUTIONS

A new portfolio of bio-based ULTEM resins that delivers a lower carbon footprint while offering the same high performance and processability as incumbent ULTEM materials is now available.

ISCC International Sustainability & Carbon Certification

CONTACT INFORMATION

SABIC SPECIALTIES BUSINESS

AMERICAS
E: Specialties.Americas@sabic-hpp.com
T: +1 800 845 0600

ASIA PACIFIC
E: Specialties.Asia@sabic-hpp.com
T: +86 400 833 1033

EUROPE
E: Specialties.EMEA@sabic-hpp.com
T: +36 1 288 3040

SABIC MATERIAL FINDER
Find the right Specialties material for your application ▶

ULTEM, SILTEM, EXTEM RESINS