

Fig. 1 Phase diagram of "Cerasolzer".
System Pb-Sn-3% Zn-1% Sb.

Table 1 Tensile strength and elongation

	Tensile strength (kg/mm ²)—upper, Elongation (%)—lower					
	16°C	50°C	100°C	150°C	200°C	250°C
#143	7.0 66	3.6 112	1.6 154	—	—	—
#186	7.2 2.7	—	3.3 6.0	1.9 61	—	—
#246	5.4 9.0	—	2.5 14	1.3 82	—	—
#297	4.2 36.0	—	2.2 50	1.6 50	1.1 60	0.7 60

Table 2 Melting temperature, range, hardness, specific gravity,
thermal expansion coefficient and electric resistance

	Melt. temp. range (°C)		Hardness (20°C, Hv)	Sp. Gr. (4°C)	Therm. exp. coeff. (15~110°C)	Elect. resist. (20°C, Ω-cm)
	Solidus line	Liquidus line				
#143	136.4	161.6	13.5	8.1	21.0 × 10 ⁻⁶	13.5 × 10 ⁻⁶
#186	169.5	185.0	18.3	8.4	23.5 × 10 ⁻⁶	14.0 × 10 ⁻⁶
#246	169.3	244.6	14.9	9.5	24.0 × 10 ⁻⁶	16.5 × 10 ⁻⁶
#297	280.2	296.4	12.6	10.8	28.7 × 10 ⁻⁶	21.0 × 10 ⁻⁶

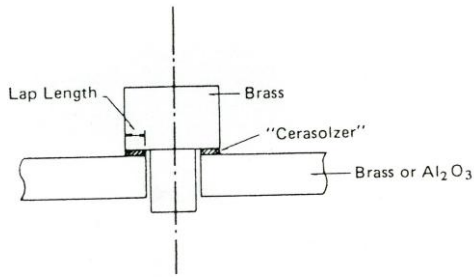


Fig. 2 Specimen for leak test.

Table 3 Leak rate of "Cerasolzer" sealing measured by Helium Leak Tester.

Brass-"Cerasolzer"-Brass		Al ₂ O ₃ -"Cerasolzer"-Brass	
Lap Length	He Leak Test	Lap Length	He Leak Test
0.35 mm	<4.0 × 10 ⁻¹⁰ atm cc/sec	0.35 mm	<8.6 × 10 ⁻¹⁰ atm cc/sec
0.85	<4.0 × 10 ⁻¹⁰	0.85	<8.6 × 10 ⁻¹⁰
1.35	<4.0 × 10 ⁻¹⁰	1.00	<7.4 × 10 ⁻¹¹
2.35	<4.0 × 10 ⁻¹⁰	1.35	<8.6 × 10 ⁻¹⁰
2.85	<4.0 × 10 ⁻¹⁰	2.35	<8.6 × 10 ⁻¹⁰
3.35	<4.0 × 10 ⁻¹⁰	3.35	<8.6 × 10 ⁻¹⁰
		4.35	<8.6 × 10 ⁻¹⁰

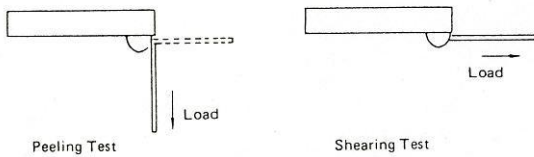


Fig. 4 Method of adhesive strength measurement.

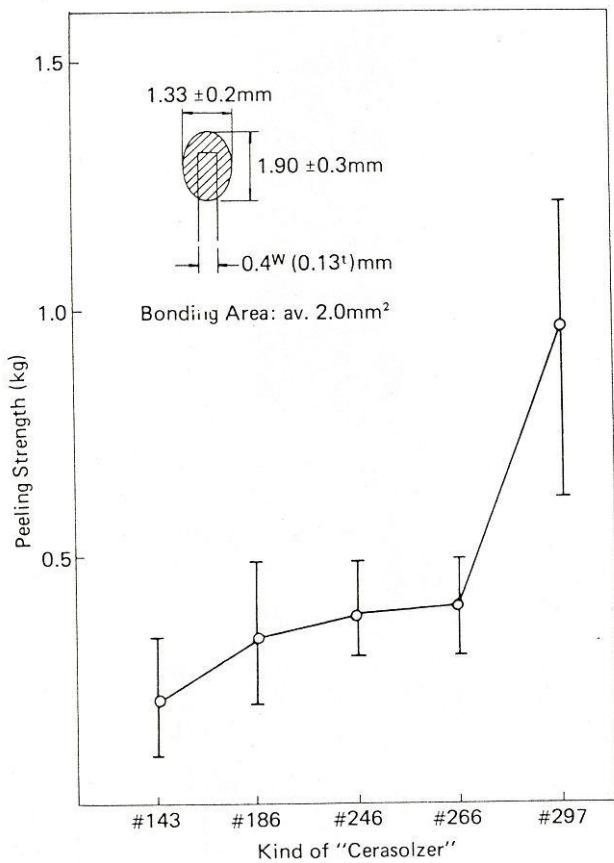


Fig. 5 Peeling strength of each kind of "Cerasolzer"

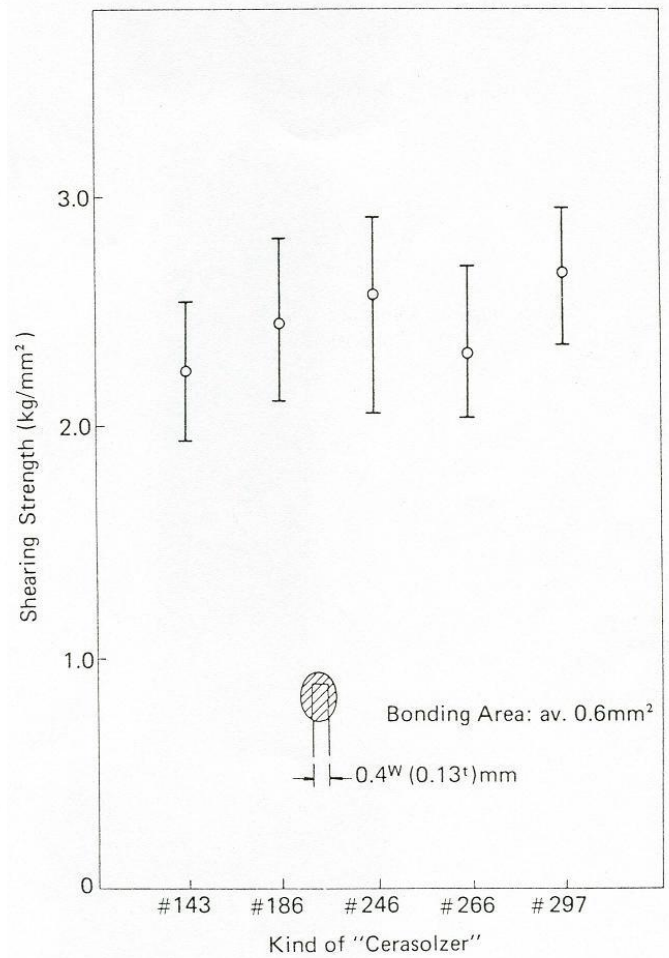


Fig. 6 Shearing strength of each kind of "Cerasolzer".

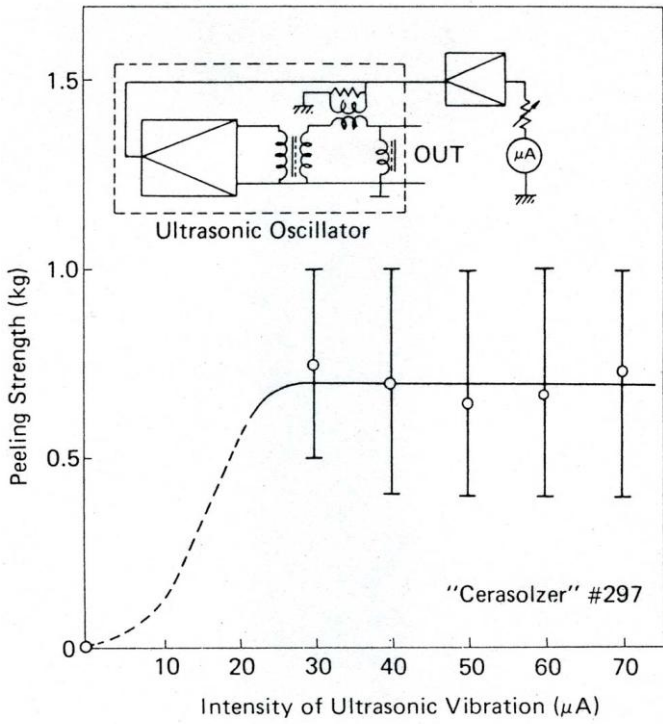


Fig. 7 Effect of intensity of ultrasonic vibration on peeling strength.

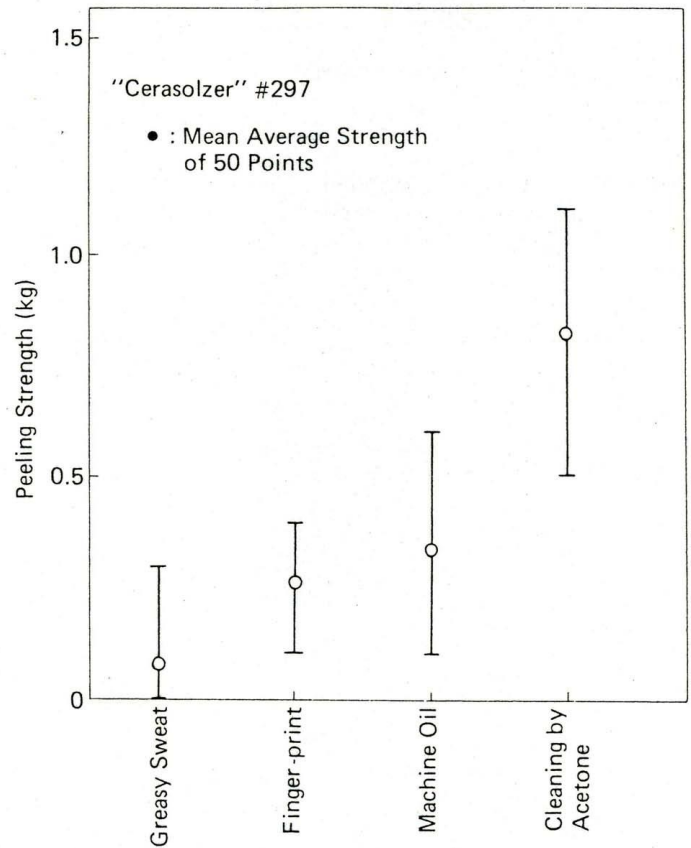


Fig. 8 Influence of contamination of glass surface on peeling strength.

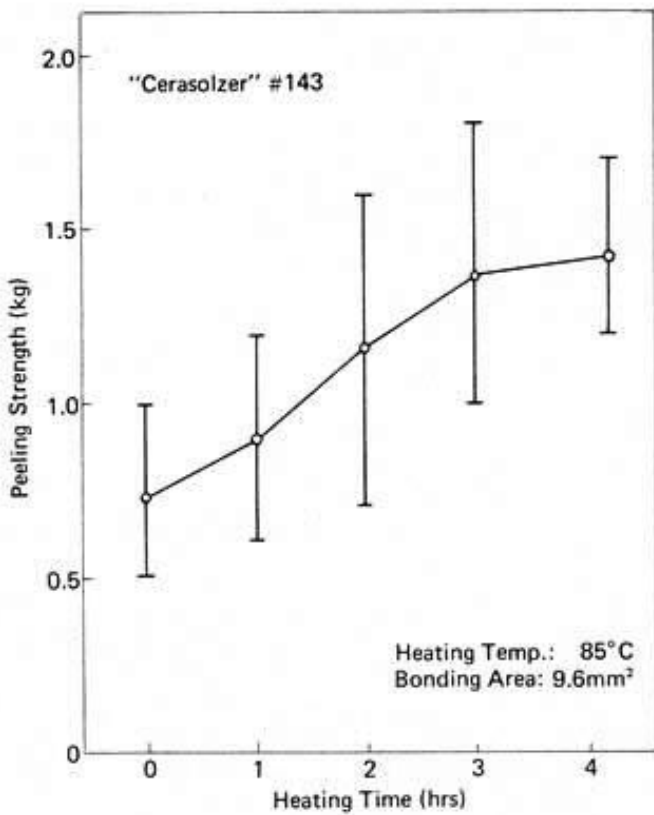


Fig. 9 Effect of aging on peeling strength

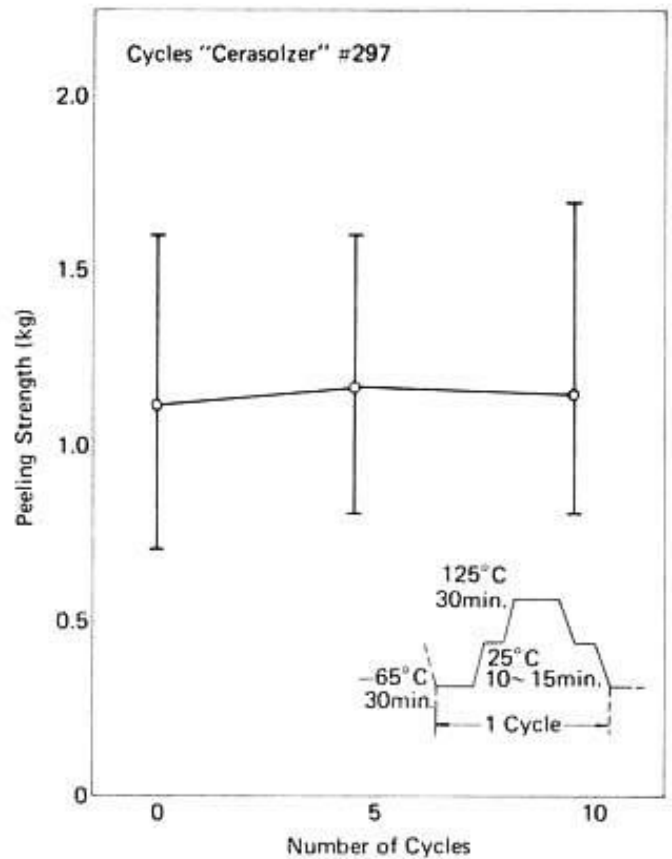


Fig. 10 Temperature aging test

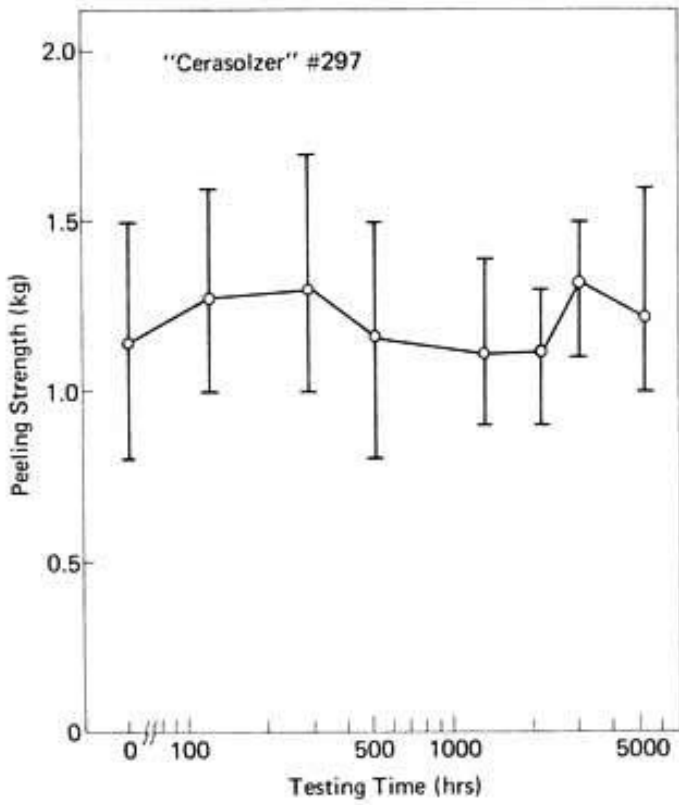


Fig. 11 Life test (at 125°C)

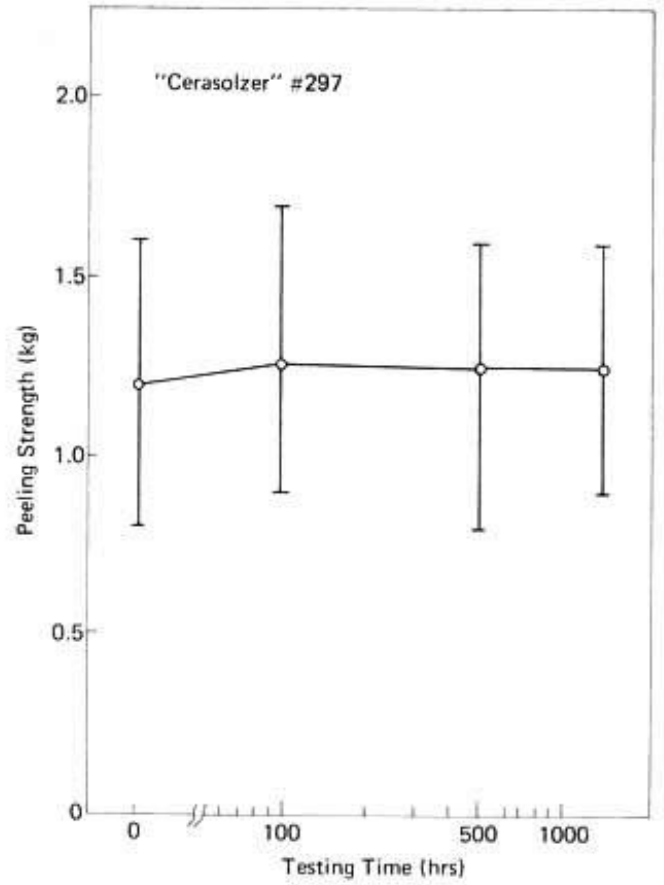


Fig. 12 Humidity test (at 40 ± 3°C, 90 - 95 %RH)

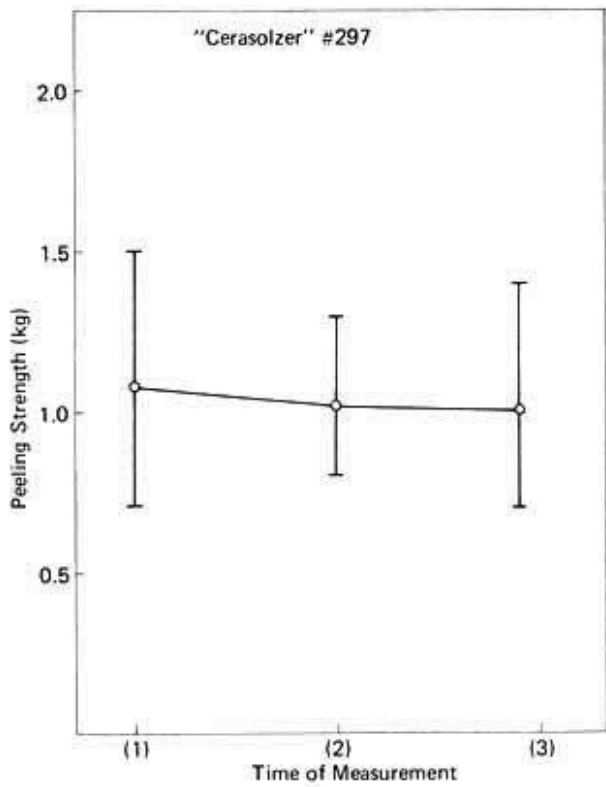


Fig. 13 Moisture resistance test

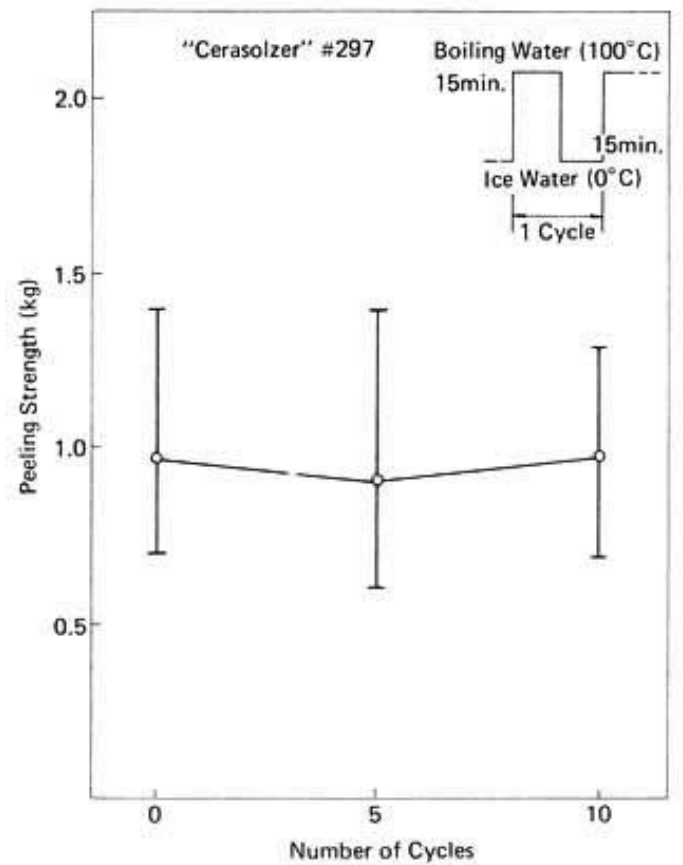


Fig. 14 Thermal shock test

