FAST FLOW UNDERFILL ENCAPSULANT FOR CSP's and BGA's

EAST HANOVER, NJ – Zymet has developed a fast flow underfill encapsulant, designated **X6-82-5LV**. The encapsulant is capable of flowing across CSP's and large BGA's. And, it has been optimized for adhesion to commonly used organic surfaces.

Figure 1 illustrates the improved flow rate over the new product's predecessor. Across a 750 mil distance at 90°C, **X6-82-5LV** flows in 30% less time. Further enhancement to flow is achievable through higher underfill temperature. At 110°C, **X6-82-5LV** will flow across a 750 mil distance in as little as 25 seconds.

In Figure 2, the interfacial fracture toughness is compared with that of a popular commercial encapsulant. For polyimide, a commonly used CSP substrate and IC passivation, the cohesive failure mode demonstrates the encapsulant's exceptional adhesion.

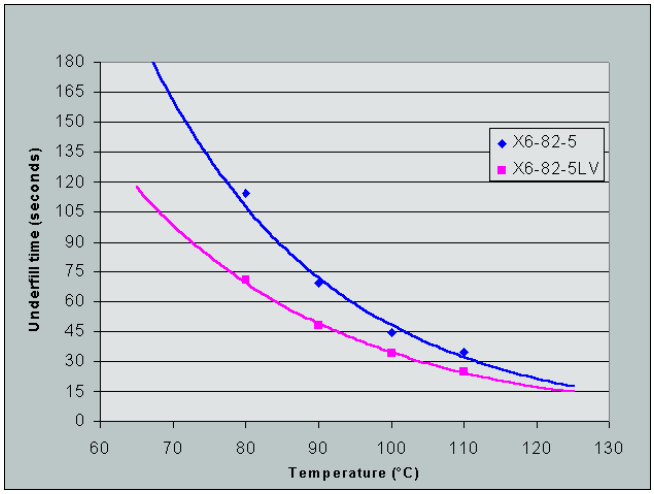

Figure 1. Flow time of **X6-82-5LV** and earlier X6-82-5 across a 750 mil distance.

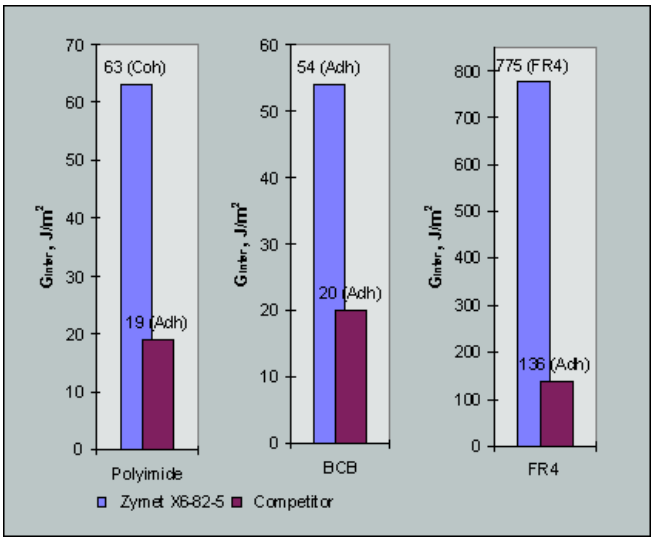

Figure 2. Interfacial fracture toughness of underfill encapsulants on various organic substrates. (courtesy of Lehigh University)

X6-82-5LV's maximum particle size is 10 microns; thus, it will be compatible with future generations of devices having finer pitch and smaller gap heights. The encapsulant is a fast-curing compound, curing in 4 minutes at 150°C, suitable for efficient in-line processing. Upon cure, it develops at Tg of about 120°C and a CTE of about 31 ppm/°C.

Zymet is a manufacturer of microelectronic and electronic adhesives and encapsulants. Its products include die attach adhesives, substrate adhesives, and UV curable glob top and cavity-fill encapsulants.

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