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EPA

NOAA

Safer Use Of Boat Bottom Paints

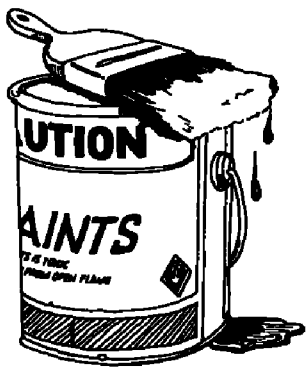
If you use antifouling bottom paints on your boat, you can help protect marine life from the toxic compounds these paint products contain.

This leaflet, prepared by the Environmental Protection Agency and the National Oceanic and Atmospheric Administration, concerns the use of boat bottom paints and the current restrictions on the use of those paints containing tributyltin (TBT). The application of antifouling paints containing TBT to non-aluminum vessels less than 82 feet (25 meters) in length is prohibited. Effective March 1, 1990, only certified applicators will be able to purchase and apply these paints (subject to the spray-container exemption discussed below)

How Boat Bottom Paints Work

Bottom paints contain pesticide ingredients intended to prevent barnacles, seaweed, and other "fouling" organisms from growing on the underwater areas of boats, docks, buoys, and other structures

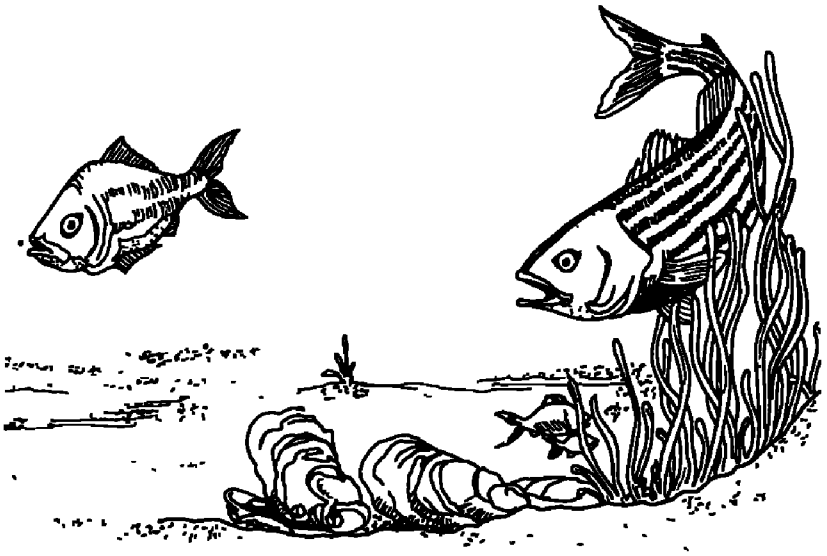
Currently, copper compounds and TBT compounds are the most common pesticide active ingredients in antifouling paints. The copper compound is usually cuprous oxide (Cu_2O). Nine different TBT compounds have been used in antifouling paints.



Paints containing these pesticides are designed to continually release the active ingredient into the water. How fast it is released ("the release rate") depends on a number of factors, including the type and formulation of paint and whether the boat is moving or sitting still

Reasons For Concern

While TBT is toxic to fouling organisms it also has been shown to harm fish and other non-target aquatic life that may be exposed to it in water, sediment, or food sources. Scientists have found that concentrations as low as a few



parts-per-trillion, have caused abnormal development and reduced reproduction in oysters, clams, and snails. Although copper is less toxic than TBT, it also can harm nontarget aquatic organisms

The highest concentrations of TBT and high levels of copper have been recorded around marinas where hundreds of recreational boats are docked for long periods of time. Because marinas are constructed where boats are protected from wind and waves, the pesticide concentrations are not as readily diluted by natural mixing with adjacent waters. These pesticides can accumulate in high concentrations in the sediments and may have a significant impact on the environment even after the source of contamination is gone. In addition, the areas used for marinas are often located on the shallow edges of rivers and estuaries, where many of the most productive shellfish areas are located.

Special Care Is Needed

Those who paint or clean boats need to be especially careful to minimize the amount of copper or TBT compounds that enter our waters.

Careless use of boat bottom paints may release these pesticides into the water. The residues of old paint from scraping and sanding often are washed into the water—either deliberately or by rain. Paint also can be spilled accidentally And sometimes the high-pressure hoses used to wash boat bottoms erode the paint, releasing significant amounts of the pesticides. (According to British reports, careless use accounted for 50 percent of the TBT found in waterways in the United Kingdom.)

Identifying The Paint

Boats intended to be kept out of the water when not in use probably have not been painted with antifoulant. But vessels kept at docks or otherwise in the water most of the time typically are painted with such products.

The law requires that labels on all antifouling paints must list the pesticide active ingredients contained in the paint. They are listed by percent of copper (Cu) or TBT compounds, or copper and TBT together.

Choosing A Paint

If a boat is painted annually, copper-only paints generally provide adequate protection over a full boating season It may even be unnecessary to repaint every year. Scrubbing the bottom periodically extends the useful life of the paint, and there are formulas available that do not decrease in effectiveness with storage out of the water over the winter. Paint dealers or marine suppliers have paints which meet your specific requirements.

Other Ways To Prevent Fouling

At this time, there are few alternatives. Besides removing boats from the water after every use, or scrubbing off barnacle and seaweed growth, use of boat bottom paints containing pesticides is still the principal way to prevent fouling Some experimental paints containing no toxicants may be commercially available soon.

Painting Precautions

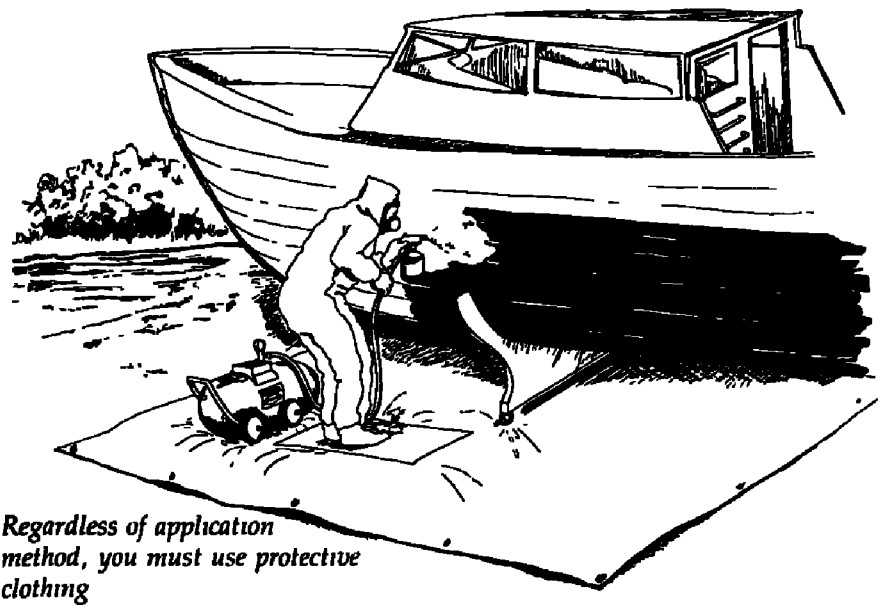
When using a high-pressure hose to clean off the bottom of the boat before painting, watch carefully for color coming off in the wash. If you see any, reduce the hose pressure so the paint and its toxic residues are not washed into the environment.

Try to reduce the amount of paint lost to the air or water as much as possible The best way to apply bottom paints is by brush. Although it takes longer than spraying, you have more control over where the paint is going If you use a roller, avoid spattering paint. A tarpaulin or plastic sheet placed under your boat will help you to contain spilled paint as well as scraping and sanding debris.

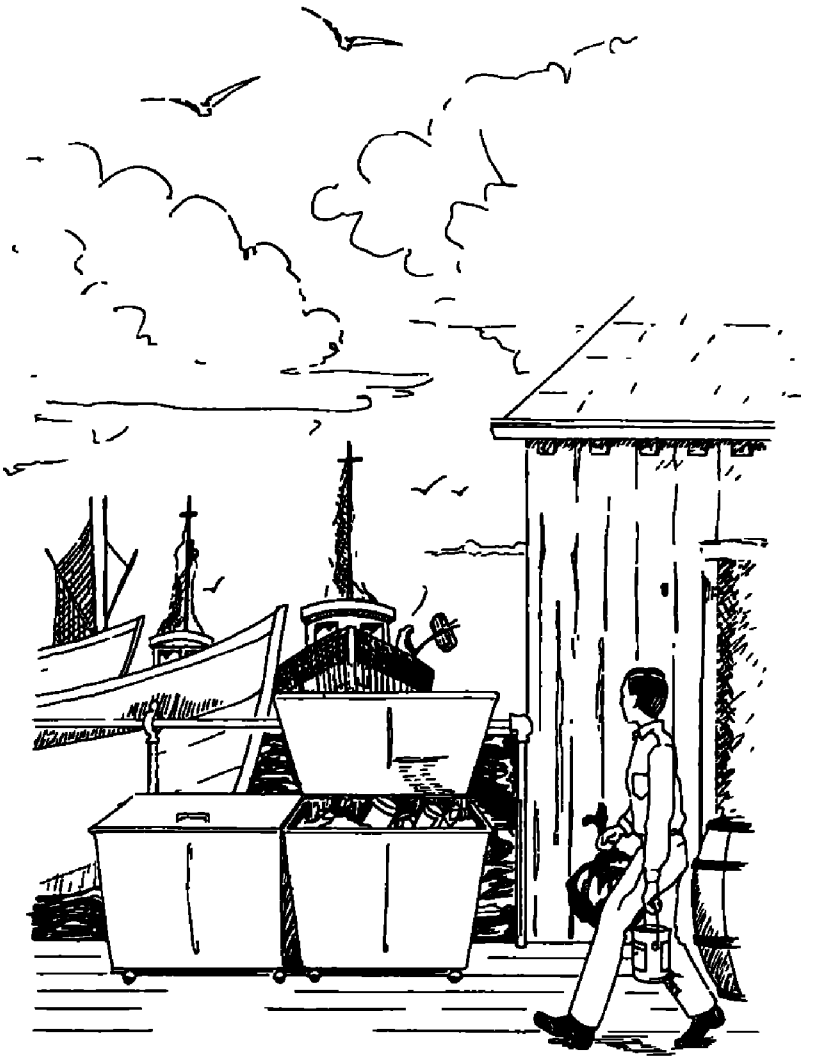
As with all pesticides, users of bottom paints must follow the directions on the label. Work practices specified on labels include

- Minimize possible exposure by wearing a long-sleeved shirt, long pants or coveralls, a hat, and chemical-resistant gloves when applying or removing antifoulant paints
- Protect your eyes from paint dust and chips from spattering paint by wearing goggles, a face shield, or safety glasses.
- Avoid breathing the dust when sanding bottom paint or spray painting by wearing a disposable dust mask or respirator, such as a NIOSH/MSHA TC-21C.
- Avoid breathing solvent vapors by painting your boat in a well-ventilated area. If painting in a garage, storage shed, or other indoor location, keep windows and doors open so there will be fresh air during application and drying.
- When you finish using bottom paints, wash yourself thoroughly with soap and water Wash your contaminated clothing separately from household laundry.

Additionally, if your eyes water, you feel dizzy, or get a headache, stop work for a while and leave the area. If the condition persists call your doctor In any event, don't resume work without increasing the ventilation in the area or wearing respiratory protection, such as a NIOSH/MSHA TC-23C paint respirator.



Regardless of application method, you must use protective clothing



Cleanup Procedures

Sweep up all paint chips, spent abrasives, or sanding dust left from the removal of old boat bottom paint, and put them in a trash receptacle or other container for later disposal. If you spill any paint, wipe it up immediately. Don't use a hose to wash the paint down a sewer or onto the ground. Never wash out or burn old boat bottom paint cans or the brushes used to apply these paints. Leftover paint should be kept in a tightly sealed container and placed in a trash receptacle. Wet brushes should be wrapped in newspaper before being discarded. The ultimate disposal of these materials should be in areas designated for collection of hazardous household waste or through special community collections of such waste. Ask if your marina or marine service facility has hazardous-waste disposal services that you could utilize.

Current Restrictions

Federal law prohibits the use of bottom paint containing TBT on vessels less than 82 feet (or 25 meters) long, except for aluminum hulls and aluminum outdrives and outboard motors, and bars the use on any boat or boat part of any TBT boat bottom paint with a release rate in excess of 4.0 micrograms per square centimeter per day. Paints with a higher release rate were banned from sale after December 16, 1988. EPA also has imposed these additional restrictions:

- The sale of TBT paint will be restricted to certified pesticide applicators as of March 1, 1990. This does not apply to 16 oz. spray containers registered for use on aluminum motors or lower drive units of vessels, which may be used by non-certified persons.

- Application or removal of TBT paint is restricted to certified pesticide applicators and/or to persons working under their direct supervision as of March 1, 1990.

- Additional specific application, removal and disposal instructions are required on labels

Many coastal states have their own legal restrictions on the sale or use of antifouling paints. These may be even more stringent than the federal law. Contact your state boating law administration for more information on what state restrictions may apply to you.

Monitoring of TBT concentrations will continue to determine if further restrictions are necessary.

Things To Remember When Selecting And Using Boat Bottom Paints

To help reduce the hazards from boat bottom paints:

Choose Paint Carefully

Choose the proper boat bottom paint to meet your specific needs. If you paint annually, copper-only paints will generally give adequate protection. If you haul your boat annually, select a paint that will last for more than one season.

Some stores sell TBT paint additives. It is a federal offense to add this type of product to any paint to create an antifoulant paint for use on vessel hulls, motors, or other structures that may contact marine or fresh water

Avoid Unnecessary Scrubbing

Never scrub more than necessary when cleaning the bottom of your boat. Scrub on the ebb tide if the boat is afloat or on scrubbing piles. In a boatyard, take precautions when using the high-pressure hose to prevent washing antifoulant back into the water. If the wash water appears discolored, you are wasting paint and washing the pesticides from the paint off the boat bottom. Reduce the spray pressure until the discoloration stops.

Apply Paint Carefully

Choose a place to remove and apply bottom paints where paint scrapings and sandings can be cleaned up, and where waste from new painting can't enter the water. The location should be above the high-water mark Avoid spraying or introducing paint into the air or onto other surfaces. As with any pesticide, wear any required clothing, as specified on the label.

Follow Proper Cleanup Procedures

Clean up when you've finished. Make sure that old cans, buckets, brushes, rags, blasting sand, paint chips, and scrapings are collected and disposed of properly.

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