



SANHO CHEMICAL CO., LTD.

NO. 1, ZHONGSHAN S. RD., LUZHU DIST., KAOHSIUNG CITY, TAIWAN.
TEL : 886-7-6962211~3 http : // www.sanho.com.tw
FAX : 886-7-6976993 (Sales) E-mail : sanho@sanho.com.tw
FAX : 886-7-6961782 (Export) E-mail : sanho@so-net.net.tw

SANCURE LC-125

SANCURE LC-125 is not only a latent type epoxy curing agent but also a curing accelerator. It contains in one single molecule the active hydrogen's portion as well as the functional groups which act as curing catalyst. LC-125 can be dispersed easily in epoxy resins. and the mixture shows good storage stability (=long pot life,) at an ambient temperature. The especially can be cured more low than 80°C temperature(=by moderate heating)

The cured products by LC-125 exhibit light color, good adhesion performance and superior mechanical properties so that a wide variety of applications are possible, such as adhesives, encapsulations, potting, and powder coatings.

1. Specifications :

| | |
|-------------------------------|--|
| Appearance | : White powder in fine particle |
| Viscosity(Gardner Holdt/25°C) | : O- (as 50% solution in isopropanol) |
| Average particle size(μm) | : Average 7.0 μm |
| Amine value(mg / KOH) | : 232(By Potentiometric titration method) |
| Softening point, °C | : 110°C(The Ring and Ball method) |

Remark : Value listed on this document is not standard value. Only for reference , Not the specification.

2. Recommended mixing ratio

15~25 parts to 100 parts of Bisphenol-A type epoxy resin whose epoxy equivalent weight is about 190.

The composition of the relevant raw materials and test methods with ration as following

Ingredients :

Epoxy resin : JER828EL (manufactured by Mitsubishi Chemical Corporation)

Thixotropic Agent : Aerosil300

Hardener : SANCURE LC-125

Experiment method :

1) Curing properties (gel time)

Gel time of 2g sample. Measured at the designated temperature by Gel-Time-Tester

2) Storage stability

Mess = 20g, Measure the storage stability after store the epoxy compounding in sealed glass bottle at 23°C

The initial viscosity was measured at 25 ° C until the viscosity increase rate (multiples), by E-type viscometer

3) Glass transition temperature (Tg)

Estimated from DSC curve reheat the cured sample at 10°C/min. for the start sample heated at 10°C/min to 250°C.

4) Tensile shear strength, (Mpa)

Apply the epoxy compounding onto mild steel sheet with sand blast and heated at different temperatures. Using AUTO.COM AC-50KN-C (manufactured by T.S.E Co., Ltd.). Measure the tensile strength under the speed of 2mm/min.

5) Boiling water absorption

Immerse the cured product heated at different temperatures in boiling water for 4hour. Thereafter, measured the weight increase of the cured product.

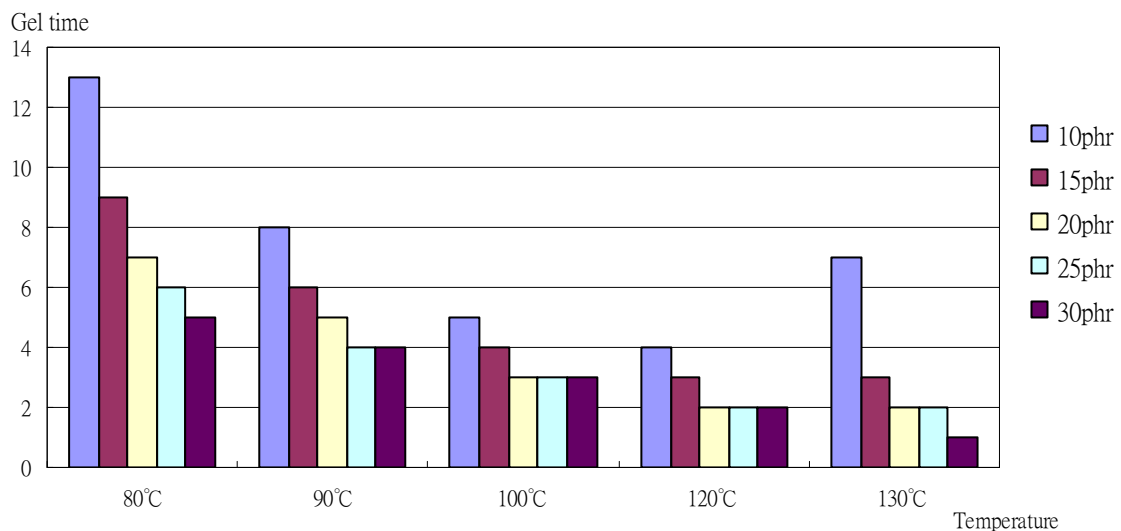
The composition ratio :

JER828EL / Aerosil300 / SANCURE LC-125 = 100/1 / X, (X = 10.15.20.25.30 phr)

3. Curing properties : Gel Time

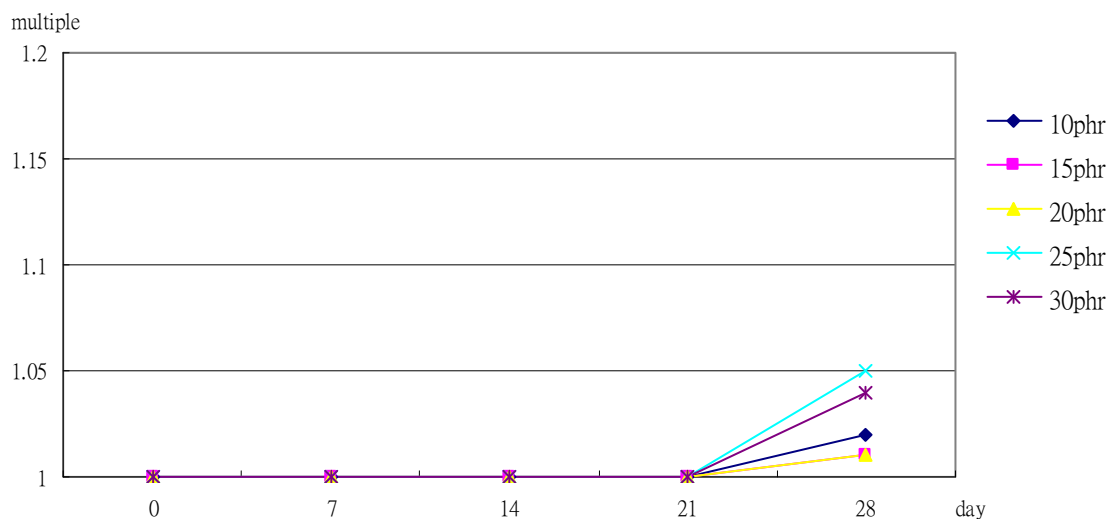
| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|--------|-------|-------|-------|-------|-------|
| 80°C | 13 | 9 | 7 | 6 | 5 |
| 90°C | 8 | 6 | 5 | 4 | 4 |
| 100°C | 5 | 4 | 3 | 3 | 3 |
| 120°C | 4 | 3 | 2 | 2 | 2 |
| 150°C | 7 | 3 | 2 | 2 | 1 |

(MIN)



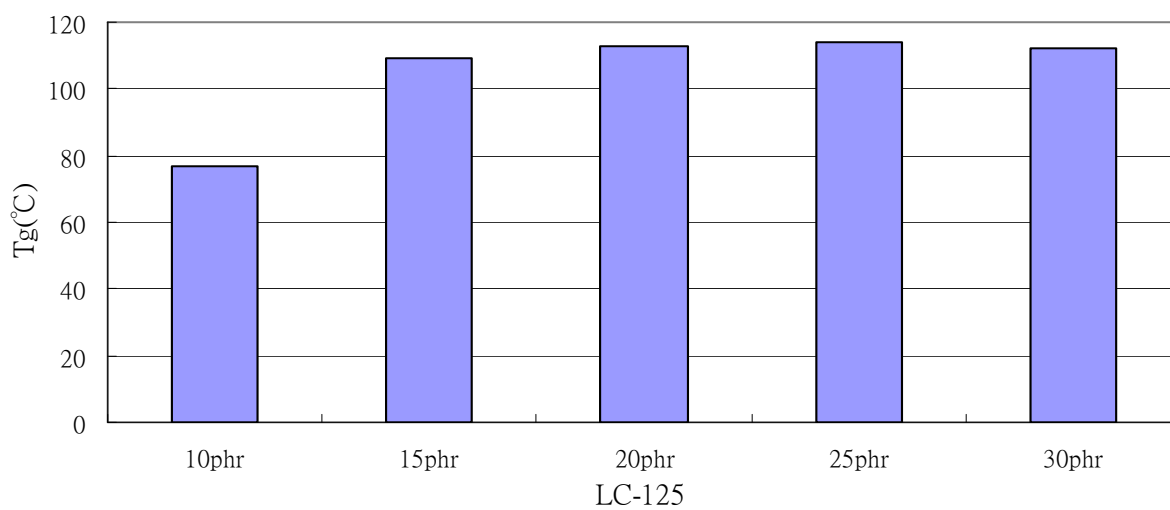
4. Storage stability : until the viscosity increase rate (multiple).

| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|--------------------------|-------|-------|-------|-------|-------|
| viscosity Pa · s/25°C | 26 | 31 | 39 | 48 | 63 |
| 7 Day | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 14 Day | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 28 Day | 1.02 | 1.01 | 1.01 | 1.05 | 1.04 |



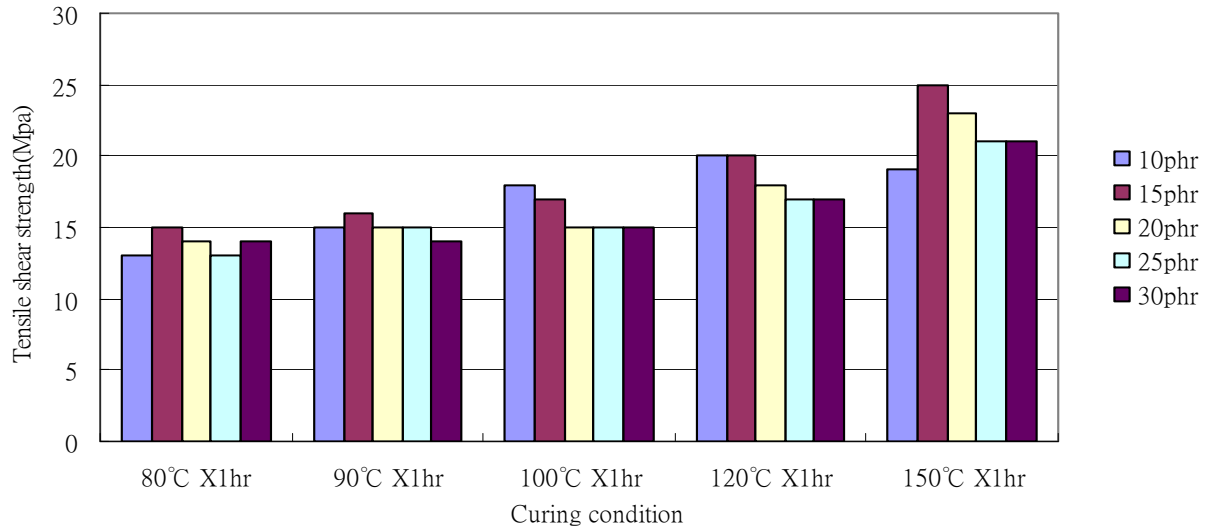
5. Glass transition temperature(Tg) :

| LC-125 | 10 phr | 15 phr | 20 phr | 25 phr | 30 phr |
|--------|--------|--------|--------|--------|--------|
| Tg(°C) | 77 | 109 | 113 | 114 | 112 |



6. Tensile shear strength (Mpa) :

| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|---------------|-------|-------|-------|-------|-------|
| 80°C x1 hour | 13 | 15 | 14 | 13 | 14 |
| 90°C x1 hour | 15 | 16 | 15 | 15 | 14 |
| 100°C x1 hour | 18 | 17 | 15 | 15 | 15 |
| 120°C x1 hour | 20 | 20 | 18 | 17 | 17 |
| 150°C x1 hour | 19 | 25 | 23 | 21 | 21 |



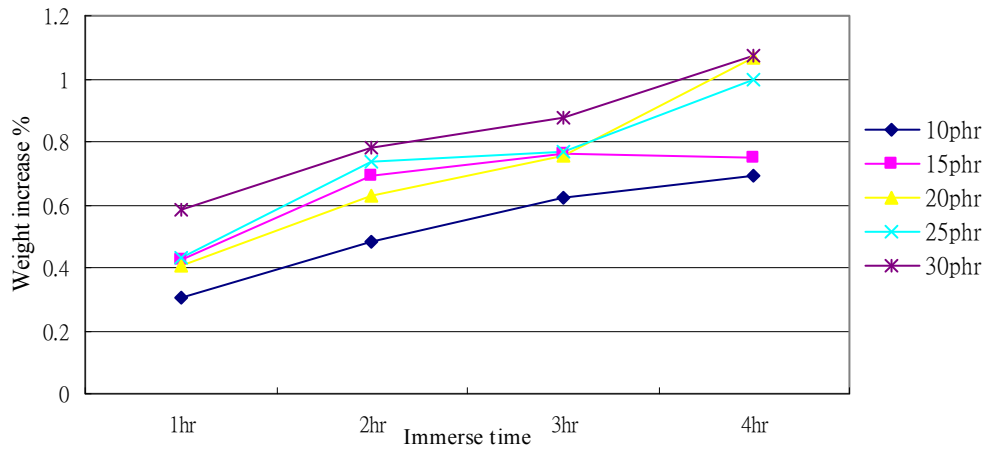
7. Boiling water absorption (%) :

| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|------------------|--------------|-------|-------|-------|-------|
| Curing condition | 80°C x1 hour | | | | |
| Immerse 1 hour | 0.305 | 0.426 | 0.408 | 0.433 | 0.585 |
| 2 hour | 0.482 | 0.690 | 0.627 | 0.735 | 0.780 |
| 3 hour | 0.624 | 0.763 | 0.756 | 0.771 | 0.874 |
| 4 hour | 0.691 | 0.751 | 1.064 | 0.999 | 1.073 |

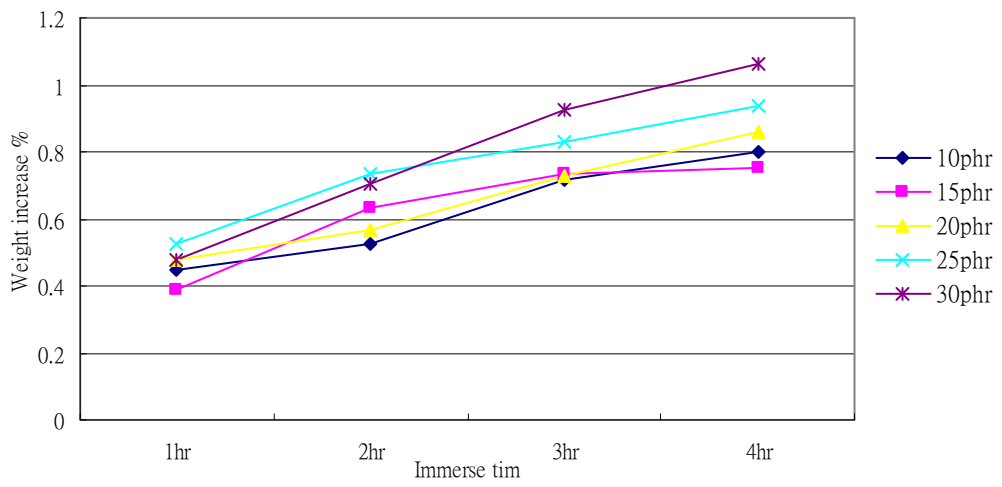
| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|------------------|---------------|-------|-------|-------|-------|
| Curing condition | 100°C x1 hour | | | | |
| Immerse 1 hour | 0.455 | 0.387 | 0.477 | 0.523 | 0.475 |
| 2 hour | 0.526 | 0.632 | 0.570 | 0.734 | 0.703 |
| 3 hour | 0.714 | 0.732 | 0.730 | 0.829 | 0.928 |
| 4 hour | 0.800 | 0.750 | 0.861 | 0.935 | 1.064 |

| LC-125 | 10phr | 15phr | 20phr | 25phr | 30phr |
|------------------|---------------|-------|-------|-------|-------|
| Curing condition | 120°C x1 hour | | | | |
| Immerse 1 hour | 0.452 | 0.424 | 0.462 | 0.505 | 0.475 |
| 2 hour | 0.645 | 0.675 | 0.674 | 0.676 | 0.764 |
| 3 hour | 0.872 | 0.685 | 0.950 | 0.916 | 0.905 |
| 4 hour | 0.805 | 0.864 | 0.886 | 1.095 | 1.021 |

80°C X 1hour



100°C X 1hour



120°C X 1hour

