Ultra Light-Weld® GA-142
Flexible, Light-Curable FIP/CIP Gasket

APPLICATIONS

- Speaker Assembly
- Electrical Enclosures
- Automotive Enclosures
- Appliance Casings
- Automotive Door Handles
- HVAC Ductwork

FEATURES

- UV/Visible Light Cure
- Good Adhesion to Nylon and Metals
- Soft, Tacky Gasket
- Cures in Seconds
- Silicone Free

SURFACES

- Plastics (ABS, PC, PET, PP)
- Metals
- Nylon 6/6

Dymax Ultra Light-Weld® GA-142 is a form-in-place (FIP) and cure-in-place (CIP) gasketing resin formulated for electrical enclosures, HVAC ductwork, and automotive casing applications which require a soft, sticky, flexible, low compression set. GA-142 has good adhesion to plastic, metal, and ceramic surfaces. It can be dispensed into intricate and complex configurations with the added benefit of curing in-line which allows for increased production speed and reduced inventories. Dymax Ultra Light-Weld resins contain no nonreactive solvents and cure upon exposure to light. Their ability to cure in seconds enables faster processing, greater output, and lower assembly costs. When cured with Dymax light-curing spot lamps, focused-beam lamps, or flood lamps, they deliver optimum speed and performance for maximum efficiency. Dymax lamps offer the ideal balance of UV and visible light for the fastest, deepest cures. This product is in full compliance with RoHS directives 2015/863/EU.

CURED MECHANICAL PROPERTIES *

Property	Value	Test Method
Durometer Hardness	00-55	ASTM D2240
Tensile at Break, MPa [psi]	0.5 [75]	ASTM D638
Elongation at Break, %	330	ASTM D638
Modulus of Elasticity, MPa [psi]	0.1 [23]	ASTM D638
Compression Set, % (85°C, 22 hr)**	31	ASTM D395
Glass Transition Tg, °C	3.7	ASTM D5418

TYPICAL UNCURED PROPERTIES *

Property	Value	Test Method
Solvent Content	No Nonreactive Solvents	N/A
Chemical Class	Acrylated Urethane	N/A
Appearance	Colorless Translucent Gel	N/A
Solubility	Organic Solvents	N/A
Density, g/ml	1.02	ASTM D1875
Viscosity, cP (20 rpm)	40,000 (nominal)	ASTM D2556
Shelf Life @ RT (22°C to 25°C) from Date of Manufacture	12 months	N/A
Soluble in	Organic Solvents	N/A

OTHER CURED PROPERTIES *

Property	Value	Test Method
Linear Shrinkage, %	1.6	ASTM D2566
Boiling Water Absorption, % (2 hr)	2.2	ASTM D570
Water Absorption, % (25°C, 24 h)	4.4	ASTM D570

Chemical Resistance - % of Initial Weight	Weight Immediately After Exposure	Weight 1 Week After Exposure
Motor Oil SAE 10W-30	104%	104%
Brake Fluid	154%	148%
Transmission Fluid	105%	105%
Diesel Fuel	200%	179%
Power Steering Fluid	103%	103%
Salt Water 5% NaCl	101%	100%
Isopropyl Alcohol 99%	238%	87%
Suntan Lotion SPF 50	107%	103%
Hand Lotion	104%	101%

Note:
The samples were immersed in fluid for 72 hours at room temperature.
Immediately - wiped clean and weight measured.
1 week - Wiped clean, left at room temperature for 1 week and then weight measured.

DISPENSE EQUIPMENT RECOMMENDATIONS *

Application	Manual	Semi-Automated	Fully Automated
Beads	SD-100	Model 400 Needle Valve	Eco-PEN

CURING EQUIPMENT RECOMMENDATIONS *

Process Method	Spot Lamp	Flood Lamp	Conveyor
Broad Spectrum	BlueWave® 200	5000 ECE or PortaRay 400	UVCS Conveyor with Fusion F300 Lamp

* Not Specifications
N/A Not Applicable
** Compression set is expressed as percentage of deflection per ASTM D395 Method B at 25% deflection. To

Technical Data Collected PRIOR TO 2010 Rev. 09/14/2020 DCR# C20-0074 Issue Date Jun 2020 DC285 Rev F

CURING GUIDELINES

Cure rate is dependent upon many variables, including lamp intensity, distance from the light source, and required depth of cure. The cure time listed below is based upon lab tests and is intended for reference only. Cure time is defined as the time to achieve a full cure of a 3.2 mm [0.13 in] thick gasket.

Recommended Minimum Cure Intensity	Cure Time
150 mW/cm^2[A]	4 s

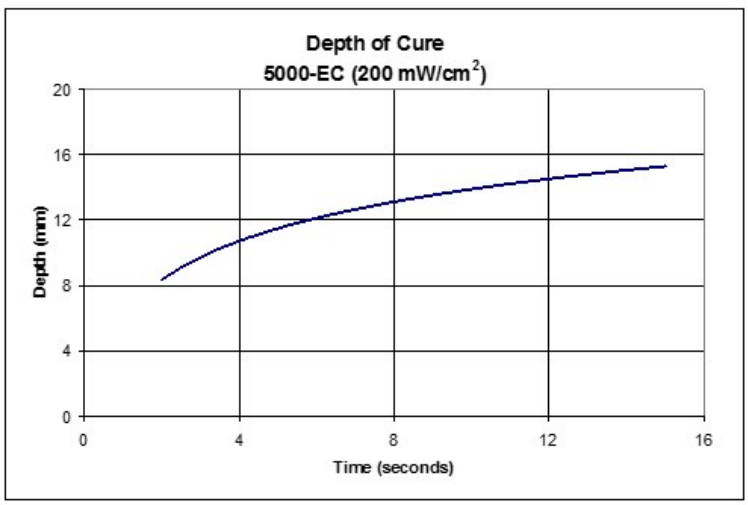
[A] *Intensity was measured over the UVA range (320-395 nm) using a Dymax ACCU-CAL™ 50 Radiometer.*

Full cure is best determined empirically by curing at different times and intensities, and measuring the corresponding change in cured properties. Full cure is defined as the point at which more light exposure no longer improves cured properties. Higher intensities or longer cures may degrade Dymax light-curable resins.

Dymax recommends that customers employ a safety factor by curing longer and/or at higher intensities than required for full cure. Although Dymax Application Engineering can provide technical support and assist with process development, each customer must ultimately determine and qualify the appropriate curing parameters required for their unique application.

DEPTH OF CURE

The graph below shows the increase in depth of cure as a function of exposure time. A 9.5 mm [0.37 in] diameter specimen was cured in a polypropylene mold and cooled to room temperature. It was then released from the mold and the cure depth was measured.



OPTIMIZING PERFORMANCE AND HANDLING

1. This product cures with exposure to UV and visible light. Exposure to ambient and artificial light should be kept to a minimum before curing. Dispensing components, including needles and fluid lines, should be 100% light blocking, not just UV blocking.
2. All surfaces in contact with the resin should be clean and free from grease, mold release, or other contaminants prior to dispensing the gasketing resin.
3. Oxygen in the atmosphere may inhibit surface cure. Surfaces exposed to air may require higher intensity UV (> 100 mW/cm^2) to produce a tack-free cure. Flooding the bond area with an inert gas, such as nitrogen, can also reduce the effects of oxygen inhibition.
4. Part should be allowed to cool after cure before testing.
5. Light curing generally produces some heat. If necessary, cooling fans can be placed in the curing area to reduce the heating effect on components.
6. At the point of curing, an air exhaust system is recommended to dissipate any heat and vapors formed during the curing process.
7. Cure speed is dependent upon many variables, including lamp intensity, distance from the light source, required depth of cure, bond gap, and percent light transmission of the substrate.

DISPENSING THE GASKETING RESIN

This material may be dispensed with a variety of semi-automated and fully automated fluid-delivery systems. Small-area applications, including beads and small dots, can be achieved using Dymax Model 400 needle valve systems. The valve system can be used in a semi-automated or fully automated application. Dymax has several other dispensing systems that may be suitable for use with our gasket materials. Questions relating to and defining the best fluid-delivery system and curing equipment for specific applications should be discussed with the Dymax Application Engineering Team.

STORAGE AND SHELF LIFE

Store the material in a cool, dark place when not in use. Do not expose to visible or UV light. This product may polymerize upon prolonged exposure to ambient and artificial light. Keep covered when not in use. This material shelf life is noted on page 1 of this document, when stored between 10°C (50°F) and 32°C (90°F) in the original, unopened container.

CLEAN UP

Uncured material may be removed from dispensing components and parts with organic solvents. Cured material will be impervious to many solvents and difficult to remove. Cleanup of cured material may require mechanical methods such as ultrasonic bath, water jet, vacuum tweezers, air knife and/or warming to aid in the removal.

GENERAL INFORMATION

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the Safety Data Sheet before use.

The data provided in this document are based on historical testing that Dymax performed under laboratory conditions as they existed at that time, and are for informational purposes only. The data are neither specifications nor guarantees of future performance in a particular application. Dymax does not guarantee that this product's properties are suitable for the user's intended purpose.

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