LOCTITE

Technical Data Sheet

STYCAST E 2502

February 2019

Key Feature	Benefit
One component	No mixing, no weighing Less waste Consistent processing
Low viscosity	Easy handling properties
Low CTE	Low stress
High glass transition temperature	High service temperature

Product Description :

STYCAST E 2502 is an easy flowing, high purity, one component, low stress epoxy based encapsulant. Single component formulation ensures a long pot life and a very stable viscosity during use.

Applications :

STYCAST E 2502 has been specifically designed to combine easy flowing with high glass transition temperature and low thermal expansion coefficient. Typical application is the encapsulation of different types of sensors

Instructions For Use :

STYCAST E 2502 is suitable for use with manual or automatic dispensing equipment. In some cases, it may be advisable to preheat the device up to a maximum of 70°C in order to improve the flow or to preheat the product to reduce viscosity (see table).

Properties Of Material As Supplied :

Pot life of STYCAST E 2502 at 25°C is 5 days.

Property	Test Method	Unit	Typical Value
Chemistry			Epoxy resin
Appearance	TP-76W		Black liquid
Density	TP-13W	g/cm³	1,70 - 1,74
Brookfield Viscosity at 25°C	TP-10W # 6 at 2,5 rpm # 6 at 20 rpm	 Pa.s Pa.s	 15 - 30 12 - 18
Brookfield Viscosity at 25°C at 30°C at 40°C at 50°C	TP-10W # 5 at 20 rpm # 5 at 20 rpm # 5 at 20 rpm # 5 at 20 rpm	 Pa.s Pa.s Pa.s Pa.s	 15,7 11,6 6,5 4,4
Filler Content	ASTM-D-1578	% by weight	66 - 68
Solids Content	ASTM-D-4209	% by weight	100

Cure Schedule :

STYCAST E 2502 is designed for cure in conventional convection ovens. The properties of the cured material will depend upon the cure schedule used. Longer cure times and higher cure temperatures will result in a higher glass transition temperature and a reduced thermal expansion coefficient.

Temperature (°C)	Cure Time (h)
Standard : 120	3
150	1,5 to 2

Properties Of Material After Application :

Property	Test Method	Unit	Typical Value
Hardness	TP-49W		
	at 25°C	Shore D	90 minimum
Tensile Strength	ASTM-D-638		
	at 25°C	MPa	45 - 60
	at 120°C	MPa	40 - 50
Storage Modulus	TP-526W		
	at 35°C	GPa	4,21
	at 50°C	GPa	4,17
	at 100°C	GPa	3,80
	at 150°C	GPa	2,65
Flexural Strength	ASTM-D-790		
	at 25°C	MPa	100 – 120
	at 120°C	MPa	80 – 100
Coefficient Of Linear Thermal Expansion	TP-525W	ppm/K	
Cure : 3 h at 120°C : α_1			30
Cure : 3 h at 120°C : α_2			80
Cure : 2 h at 150°C : α_1			24
Cure : 2 h at 150°C : α_2			64
Glass Transition Temperature			
(Cure : 3 h at 120°C)			
TMA	TP-525W	°C	132
DMA (Onset Storage Modulus)	TP-526W	°C	155
DMA (Tan Delta)	TP-526W	°C	199
Thermal Conductivity		W/m.K	0,55 – 0,60
Volume Resistivity	TP-544W	Ohm.cm	$2,4 \times 10^{16}$
	at 25°C		minimum
Extractable Ionic Content	TP-91 W		
	Cl^-	ppm	10 maximum
	Na^+	ppm	10 maximum
	K^+	ppm	10 maximum
	NH_4^+	ppm	10 maximum
Surface Resistivity	ASTM-D-257	Ohm	$3,9 \times 10^{17}$
Dielectric Constant	TP-545W		
at 50 Hz			3,8
at 1 kHz			3,7
at 1 MHz			3,6
Dissipation Factor	TP-545W		
at 50 Hz			0,024
at 1 kHz			0,011
at 1 MHz			0,011
Service Temperature		°C	-40 to +180

STYCAST E 2502

One Component, Low Stress, Epoxy Based Encapsulant

Storage And Handling :

STYCAST E 2502 is shipped in dry ice packaging. Upon receipt the material should be transferred to storage below 0°C, a freezer operating at -18°C is recommended. The shelf life during which the behaviour and properties can be considered to be effectively stable, is 4 months when stored at temperatures between -18°C and -25°C.
Packages removed from storage must first be allowed to return to ambient temperature before use. This normally takes 2 (10 cc and 30 cc) to 8 hours depending upon the package size.
Pot life of STYCAST E 2502 at 25°C is 5 days.

Health & Safety :

It is recommended to consult the Henkel product literature, including material safety data sheets, prior to using Henkel products. These may be obtained from HITEK.

(STYCAST E 2502 was previously called XE 90040-2)

E22/03/2004-LM/JS/R&D

Attention Specification Writers :

The technical information contained herein is generally consistent with the properties of the material and should not be used in the preparation of specifications, as it is intended for reference only. This technical information has been derived from one batch of material and may not exactly match the properties of each individual delivered batch.
For assistance in preparing specifications, please contact HITEK for details.

Storage Temperature (°C)	Usable Shelf Life (months)
-18 to -25	4