

Description

PW 1450 is a one-part, solvent-free, UV and thermal dual curing adhesive. It is ideal for applications including sealing, potting, and bonding that require thermal conductivity.

Features

- Recommended substrates: PCB, aluminum
- UV and thermal curing hybrid system with instantaneous reaction upon UV irradiation
- Excellent resistance against moisture, weathering, as well as thermal shock and cycling loads
- Low shrinkage and stress when cured
- High thermal conductivity

Uncured Properties

Chemical Type	Acrylate
Appearance	White
Viscosity @ 25°C [mPa·s] Brookfield DV2T, spindle 14# @ 20rpm	5,000
Thixotropic Index @ 2rpm/20rpm	3.3
Specific Gravity [g/cm³]	~2.2
Pot life @ 25°C [hrs]	48
Shelf life @ 2-8°C [months]	6

Curing Conditions

Curing Condition [secs] UV Curing, UVA 100mW/cm ² , 1 mm thickness	30
Depth of Cure [mm]	1
Heat Curing @ 150°C [mins]	10

Cured Properties

Hardness [Shore D] ASTM D2240	70
Lap Shear Strength [MPa] FR4/FR4 Al/Al ASTM D1002	7 16
Tensile Strength [MPa] ASTM D638	12
Elongation at Break [%] ASTM D638	8
Glass Transition Temperature (Tg) [°C] ISO 11359	50
Volume Shrinkage [%] ISO 3521	0.2
Thermal Conductivity [W/m·k] ASTM D2214	1.0
Surface Resistivity [ohm·cm] ASTM D257	1.0x10 ¹³
Volume Resistivity [ohm·cm] ASTM D257	1.0x10 ¹³

Directions for Use

1. Surface Treatment

Surfaces to be bonded should be free of dust, oil, grease or any other contaminants in order to achieve a reproducible bond. Any contamination involving alkaline substances and amines is to be strictly avoided as these can impede curing. For slightly contaminated surfaces, it is sufficient to wipe with isopropanol or ethanol. Substrates with a low surface energy (e.g. polyethylene, polypropylene, Teflon) need

to be pre-treated physically (e.g. atmospheric plasma or corona) in order to achieve sufficient adhesion.

2. Application

Products are supplied ready for use. Depending on package type, they can be dosed manually, semi-automatically or fully-automatically with a dosage apparatus. With automatic dispensing using a cartridge, the adhesive is conveyed via pressure and a piston rod to a dispense valve. For bottles, the adhesive is conveyed using a pump.

A variety of valves are available to adjust for the desired dosage accuracy and speed. Please consult our Application Engineering department for recommendations on the dosage amount to be used for your application.

After application, it is recommended that the two substrates be adjoined immediately as it is possible the curing process will begin with select products under ambient conditions.

3. Suggested working temperature range is -40 to 150°C.

Storage

Maximum shelf life may be obtained when product is stored in a cool, dry location at a temperature between **2°C to 8°C**. TO PREVENT CONTAMINATION OF UNUSED PRODUCT, DO NOT RETURN ANY PRODUCT TO ITS ORIGINAL CONTAINER.

Allow the product to thaw for two hours after it is removed from the refrigerator prior to use. It is best

practice to wipe away any moisture on the surface of the syringe with cleanroom wipes.

Materials Handling

Refer to the Material Safety Data Sheet (MSDS) for this product.

Available Packages

30cc and 55cc syringe packages are available.

Disclaimer

The information provided here including the recommendations for use and application of the product is based on internal laboratory test conditions and should only be used as a reference. CollTech does not assume responsibility for the test or performance results obtained by the user. It is the responsibility of the user to perform their own evaluations to confirm whether this product is suitable for their application.