ENABLING MINIATURIZATION FOR BURN-IN TEST SOCKETS (BITS)

WITH SUPERFLOW ULTEM™ RESINS

ENABLING MINIATURIZATION FOR BURN-IN TEST SOCKETS

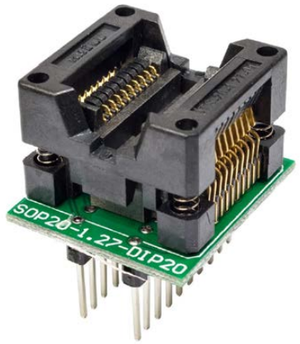
Continued miniaturization of integrated circuits (ICs) are driving the need for new material solutions to support advanced designs for fine-pitch components that are used under extremely harsh conditions, including high temperature, high pressures and multiple cycles of use.

SABIC's glass fiber reinforced Superflow ULTEM SF2250EPR and SF2270 resins feature exceptional flow properties for molding thin-wall, high-precision, and miniaturized BiTS products. The high flow performance can reduce the number of gates resulting in less breakage and higher production yields.

Other potential applications for this material include cassettes, IC process carriers, FOUPs and gas/liquid transport system components.

SUPERFLOW ULTEM RESIN OFFERS:

- Up to 5x times higher flow than standard 20% glass filled ULTEM resin
- Balanced flow, ductility and weld line strength
- Fine pitch, thin-wall molding capability
- Inherent flame resistance, UL94 V-0 @1.5mm in black and natural colors
- Chemical resistance against solvents and detergents
- Low outgassing and high cleanliness
- Low and stable dielectric properties, Dk and Df



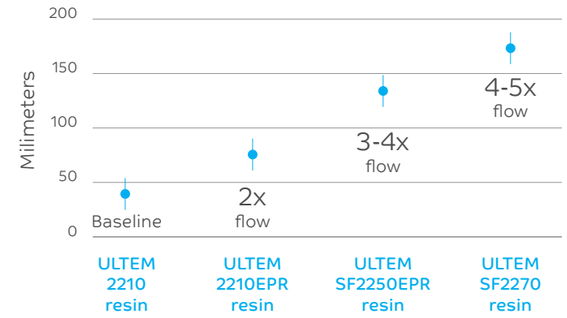
BiTS are critical devices that enable IC testings prior to the PCB final assembly in order to minimize early failures and increase the reliability and lifetime of the final devices.

PROPERTIES	ULTEM 2210 resin	ULTEM 2210EPR resin	ULTEM SF2270 resin	ULTEM SF2250EPR resin	UNITS	TEST METHODS
MECHANICAL						
Tensile Stress, brk, 5mm/min	139	137	145	145	MPa	ASTM D638
Tensile Modulus, 5mm/min	6890	6890	9247	9057	MPa	ASTM D638
Flexural Stress, yld	227	206	189	202	MPa	ASTM D790
Flexural Modulus	6890	6890	8000	7796	MPa	ASTM D790
IMPACT						
Izod Impact, notched glass, 23°C	64	80	67	79.7	J/m	ASTM D256
THERMAL						
HDT, 1.82MPa, 6.4mm	211	208	202	201	°C	ASTM D648
PHYSICAL						
Specific Gravity	1.42	1.39	1.44	1.43		ASTM D792
Melt Flow Rate, 337°C/6.6kgf	8.4		43	21.9	g/10 min	ASTM D1238

Superflow ULTEM Resin:

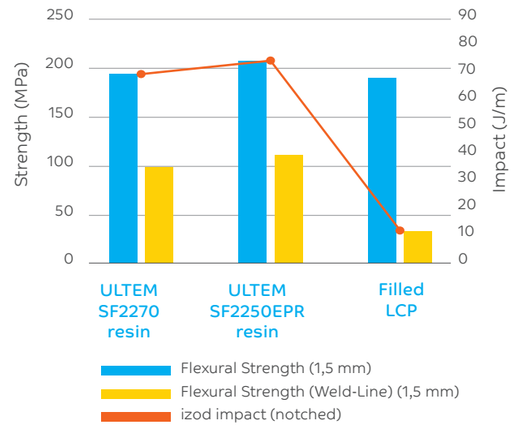
- **SF2270:** Super high flow, UL94 V0 listing @ 1.5mm
- **SF2250EPR**: Balanced high flow and ductility, UL94 V0 listing @ 1.5mm

Super Flow: Spiral Flow Performance



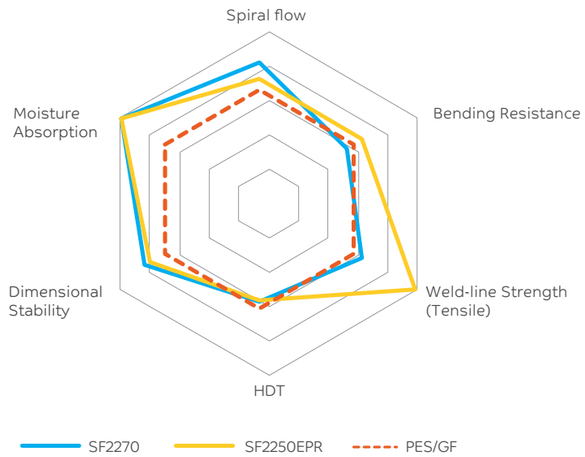
Superflow (SF) Series vs. Glass Filled LCP:

- Greater weld line strength
- Balanced stiffness and ductility



Superflow (SF) Series vs. Glass Filled PES:

- Similar or better flow and better ductility
- Higher strength and modulus (up to 20%)
- Lower specific gravity (up to 9%)
- Lower moisture absorption
- Lower Dk/Df, better dielectric performance



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