

Description

UV784-14 is a UV only or UV heat curable epoxy acrylate system. The low intensity cured material has low storage modulus and hardness. It has excellent moisture resistance with no oxygen inhibition.

Features

- High flexibility
- Low hardness
- Passed PCT without delamination up to 168 hours
- Flowable adhesive

Applications

- UV heat curable adhesive for glass and metal substrates which is suitable for low internal stress applications.

Uncured Properties	Typical Value	Unit	Test Method
Color	Clear liquid	-	PEN 10
Viscosity CP25-1, 133s ⁻¹ at 25°C	3,600	cP	PEN 144
Refractive index	1.493	-	PEN 28
Pot life at 25°C	6 **	month	PEN 57
Cured Properties	Typical Value	Unit	Test Method
Optical transmittance			
a) 400nm	>80	%	PEN 40
b) 450nm	>85	%	PEN 40
c) 1000nm	>90	%	PEN 40
Hardness, Shore A	21	-	PEN 29
Hardness, Shore OO	54	-	PEN 29
Tensile strength	5.2	MPa	PEN 41
Elongation at break	45	%	PEN 41
Linear shrinkage	1.43	%	PEN 56
Decomposition temperature	393	°C	PEN 92
Weight loss @ 30-150°C	0.40	%	PEN 92
Weight loss @ 30-200°C	1.19	%	PEN 92
Temperature at 5% weight loss	303	°C	PEN 92
Glass transition temperature	34	°C	ASTM D7028
Storage modulus @ -40°C	803	MPa	ASTM D4440
Storage modulus @ -10°C	308	MPa	ASTM D4440
Storage modulus @ -5°C	204	MPa	ASTM D4440
Storage modulus @ 30°C	8	MPa	ASTM D4440
Storage modulus @ 120°C	1	MPa	ASTM D4440
CTE before Tg	66	ppm/°C	ASTM E831
CTE after Tg	220	ppm/°C	ASTM E831
Die shear strength_ UV			
a) Ceramic chip to glass	45	kgf/cm ²	PEN 93
b) Metal chip to glass	40	kgf/cm ²	PEN 93
c) Nickel to glass	52	kgf/cm ²	PEN 93
d) Kovar to glass	57	kgf/cm ²	PEN 93
e) Ultem to glass	17	kgf/cm ²	PEN 93

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Penchem Technologies Sdn Bhd (767120-A),

Address: 1015, Jalan Perindustrian Bukit Minyak 7, Kawasan Perindustrian Bukit Minyak, Mk.13, 14100 Penang, Malaysia.

Tel: +604-501 5976, 77, 78

Email: enquiry@penchem.com Website: www.penchem.com



Management
System
ISO 9001:2015
ISO 14001:2015
IATF 16949:2016
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f) Glass to glass	32	kgf/cm ²	PEN 93
g) Aluminium to glass	64	kgf/cm ²	PEN 93
h) Bare FR4 to glass	49	kgf/cm ²	PEN 93
i) Gold to glass	107	kgf/cm ²	PEN 93
j) Alumina to glass	39	kgf/cm ²	PEN 93
Die shear strength_ UV+Heat			
a) Ceramic chip to glass	124	kgf/cm ²	PEN 93
b) Metal chip to glass	70	kgf/cm ²	PEN 93
c) Nickel to glass	201	kgf/cm ²	PEN 93
d) Kovar to glass	117	kgf/cm ²	PEN 93
e) Ultem to glass	23	kgf/cm ²	PEN 93
f) Glass to glass	70	kgf/cm ²	PEN 93
g) Aluminium to glass	127	kgf/cm ²	PEN 93
h) Bare FR4 to glass	110	kgf/cm ²	PEN 93
i) Gold to glass	95	kgf/cm ²	PEN 93
j) Alumina to glass	155	kgf/cm ²	PEN 93
Die shear strength_ PCT 121°C, 100%RH, 2atm_Ceramic chip to glass			
a) 24 hours	18	kgf/cm ²	PEN 93
b) 48 hours	13	kgf/cm ²	PEN 93
c) 72 hours	20	kgf/cm ²	PEN 93
d) 96 hours	22	kgf/cm ²	PEN 93
e) 168 hours	24	kgf/cm ²	PEN 93
Die shear strength_ Glass to glass			
a) After cure	32	kgf/cm ²	PEN 93
b) After reflow 3X	94	kgf/cm ²	PEN 93

* PEN is refer to Penchem test method

* The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on certificate of conformance or please contact Penchem representative.

** Refer the details in Storage & shelf life section information below

Guideline of Use

Direction for use

- 1) This product may be dispensed with a variety of manual and automatic applicators or other equipment as required. The user is responsible to determine the suitability of the product for all intended uses.
- 2) For dispensing process, placed the syringe on the dispensing equipment. Care must be exercised to avoid air and contaminants entrapment into the adhesive.
- 3) Purge material through the system until an unbroken flow of material is extruded.
- 4) The substrate should be clean and free from grease, mold release, or other contaminants prior to dispensing the adhesive. Dispense the adhesive by using a syringe with a recommended needle size of GA 27 or ID more than 0.203 mm.
- 5) It is recommended to use the product within work life. The work life is varies by difference environment condition and application.

Recommended Cure

Pre-curing condition

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Wavelength: 365 nm

	Intensity (mW/cm ²)	Time (sec)
Optimum	2000	15
Minimum	180	60

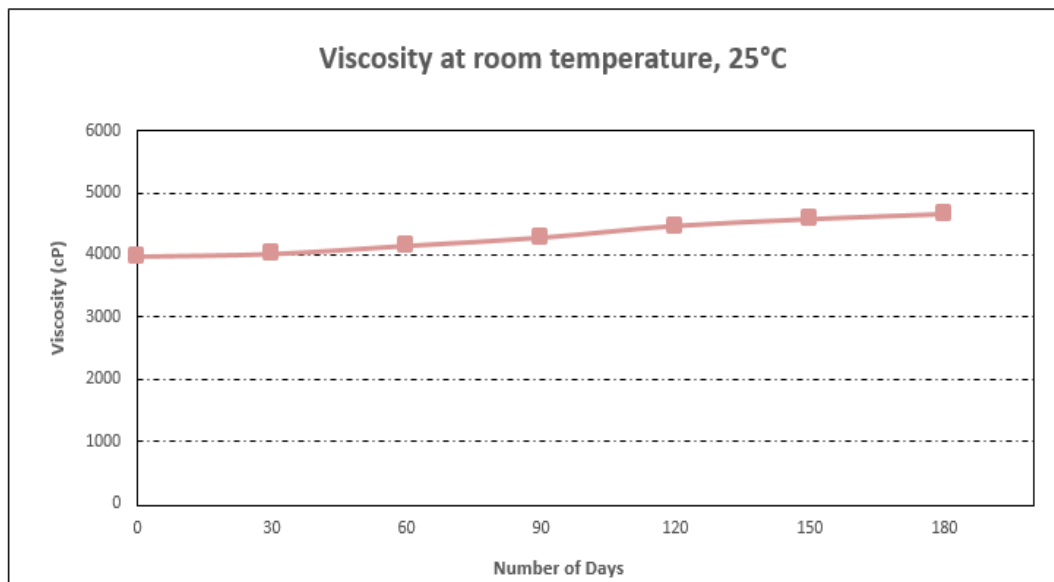
Post curing condition

100°C or above for 1 hour

UV curing is a function of lamp type, intensity, mass and thickness of adhesive, distance of lamp to adhesive, and type of substrate. One of the substrates must be transparent to lamp wavelength applied, to minimize light loss. Heat curing time will be varying at different cure temperature.

Storage & Shelf Life

The viscosity versus number of days graph below shows that the viscosity of UV784-14 will increase at room temperature over period of 6 months.



This product has 6 months shelf life from date of manufacturing, unless otherwise specified, when stored at 25±3°C in the original and unopened container.

Packaging

- 3 ml amber syringe
- 10 ml amber syringe

Other packaging enquiry, please contact our sales department.

Environment, Health & Safety

This product is intended for industrial use only. For more safety information, please refer to Product Safety Data Sheet (SDS).

General Information

All right reserved. This information in this document is subjected to change without notice.

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