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Fact Sheet

Notice of Ambient Water Quality Criteria Document for Tributyltin (TBT) - Draft

Summary

The U.S. Environmental Protection Agency has published a draft ambient water quality criteria document for tributyltin (TBT) for scientific and technical input. Draft acute and chronic criteria recommendations have been developed to protect aquatic life in both freshwater and saltwater. When finalized, these draft criteria can form the basis for state and tribal water quality standards.

Background

The U.S. Environmental Protection Agency (EPA) has published a draft ambient water quality criteria document for tributyltin (TBT) for scientific and technical input. This document contains draft ambient water quality criteria to protect aquatic organisms and their uses. These draft criteria are technical information for states and tribes and, in themselves, have no binding legal effect. When finalized, these criteria can form the basis for state and tribal water quality standards. These draft TBT criteria are published pursuant to Section 304(a) of the Clean Water Act.

What is tributyltin?

Tributyltin is one of several organotin compounds with several industrial uses. Organotins are organometallic compounds; they contain one or more direct links between a carbon atom and a metal atom.

How is TBT used?

Tributyltin is primarily used as a biocide in antifouling paints applied to ship hulls to keep barnacles and other organisms from attaching to the hull. TBT remains effective over long periods on the ship hull because it is released very slowly from the hull into the water column over time. This keeps organisms from attaching to the hull.

What are the environmental effects of TBT?

Tributyltin is extremely toxic to aquatic life. It is especially toxic to bivalves, such as oysters and other mollusks. It is an endocrine-disrupting chemical that causes severe reproductive effects in aquatic organisms. In addition, recent studies show that exposure to TBT makes oysters very susceptible to infection and death from exposure to pathogens.

What are the new draft criteria concentrations?

In August 1997, EPA published a draft ambient water quality criteria document for TBT which contained freshwater and saltwater criteria. With this notice, EPA is issuing new draft criteria for TBT. The primary difference between the initial draft and the new draft criteria is that the saltwater chronic criterion has been lowered from a four-day average of 0.01 ug/l, not to be exceeded more than once in three years, to a four-day average of 0.001 ug/l, not to be exceeded more than once in three years. EPA set the criterion at this level to protect saltwater organisms from the adverse reproductive effects of tributyltin that have been observed in laboratory and field studies and because exposure to TBT can make saltwater organisms more vulnerable to infection from pathogens.

Freshwater Aquatic Life:

EPA has determined that, except possibly where a locally important species is very sensitive, freshwater aquatic life and their uses should not be affected unacceptably if the four-day average concentration of tributyltin does not exceed 0.063 ug/L more than once every three years on the average and if the one-hour average concentration does not exceed 0.46 ug/L more than once every three years on the average.

Saltwater Aquatic Life:

EPA has determined that, except possibly where a locally important species is very sensitive, saltwater aquatic life and their uses should not be affected unacceptably if the four-day average concentration of tributyltin does not exceed 0.001 ug/L more than once every three years on the average and if the one-hour average concentration does not exceed 0.38 ug/L more than once every three years on the average.

What are the environmental benefits from these new draft criteria?

The new TBT draft criteria provide more protection for commercially and ecologically important species, including oysters. The revised saltwater chronic criterion protects saltwater organisms from the adverse growth and reproductive effects of TBT.

How do I obtain a copy of the document?

Copies of the complete document, titled *"Ambient Aquatic Life Water Quality Criteria for Tributyltin (TBT) - Draft" (EPA-822-B-02-001)* may be obtained from EPA's Water Resource Center by phone at 202-566-1729, or by e-mail to waterpubs@epamail.epa.gov, or by conventional mail to EPA Water Resource Center, RC-4100T, 1200 Pennsylvania Ave., Washington, DC 20460. The document is also available electronically at: www.epa.gov/waterscience/criteria/tributyltin.