

November, 2018

3M™ Marine Adhesive/Sealant Fast Cure 4000 UV

Product Description

3M™ Marine Adhesive/Sealant 4000 UV is a one-part adhesive sealant that cures to form a firm, rubbery waterproof seal. Its flexibility allows for the dissipation of stress caused by shock, vibration, swelling or shrinking. Designed for marine applications above and below the waterline. Its superior UV resistance properties makes this an ideal cosmetic adhesive sealant.

Product Features

- Superior UV resistance.
- Exceptional sealing properties.
- < 1% VOC's
- Low odor.
- Non-shrinking.
- Non-sagging.
- Non-corrosive.
- Non-cracking.
- Caulkable at low temperatures (>40°F [4°C]).
- Fast curing.
- Paintable (test for suitability).



Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Uncured Physical Properties

Property	Values
Color	White/Black
Density	11.7 lb/gal
Base	Polyether
Consistency	Medium Paste

Typical Performance Characteristics

Property	Values		Test Condition	Notes
Shore A Hardness	38 to 39			
Tensile Strength	28.1 kg/cm ²	>400 lb/in ²	Room Temperature	A 1/8 inch (0.3175 cm) dumbbell specimen with a 1/8 inch (0.3175 cm) square cross section was tested at 2.0 inches/minute (5.08 cm/minute).
Elongation	>300 %			A 1/8 inch (0.3175 cm) dumbbell specimen with a 1/8 inch (0.3175 cm) square cross section was tested at 2.0 inches/minute (5.08 cm/minute).
Service Temperature Range	-40 to 90 °C	-40 to 190 °F		
Application Temperature	4 to 38 °C	40 to 100 °F		
Sag	<3/8 in			Boeing Flow

Overlap Shear Strength		Substrate	Substrate Notes	Failure mode
13.3 kg/cm ²	190 lb/in ²	Oak	Woods	85/15 (Cohesive/Adhesive)
14.8 kg/cm ²	210 lb/in ²	Maple	Woods	80/20 (Cohesive/Adhesive)
13.3 kg/cm ²	190 lb/in ²	Fir	Woods	70/30 (Cohesive/Adhesive)
11.2 kg/cm ²	160 lb/in ²	Mahogany	Woods	60/40 (Cohesive/Adhesive)
15.8 kg/cm ²	225 lb/in ²	Aluminum	Metals	80/20 Cohesive/Adhesive
14.0 kg/cm ²	200 lb/in ²	Fiberglass	Plastics/Polymers	Cohesive

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Typical Performance Characteristics (continued)

Overlap Shear Strength		Substrate	Substrate Notes	Failure mode
17.6 kg/cm ²	250 lb/in ²	Gelcoat	Plastics/Polymers	Cohesive

Property: Overlap Shear Strength

Dwell/Cure Time: Room Temperature

notes: One inch (2.54 cm) overlap specimens (0.093 inch [0.2362 cm] thickness) Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. This is the desired mode. Adhesive Failure – Adhesive/Sealant releases from substrate. Desirable failure mode is cohesive.

180° Peel Strength	Substrate
60 oz/in	Gelcoat
57 oz/in	Fiberglass
70 oz/in	Aluminum
50 oz/in	Mahogany

Property: 180° Peel Strength

Test Condition : Room Temperature

Failure mode: Cohesive

notes: One inch (2.54 cm) wide specimen on canvas. Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. This is the desired mode. Adhesive Failure – Adhesive/Sealant releases from substrate.

Heat Resistance		Substrate	Substrate Notes	Failure mode
17.6 kg/cm ²	250 lb/in ²	Fir	Woods	55/45 (Cohesive/Adhesive)
28.1 kg/cm ²	400 lb/in ²	Aluminum	Metals	95/5 (Cohesive/Adhesive)
19.3 kg/cm ²	275 lb/in ²	Gelcoat	Plastics/Polymers	Cohesive
22.8 kg/cm ²	325 lb/in ²	Fiberglass	Plastics/Polymers	80/20 (Cohesive/Adhesive)

Property: Heat Resistance

Test Condition : Room Temperature

notes: One inch (2.54 cm) overlap specimens (0.093 inch [0.2362 cm thickness]). Aged 500 hours @ 190°F (90°C). Cohesive – Adhesive/Sealant fails before adhesive/sealant releases from substrate. This is the desired mode. Adhesive Failure – Adhesive/Sealant releases from substrate.

Environmental Submersion Exposure Tests:

Overlap Shear Strength: One inch (2.54 cm) overlap specimens (0.093 inch [0.2362 cm] thickness). Tested at 70°F (21°C), 50% relative humidity.

Substrate	Initial Strength psi (kg/cm ²)	Failure Mode	Salt Water Immersion 500 hours psi (kg/cm ²)	Failure Mode*
Plastics/Polymers:				
Gelcoat	225 (15.8)	90/10 (Coh/Adh)	125 (8.8)	75/25 (Coh/Adh)
Fiberglass	200 (14.0)	50/50 (Coh/Adh)	100 (7.0)	25/75 (Coh/Adh)
Nylon	200 (14.0)	80/20 (Coh/Adh)	100 (7.0)	65/35 (Coh/Adh)
Metals:				
Stainless Steel	220 (15.5)	95/5 (Coh/Adh)	110 (7.7)	Cohesive
Brass	225 (15.8)	90/10 (Coh/Adh)	125 (8.8)	75/25 (Coh/Adh)
Copper	225 (15.8)	Cohesive	125 (8.8)	50/50 (Coh/Adh)
Aluminum	240 (16.9)	90/10 (Coh/Adh)	125 (8.8)	55/45 (Coh/Adh)

*Desirable failure mode is cohesive.

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Typical Physical Properties

Property	Values		Notes
Approximate Coverage	36.6 lineal m	120 lineal ft	10.5 oz. [310 mm Cartridge]; 1/8 in (3 mm) bead

Product Construction

10 fl. oz. cartridge (295 ml)
3 fl. oz. tube (90 ml)
400 ml Flex Pack (13.5 fl. oz.)

Product Uses

3M marine adhesive/sealant 4000 UV may be used in typical bedding and sealing applications including fiberglass hull, wood to fiberglass, porthole frames, deck fittings, moldings, thru hull and deck hardware.

Handling/Application Information

Application Ideas

Typical Marine Adhesive Sealant Applications:

Portlights
Hatches
Thru-hulls
Rails
Metal Hardware
Moldings
Wood
Teak
Fiberglass
Gelcoat
Porthole Frames

Directions for Use

1. Surface Preparation

Surface should be clean, dry and free of contaminants. New surfaces should be solvent wiped with 3M™ General Purpose Adhesive Cleaner 08984*, or equivalent. Other than new surfaces should be sanded with a fine grade abrasive to enhance bond strength.

2. Sealing and bedding application

Apply 3M™ Marine Adhesive/Sealant 4000 UV to the seam or part to be bonded. Position parts. Tool and squeeze out material to desired appearance. Remove excess with 3M general purpose adhesive cleaner 08984.*

3. Cleanup

For cleaning 3M marine adhesive/sealant 4000 UV before it is cured, use a dry cloth to remove the majority, followed by a cloth damp with 3M general purpose adhesive cleaner, toluene, acetone, or other good cleaning solvent.*

Cured 3M marine adhesive/sealant 4000 UV can be removed mechanically with a knife, razor blade, piano wire or by sanding.

*Note: When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Cure:

Cure	Relative Humidity	Temperature	Time	Cure Depth
Tack Free	50%	70°F (21°C)	22 minutes	N/A
Full Cure	50%	70°F (21°C)	24 hours	1/8 inch (0.3175 cm)

*Higher temperature and humidity conditions will accelerate the tack free time and cure. Please plan accordingly.

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Storage and Shelf Life

Store product at 60-80°F (16-27°C) for maximum storage life. Higher temperatures can reduce normal storage life. Lower temperatures can cause increased viscosity of a temporary nature. Rotate stock on a “first in-first out” basis.

When stored at the recommended conditions in the original, unopened container this product has a shelf life of 15 months from date of manufacture.

Trademarks

3M is a trademark of 3M Company.

References

1. 3m.com Product Page
Url: www.3M.com/sealants
2. Safety Data Sheet
Url: https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=4000 UV

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

Technical Information

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