

Technical Data Sheet Ultrabond® 736

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Page 1 of 2

Product Description

Hernon® Ultrabond® 736 is a high impact UV curable structural adhesive formulated for bonding glass to glass, glass to metal and for potting and tacking applications. **Ultrabond® 736** can also cure by heat or with activator. **Ultrabond® 736** has very high light transmission and reflective index similar to that of glass. **Ultrabond® 736** cures on exposure to ultraviolet light, with a wavelength of 365 nm, or with **Hernon® EF® Activator 56**.

Typical Applications

- Bonding glass to glass
- Bonding glass to metal
- Bonding some plastics
- Bonding Potting
- Bonding Wire tacking
- Bonding Coating

Product Benefits

- One component
- 100% solid (no solvent)
- Fast cure speed with UV light or **EF® Activator 56**
- Unlimited adjustment time until exposed to UV light
- Good adhesion to glass
- Bond is almost invisible

Properties Of Uncured Material

Property	Value
Resin	Modified acrylic ester
Appearance	Amber liquid
Specific Gravity @ 25°C	1.08
Viscosity @ 25°C, cP	18,000 – 23,000
Flash Point	See MSDS

Typical Curing Performance

Ultrabond® 736 can be cured when exposed to UV radiation of 365nm. The speed of cure will depend on the UV intensity as measured at the product surface.

Tack Free Time

Tack Free Time is the time required to achieve a tack free surface.

Light Source	Irradiance (mW/cm ²)	Tack Free Time (seconds)
Ultraspot 1000	8000	< 10
365nm 1/2 inch		

Fixture Time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

UV Fixture Time, Glass microscope slides:

8 W/cm² @ 365 nm = ≤ 10 seconds

Heat Cure

This product may be cured with heat. The bond area should be heated to 120°C and maintained at that temperature for 30 minutes.

Activator Cure

This product may be cured with an activator. Apply **EF® Activator 56** to one surface and the adhesive to the other, join together and clamp. The assembly will reach handling strength in approximately 4 minutes if the gap is small, full cure in 72 hours

Typical Properties Of Cured Material

Physical Properties

Property	Value
Hardness, ASTM D2240, Shore D	60 - 70
Water Absorption, %	8.7
Refractive Index, N _D	1.51
Glass Transition Temperature, °C	45

Electrical Properties

Property	Value
Dielectric Strength, ASTM D149, kV/mm	25
Dielectric Constant, ASTM D150 @ 1 kHz	5.2
Dissipation Factor, ASTM D150 @ 1 kHz	0.03
Volume Resistivity, ASTM D257, Ω·cm	8 × 10 ¹²

Typical Cured Performance

Shear Strength, psi

UV cure is 20 seconds at 8 W/cm² @ 365 nm using a medium pressure mercury arc light source.

Activator cure is 24 hours at 22°C with **EF® Activator 56** on one side.

ISO Method	Cure Conditions	Substrates	Shear Str.
13445 Block	UV Shear	Steel to Glass	1500
		Aluminum to Glass	1500
	30 min. at 120°C	Steel to Steel	1900
		Alum to Alum	1550
4587 Lap Shear	Activator	Gritblasted Steel	≥ 1500
	24 HR CURE at 22°C	Steel to Glass	≥ 2000

Typical Environmental Resistance

Block Shear Strength, ISO 13445

Cured for 20 seconds at 100mW/cm² @ 365 nm using a medium pressure mercury arc light source.

Steel to glass

Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22°C.

Environment	Temp °C	% Initial strength retained		
		2 hr	24 hr	170 hr
Isopropyl Alcohol	22	---	80	---
Boiling Water	100	85	---	---
Water	50	---	---	75

Environment	Temp °C	% Initial strength retained	
		300 hr	500 hr
Air	121	75	80
Motor Oil	22	90	85
Gasoline	22	70	80
Heat/Humidity 90%	50	45	30

General Information

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Directions for Use

- **Ultrabond® 736** is light sensitive. Exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
- Product should be dispensed from applicators with black feed lines.

- For best performance bond surfaces should be clean and free from grease.
- Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmittance of the substrate through which the radiation must pass.
- Recommended irradiance at the bondline for curing is 5mW/cm² minimum with an exposure time of 4-5 times the fixture time at this same irradiance.
- For dry curing of exposed surfaces higher UV irradiance is required (100 mW/cm² minimum).
- Cooling should be provided for temperature sensitive substrates such as thermoplastics.
- Crystalline and semicrystalline thermoplastics should be checked for risk of stress cracking when exposed to liquid adhesive.
- Excess adhesive can be wiped away with organic solvent.
- Bonds should be allowed to cool before subjecting to any service loads.

Storage

Ultrabond® 736 should be stored in a cool, dry location in unopened containers at a temperature between 46°F to 85°F (8°C to 29°C) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused material, do not return any material to its original container.

Dispensing Equipment

Hernon® offers a complete line of semi and fully automated dispensing equipment. Contact **Hernon® Sales** for additional information.

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