



California Notice 2018-03

POST UNTIL February 16, 2018

FINAL DECISION CONCERNING REEVALUATION OF COPPER BASED ANTIFOULING PAINT PESTICIDES

The Director of the Department of Pesticide Regulation (DPR) files this notice with the Secretary of the California Natural Resources Agency for posting pursuant to Title 3, California Code of Regulations (CCR). CCR requires the Secretary of the California Natural Resources Agency and DPR to post this notice for thirty (30) days for public inspection.

REEVALUATION

On June 1, 2010, DPR commenced reevaluation of products containing the active ingredients copper oxide, copper hydroxide, and cuprous thiocyanate and intended for use as antifouling paint (AFP) pesticides (California Notice 2010-03). This reevaluation involved 11 registrants and 209 pesticide products. A list of products included in the reevaluation is available on DPR's Web site at <http://cdpr.ca.gov/docs/registration/reevaluation/chemicals/antifoulant_paints.htm>.

BASIS OF REEVALUATION

DPR placed copper-based AFP pesticide products containing the active ingredients copper oxide, copper hydroxide, and cuprous thiocyanate into reevaluation based on findings from a June 2009 DPR report titled, *Monitoring for Indicators of Antifouling Paint Pollution in California Marinas*. The report indicates dissolved copper concentrations in more than half the water samples taken from salt and brackish water marinas exceeded the U.S. Environmental Protection Agency (U.S. EPA) California Toxics Rule chronic water quality standard for copper, a criterion intended to protect aquatic life. In addition, about one-third of the water samples exceeded the acute water quality standard for copper. DPR also observed toxicity to aquatic test organisms in some marina samples that was likely caused by high dissolved copper concentrations.

DPR's report concluded that in salt and brackish water marinas, copper-based AFP pesticide products applied to recreational boat hulls are likely a major source of copper in these areas, particularly during dry-weather periods. Passive leaching of copper-based AFP-painted boat hulls and underwater boat-hull cleaning appear to be the main pathways of copper contamination. Since the California Regional Water Quality Control Board (CRWQCB) water quality objectives require "all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life," DPR determined additional data were necessary to determine the leaching potential of copper-based AFP and measures to reduce copper loading in marinas in order to protect non-target aquatic organisms.



During the course of this reevaluation, DPR required registrants of copper-based AFPs to submit the following: (1) information identifying the paint type (e.g., ablatives, epoxy ester); (2) data characterizing the product's copper leach rate; (3) specific mitigation strategies that reduce dissolved copper concentrations in California salt and brackish water marinas; and (4) marina monitoring data. In March 2011, copper-based AFP registrants were notified of an additional data requirement to examine the impact of in-water hull cleaning activities on copper concentrations in California marinas. Meanwhile, DPR began taking steps to address the problems surrounding the use of copper-based AFP pesticide products. This included collaborative mitigation and outreach opportunities with partners, including U.S. EPA, to reduce copper concentrations in California marinas.

REEVALUATION SUMMARY

DPR completed its evaluation of leach rate and paint type information for all copper-based AFP pesticide products subject to the reevaluation and continued to require this data for newly registered products using the International Organization for Standardization (ISO) method 10890:2010 to determine each copper-based AFP's release (leach) rate. Using this data and an established adjustment factor for comparison to actual environmental leach rates, DPR calculated a final daily mean copper leach rate.

In June 2012, DPR approved the American Coating Association-Antifouling Working Groups' in-water hull cleaning study protocol and the study was initiated. DPR requested academia be involved in all aspects of this study and the findings be submitted to a peer-reviewed journal. On November 7, 2013, the final report titled, *Life Cycle Contributions of Copper from Vessel Painting and Maintenance Activities* was published in *Biofouling: The Journal of Bioadhesion and Biofilm*.

In February 2013, the California Legislature introduced Assembly Bill (AB) 425, which required DPR to propose a leach rate for copper-based AFPs used on recreational vessels and recommend mitigation measures to protect the aquatic environment from copper-based AFP exposure. On October 5, 2013, AB 425 was signed into law. On January 30, 2014, DPR proposed two maximum allowable leach rates depending on hull cleaning practices: (1) $9.5 \mu\text{g}/\text{cm}^2/\text{day}$, if cleaning was limited to no more than once per month and best management practices using soft-pile carpet were followed; and, (2) $13.4 \mu\text{g}/\text{cm}^2/\text{day}$ for products that prohibited in-water hull cleaning. DPR presented the leach rates and several other mitigation recommendations to registrants, stakeholders, and regulatory agencies at meetings across the state. DPR also collaborated with the Port of San Diego and other state and local water agencies to develop boater education and outreach material for Southern California.

Based on the results of the required hull cleaning study, utilization of the Marine Antifoulant Model to Predict Environmental Concentrations (MAMPEC) modeling tool (to simulate the fate of copper in typical California marinas), discussions with stakeholders, and accounting for enforcement challenges, DPR determined that establishing a single maximum allowable leach rate of 9.5 $\mu\text{g}/\text{cm}^2/\text{day}$ for copper-based AFP products intended for use on recreational vessels would be the most effective measure to reduce copper contamination in California surface waters. In early 2016, DPR initiated the rulemaking process, proposing to require registrants of all new copper-based AFP products and coatings to submit copper leach rate data and establish a maximum allowable copper leach rate for products used on recreational vessels. DPR submitted its leach rate methodology for external scientific peer review and the comments were largely supportive of DPR's methodology. On November 18, 2016, DPR issued the proposed regulatory action on copper-based AFP and coatings for a 45-day public comment period. On January 20, 2017, DPR gave a presentation to the Pesticide Registration and Evaluation Committee (PREC) regarding the status of the reevaluation and DPR's copper mitigation activities. On July 21, 2017, the new copper-based AFP and coatings regulation was filed with the Secretary of State.

FINAL REEVALUATION DECISION

Effective January 1, 2018, the regulation requires all registrants of new copper-based AFP and coating products to submit copper leach rate data using ISO method 10890:2010. Effective July 1, 2018, the regulation establishes a maximum allowable copper leach rate of 9.5 $\mu\text{g}/\text{cm}^2/\text{day}$ for all copper-based AFP and coating product labeled for use on recreational vessels. DPR has determined no additional mitigation measures are necessary at this point. Therefore, the reevaluation is concluded.

For information regarding DPR's Reevaluation Program, please visit DPR's Web site at <http://cdpr.ca.gov/docs/registration/reevaluation/reevals.htm> or contact Ms. Denise Alder at Denise.Alder@cdpr.ca.gov or by telephone at 916-324-3522.

Original signed by Ann M. Prichard

Ann M. Prichard, Chief
Pesticide Registration Branch
916-324-3931

January 16, 2018

Date

cc: Ms. Denise Alder, Senior Environmental Scientist (Specialist), DPR
Mr. Nan Singhasemanon, Senior Environmental Scientist (Supervisory), DPR