

# TECHNICAL DATA ON SOFT SOLDERS

Alloy Composition	Solidus °C	Liquidus °C	Solidus °F	Liquidus °F	Specific Gravity %	Tensile Strength PSI	Shear Strength PSI	Electrical Conductivity Cu%	Brinell Hardness	Elastic Modulus 10 <sup>6</sup> PSI	Surface Tension dynes/cm at 230°C
Pb100	327	327	621	621	11.34	1780	1800	7.9	4.0	2.61	
Sn1Pb97.5Ag1.5	309	e	588	e	11.28	3600	3600	8.8	11.0		
Sn5Pb95	308	312	586	594	11.06	4190	3000	8.0	9.0		
Pb94.5Ag5.5	304	380	579	716	11.35	4000	2900	6.0			
Pb97.5Ag2.5	304	e	579	e		3600	2900	7.4			
Sn5Pb93.5Ag1.5	296	301	565	574							
Sn5Pb92.5Ag2.5	287	296	549	565	11.02	4210	2240	8.6		2.00	
Sn10Pb90	268	302	514	576		4700	4400				
Sn10Pb88Ag2	268	299	514	570	10.75	3260		8.4	12.0	2.80	
Sn100	232	e	450	e	7.29	1800	2560	13.9	4.0	6.11	545
Sn15Pb85	225	289	437	553	10.50	5000	4470	8.4	11.3		
Sn63Pb37	183	e	361	e	8.41	6700	6060	11.5	12.0		490
Sn62Pb38	183	184	361	363	8.50	6700	6060			4.35	
Sn60Pb40	183	191	361	376	8.51	6400	5700	11.3	12.0	4.35	
Sn55Pb45	183	203	361	397	8.68						
Sn50Pb50	183	216	361	421	8.88	6450	5870	10.9	11.0		476
Sn45Pb55	183	226	361	439	9.08	6200	5720	10.4	10.6		
Sn40Pb60	183	238	361	460	9.29	6200	5680	10.1	10.5	3.34	474
Sn35Pb65	183	246	361	475	9.50	6050	5590	9.8	11.0		
Sn30Pb70	183	254	361	489	9.74	5750	5500	9.3	11.2	3.05	470
Sn25Pb75	183	268	361	514	10.00	5400	5310	8.9	11.5		
Sn20Pb80	183	277	361	531	10.23	5200	4740	8.7	11.5	2.90	467
Sn62Pb36Ag2	179	e	354	e				11.6	16.0	3.41	
Sn60Pb36Ag4	179	246	354	475		8500	7000				
Sn43Pb43Bi14	144	163	291	325	9.02	6400				3.56	
<b>Lead-Free</b>											
Sn95Sb5	235	240	455	464	7.26	5900	6200	11.9	14.0		
Sn99.3Cu0.7	227	e	441	e	7.31						
Sn95Ag5	221	245	430	473	7.42	10,100	8400	14.0	18.0		
Sn96.5Ag3.5	221	221	430	430	7.36	8900	4600	14.0	17.0		
Sn96.5Ag3.0Cu0.5	217	e	423	e	7.40						

# TENSILE STRENGTH (P.S.I.) OF SOFT SOLDERS AT ELEVATED AND BELOW ZERO TEMPERATURES

Alloy	Room Temp.	200°F	300°F	-200°F	-300°F
Sn05Pb95	4190	2965	1785		
Sn10Pb90	4700	2917	1863		
Sn20Pb80	5200	3043	1518		
Sn30Pb70	5750	3120	1495		
Sn40Pb60	6200	3320	1275		
Sn50Pb50	6450	3090	1150		
Sn60Pb40	6400	3150	1000		
Sn95Sb05	5900	3700	2000	10750	12000
Pb97.5Ag1.5Sn1	3600	2500	1750	7000	8750

## FOUR BASIC TYPES OF STRESS

