

September, 2019

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	Notes
Color	White/Black	Colors may vary from nearly white to yellow/amber. Adhesive performance is not affected by color variation.
Density	11.7 lb/gal	
Base	Polyether	
Consistency	Medium Paste	

Typical Performance Characteristics

Property	Values		Test Condition	Notes
Shore A Hardness	39			
Tensile Strength	28.1 kg/cm²	>400 lb/in²	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		

Overlap Shear Strength		Substrate	Substrate Notes	Failure mode
13.3 kg/cm²	190 lb/in²	Oak	Woods	85/15 (Cohesive/Adhesive)
14.8 kg/cm²	210 lb/in²	Maple	Woods	80/20 (Cohesive/Adhesive)
13.3 kg/cm²	190 lb/in²	Fir	Woods	70/30 (Cohesive/Adhesive)
11.2 kg/cm²	160 lb/in²	Mahogany	Woods	60/40 (Cohesive/Adhesive)
15.8 kg/cm²	225 lb/in²	Aluminum	Metals	80/20 Cohesive/Adhesive

Table continued on next page

Typical Performance Characteristics (continued)

Overlap Shear Strength		Substrate	Substrate Notes	Failure mode
14.0 kg/cm²	200 lb/in²	Fiberglass	Plastics/Polymers	Cohesive
17.6 kg/cm²	250 lb/in²	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 Adhesion	Substrate
60 oz/in	Gelcoat
57 oz/in	Fiberglass
70 oz/in	Aluminum
50 oz/in	Mahogany

Property: 180° Peel Adhesion
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.

Temperature Resistance		Substrate	Substrate Notes
{17.6,55/45 (Cohesive/Adhesive)} kg/cm²	{250,55/45 (Cohesive/Adhesive)} lb/in²	Fir	Woods
{28.1,95/5 (Cohesive/Adhesive)} kg/cm²	{400,95/5 (Cohesive/Adhesive)} lb/in²	Aluminum	Metals
{19.3,Cohesive} kg/cm²	{275,Cohesive} lb/in²	Gelcoat	Plastics/Polymers
{22.8,80/20 (Cohesive/Adhesive)} kg/cm²	{325,80/20 (Cohesive/Adhesive)} lb/in²	Fiberglass	Plastics/Polymers

Property: Temperature 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 Resistance:

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/cm²)	Failure Mode	Salt Water Immersion 500 hours psi (kg/cm²)	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.

3M™ Marine Adhesive/Sealant Fast Cure 4000 UV

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 Humidit	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.

3M™ Marine Adhesive/Sealant Fast Cure 4000 UV

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 12 months from date of manufacture for cartridges and sausage packs. When stored at recommended conditions, the shelf life is 15 months from date of manufacture for 3 ounce tubes.

Trademarks

3M is a trademark of 3M Company.

References

Property	Values
3m.com Product Page	www.3M.com/sealants
Safety Data Sheet (SDS)	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.

Information

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

