ENVIRONMENTAL PROTECTION AGENCY

[FRL-11976-01-OW]

Acute Aquatic Life Screening Values for 6PPD and 6PPD-Quinone in Freshwater

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is announcing the availability of Acute Freshwater Aquatic Life Screening Values for 6PPD (N-(1,3-Dimethylbutyl)-N′-phenyl-p-phenylenediamine) and its transformation product 6PPD-quinone (6PPD-q; N-(1,3-Dimethylbutyl)-N′-phenyl-p-phenylenediamine quinone). The EPA developed these screening values as information under Clean Water Act (CWA) section 304(a)(2)(B) on factors for the protection of aquatic life. States and authorized Tribes may consider these screening values in their water quality protection programs. The screening values for acute exposures to 6PPD and 6PPD-q in freshwater are 8,900 nanograms per liter (ng/L) and 11 ng/L, respectively. Consistent with CWA section 304(a)(2), the EPA expects to update these screening values from time to time as new information becomes available. This announcement is in accordance with CWA section 304(a)(3), which directs the EPA to publish information developed under 304(a)(2) in the *Federal Register* and make it available to states, authorized Tribes, and the public.

FOR FURTHER INFORMATION CONTACT: Amanda Jarvis, Health and Ecological Criteria Division, Office of Water (Mail Code 4304T), Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, D.C. 20460; telephone number: (202) 566-1163; email address: jarvis.amanda@epa.gov.

SUPPLEMENTARY INFORMATION:

I. What are 6PPD and 6PPD-quinone and How Do They Affect Aquatic Life?

6PPD-quinone (6PPD-q) is a breakdown product of the rubber-tire antioxidant compound 6PPD (N-(1,3-Dimethylbutyl)-N′-phenyl-p-phenylenediamine). Detections of 6PPD and 6PPD-q in waterways across the United States and elsewhere indicate that they are present in aquatic systems and may present a potential risk to aquatic organisms. Although "urban stream syndrome" or "urban runoff mortality syndrome" (URMS) was first reported in Puget Sound during monitoring of urban streams between 1999 and 2001, URMS was not linked to 6PPD-q until 2021 by Tian et al. (2021). URMS describes the death of adult salmon fish (particularly coho salmon) returning from the ocean to urban waterways and was first reported in Puget Sound (Washington, USA) during monitoring of urban streams between 1999 and 2001.

II. What are Aquatic Life Screening Values?

The EPA derived these screening values in accordance with section 304(a)(2) of the Clean Water Act (CWA) to provide States, authorized Tribes, and stakeholders with the best available information on the toxicity of 6PPD and 6PPD-q to aquatic organisms. They are distinct from national recommended ambient water quality criteria (AWQC) issued in accordance with the provisions of section 304(a)(1) of the CWA for protection

of aquatic life from toxic chemicals. Empirical data are very limited for 6PPD and 6PPD-q and do not fulfill the EPA's data requirements for deriving national recommended AWQC. Further, much of the available data were developed using aquatic toxicity testing approaches that do not fully conform with EPA's 850 Ecological Effects Test Guidelines or other standard test guidelines, such as those of the American Society for Testing and Materials (ASTM) or the Organisation for Economic Co-operation and Development (OECD). These deviations from standard testing methods made the derived toxicity values and the derived screening values more uncertain than national recommended AWQC. These screening values are based solely on data and scientific judgments about the relationship between 6PPD and 6PPD-q concentrations and potential effects to aquatic organisms.

What are EPA's 6PPD and 6PPD-q Aquatic Life Screening Values in Freshwater?

The EPA's 6PPD and 6PPD-q aquatic life screening value documents provide a critical review of 6PPD and 6PPD-q toxicity data, quantify the toxicity of these chemicals to aquatic life based on available data, and provide separate acute screening values for 6PPD and 6PPD-q.

Under CWA section 304(a)(2)(B), the EPA develops, from time to time, information "on the factors necessary for the protection and propagation of shellfish, fish, and wildlife." The EPA developed the 6PPD and 6PPD-q acute screening values (Table 1 of this document) to support protection of most freshwater aquatic communities. The EPA's acute screening values are the maximum concentrations of 6PPD and 6PPD-q (individually, not in mixtures), with associated frequency and duration specifications, that

are expected to support protection of aquatic life from acute effects in freshwaters based on currently available science (see Table 1 of this document). There were insufficient data for 6PPD and 6PPD-q to derive chronic screening values in freshwaters, and acute and chronic values in estuarine/marine waters.

In accordance with CWA section 304(a)(2)(B), the acute freshwater screening values for 6PPD and 6PPD-q are provided only as information for states and authorized Tribes that they may consider for the protection of aquatic life as part of their water quality protection programs. The development of aquatic life screening values as information under CWA section 304(a)(2) does not impose legally binding requirements on the EPA or the regulated community. Further, the aquatic life screening values are not regulations and do not substitute for the CWA or the EPA's regulations.

Table 1. Recommended Aquatic Life Acute Screening Values for Freshwater (ng/L).

	6PPD	**6PPD-q**
	8,900	11
Duration	1 hour	
Frequency	Not to be exceeded more than once in three years on average	

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