

Chapter 25: Methyl Mercury

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Potential Food Safety Hazard

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The draft Fish and Fishery Products Hazards and Controls Guide (February 16, 1994) listed methyl mercury as a potential safety hazard for bonito, halibut, Spanish mackerel, king mackerel, marlin, shark, swordfish, and bluefin tuna. The selection of these species was based on historical data on levels of methyl mercury found in fish consumed in the U.S. The selection was also based on an FDA action level of 1.0 ppm in the edible portion of fish.

While FDA has not changed the 1.0 ppm action level, the agency is re-evaluating it in light of significant new data on the health effects of methyl mercury from consumption of fish. These data have become available since the action level was developed (FDA, 2001).

Control Measures

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When the action level re-evaluation is completed, FDA will, among other things, update this Guide by including advice on how to assess the significance of a potential methyl mercury hazard in fish, and what controls, if any, are necessary to ensure the safety of fish in this regard (FDA, 2001).

FDA Guidelines

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FDA guideline for methyl mercury.

Product	Guideline	Reference
In edible portion of the fish	1 ppm methyl mercury	FDA, 1996

While FDA has not changed the 1.0 ppm action level, the agency is re-evaluating it in light of significant new data on the health effects of methyl mercury from consumption of fish. These data have become available since the action level was developed (FDA, 1998).

Analytical Procedures

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- Mercury (methyl) in fish and shellfish: Gas chromatographic method (AOAC, 1995a).
- Mercury (methyl) in fish and shellfish: Rapid gas chromatographic method (AOAC, 1995b).
- Mercury (methyl) in seafood: Liquid chromatographic - atomic absorption spectrophotometric method (AOAC, 1995c).

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AOAC. 1995a. Mercury (methyl) in fish and shellfish: Gas chromatographic method. Sec. 9.2.26, Method 983.20. In *Official Methods of Analysis of AOAC International*. 16th ed., P.A. Cunniff (Ed.), p. 22-24. AOAC International, Gaithersburg, MD.

AOAC. 1995b. mercury (methyl) in fish and shellfish: Rapid gas chromatographic method. Sec. 9.2.27, Method 988.11. In *Official Methods of Analysis of AOAC International*. 16th ed., P.A. Cunniff (Ed.), p. 24-25. AOAC International, Gaithersburg, MD.

AOAC. 1995c. Mercury (methyl) in seafood: Liquid chromatographic - atomic absorption spectrophotometric method. Sec. 9.2.28, Method 990.04. In *Official Methods of Analysis of AOAC International*. 16th ed., P.A. Cunniff (Ed.), p. 26-28. AOAC International, Gaithersburg, MD.

FDA. 1996. Fish, shellfish, crustaceans and other aquatic animals - fresh, frozen or processed - methyl mercury (CPG 7108.07). Sec. 540.600 (rev. 3/95). Compliance Policy Guides August 1996. p. 237. Department of Health and Human Services, Food and Drug Administration, Washington, DC.

FDA. 2001. Methyl Mercury. Ch. 10. In *Fish and Fishery Products Hazards and Controls Guidance*. 3rd ed., p. 125-126. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Seafood, Washington, DC.