Micron66 Anti-fouling Protocol

This user guide will give you all the essential information needed for understanding Micron66 anti-fouling protocol.

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Process Overview

Micron66 has been used successfully for over a decade to limit biofouling on sea turtle satellite tracking tags. However, in many cases its effectiveness has been limited, possible due to the paint being hastily applied after tag attachment. The following instructions are based on recommendations from the technical department of International Paints, the Micron66 anti-fouling paint manufacturer.

The process involves one coat of Interprotect primer and three coats of Micron66.

⚠️ *Note: This process requires 48 hours to dry prior to the tags being attached to sea turtles.*

Wildlife Computers tags should not be attached to sea turtles using epoxy over the top of the tag as this interferes with GPS antennas and anti-fouling paint. If attachment epoxy is tapered up the sides of the tags, then this, and the area of the epoxy footprint, should also be painted with Micron66 after attachment. Ideally, it should be allowed to dry as long as possible.

⚠️ *Note: Micron66 is not suitable for use in fresh water. Other Micron paints are available for fresh water use.*

Personal Protective Equipment

⚠️ *Note: the safety guidelines must be followed and the correct PPE must be worn for the application of both the primer and Micron paints.*

Once painted, tags should only be handled with gloves due to the copper and biocide in the anti-fouling paint.

MSDS

Use the following link to access the safety datasheets for both the Interprotect primer and Micron66 anti-fouling paint: http://www.yachtpaint.com/usa/diy/products/antifouling/micron-66.aspx

Check your paint can for the MSDS version number. For example, E5 for Micron66 Black.

Application Requirements

Accessories Required
- Four paint mixing cups or bowls
- Two strong mixing sticks for the paint
- Two strong mixing sticks for the primer
- Two disposable 100 ml measuring cups for the primer components

- Four small disposable paint brushes
- One sheet of 80-100 grit sandpaper
- 500 ml of isopropyl alcohol or acetone
- Three clean rags
- 10 pairs of disposable gloves
- One roll of masking tape
- Appropriate respirator, fume cabinet, or well-ventilated area in which to work
- Optional: 3/8" (10 mm) and 1/4" (6 mm) hollow punches, hammer, and wooden or nylon board to punch out masking tape discs

Application Procedure

Allow 48 hours for the application of the primer, three coats of Micron66 and curing time before immersion.

Battery Isolator Screw

If you have any Wildlife Computers tag model with a battery isolator screw, you will need to take special care. Once at the deployment location, you will need to fit the screw and cover it with attachment epoxy to isolate it from the water. When the epoxy is dry, then start the painting process.

Tag Preparation

- Sand the tag thoroughly to roughen the surface. Sand all areas except the wet/dry sensors and the Argos whip antenna. Be careful not to damage any external sensors such as the temperature sensor probe.

⚠️ **Note: leave the Peel-Ply in place under the tag.**

- Clean with a rag and isopropyl alcohol or acetone
- Use masking tape to cover the wet/dry sensors. On depth sensing SPLASH tags, cover the pressure sensor opening and mask a 3/8" area above the light sensor, if the tag has one—Fastloc sea turtle tags do not normally have light sensors. A hammer and suitable hollow punch on a wooden or nylon board are ideal for punching out discs of masking tape
- Insert the communication's connector plug and cover with a rectangle of masking tape
- Cut or punch a 6 mm (1/4") circle of masking tape and place this over the LED area to enable viewing once the tag is painted—swipe a magnet over the communication's connector plug to determine the LED position
- A SPLASH tag's external temperature sensors do not need to be masked and can be painted with primer and Micron66
- Clean the tag again with isopropyl alcohol or acetone, avoiding the masking tape. Do not handle the tab without gloves once cleaned

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Interprotect Primer Application

- Mix thoroughly the 2000E primer base
- Measure three parts by volume of 2000E base and one-part 2001E hardener and mix thoroughly
- Allow to rest for 10 minutes to precure
- Apply to tag with a brush, painting all surfaces evenly including Fastloc GPS and the Argos whip antennas—avoid drips and wet areas that will dry at a different rate

Primer Drying Time

⚠️ *Note: it is critically important that the first coat of Micron66 be applied when the primer is still tacky.*

This is determined using a "thumb-print test." After the primer has dried for 10 minutes, use a gloved hand to touch the tag's surface to see if it leaves a print on the paint. If paint sticks to the glove, it needs to dry longer. If the primer feels tacky, and leaves a mark without getting paint on your finger, then it is ready to overcoat with Micron66.

Drying times vary with temperature and humidity; however, 10 minutes is typical in warmer climates.

If the primer is left too long and has cured hard, then another coat of primer will need to be applied and the process repeated for a tacky base.

Micron66 Application and Drying Time

Mix the can of Micron66 well with a strong stir stick. Shaking the can is not effective as the copper will have settled to the bottom of the can so it must be mixed thoroughly.

Immediately brush a coat of Micron66 onto the whole tag and antennas once the primer is tacky.

Minimum drying time between coats is four hours at 35° Celsius (95° Fahrenheit), six hours at 23° Celsius (73° Fahrenheit), and eight hours at 10° Celsius (50° Fahrenheit). It is ideal to leave the tag overnight.

- Apply a second coat of Micron66 and allow to dry as above
- Apply a third coat of Micron66 and allow to dry as above

Masking Tape Removal

After the final coat is dry, put on a pair of disposable gloves and remove the masking tape from the wet/dry sensors, pressure sensor opening, light sensors, and LED.

Tag Handling

⚠️ *Note: tags must only be handled with gloves as Micron66 contains copper and biocides.*

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Store the tags in a Ziploc® bag as Micron66 gives off a strong odor. Store the tags in a cool place. A refrigerator is good but **NOT** with food.

Tag Deployment
The tag can be attached and deployed immediately; however, if more than 30 days have elapsed since the last coat, use a stiff nylon brush to lightly wash and reactivate the top layer.

Resources

International Paints Micron66 Anti-fouling Paint
Micron66 is only available in 5-liter (one gallon) cans.
http://www.yachtpaint.com/LiteratureCentre/micron-66-info-usa-eng.pdf

USA Store Locator: http://www.yachtpaint.com/usa/diy/store-locator/search.aspx

Micron66 is available in the USA and Asia-Pacific regions from International Paints dealers and ship handlers. Micron66 is not available in all countries.

Similar Micron products such as Micron Extra, Micron Extra2, MicronCSC, Micron77 and Micron99 are alternative solutions although Micron66, Micron77 and Micron99 are the most effective. Micron77 may only be available from licensed applicators.

International Paints Primer
"Interprotect 2000E" or "Interprotect" or "Gelsheild 200" (These are the same product). Interprotect is a two-part epoxy primer and is available in 750ml, (one quart) cans.

If Interprotect primer is not available then "Primocon" primer can be used but it is not as effective.

Wildlife Computers AZ-Attchkit-000
Wildlife Computers AZ-Attchkit-000 takes the guess work out of gathering your turtle tagging supplies. For a look at what is included in the kit, view the document.

Appendix 1

Wildlife Computers have been undertaking tests on anti-fouling paint in various parts of the world.

Below is an image of submerged polyurethane and epoxy test plates after two months on a wharf pile in New Zealand.

PropSpeed is at the top and has done a reasonable job but has started to fail. Next is a placebo blank area with no protection that has fouled badly. The next strip down had Micron66 and no primer and the Micron66 has nearly worn away completely.

The Micron66 at the bottom has primer and is pristine. One coat of Interprotect primer and three coats of Micron66 are mandatory for a successful project.
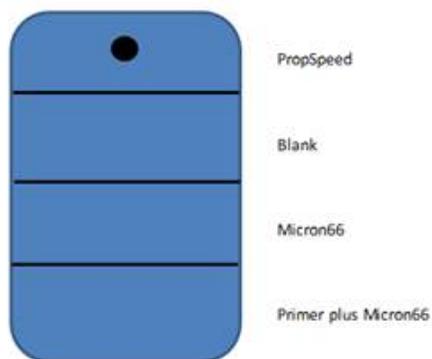
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Members of the Wildlife Computers technical sales and support team are located in Redmond, WA, USA, and Havelock North, New Zealand, allowing us to cover promptly a wide range of time zones.

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While we welcome your direct correspondence, we recommend that you contact our colleague, Yong Huang, for assistance. Mr. Huang understands the special purchase processes for your countries, and will provide you with the best service for the best price. He also is fluent in Japanese, Chinese, and English.

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