

# Testing Bottled Water

## Continually Evolving Regulations for D/DBPs

The bottled water industry continues to strive to produce a quality product that inspires consumer confidence.

One of the most important (and sometimes the most complex) area of the bottled water business is compliance with federal, state and industry regulations. As the EPA continues to evaluate contaminants in drinking water for regulation under the Safe Drinking Water Act (SDWA), the FDA must review these regulations for their suitability for bottled water.

On March 28, 2001, the U.S. Food and Drug Administration (FDA) published a Direct Final Rule for Disinfectants and Disinfection Byproducts (D/DBPs) in the Federal Register.

On July 5, 2001, the FDA confirmed the effective date of Jan. 1, 2002, for the D/DBPs final rule. Therefore, bottled water "on the shelf" as of Jan. 1, 2002, must be in compliance with D/DBPs regulations.

The rule establishes allowable levels for the following.

	MCL (mg/l)
<b>Residual disinfectants:</b>	
Chloramine*	4.0
Chlorine*	4.0
Chlorine Dioxide*	0.8
<b>Disinfection byproducts (DBPs)</b>	
Bromate	0.01
Chlorite	1.0
Halocetic Acids (HAAs)	0.06

The rule also revised allowable levels for the DBPs Total Trihalomethanes (TTHMs) to an MCL of 0.08 mg/l.

**As of Jan. 1, 2002, the FDA will be requiring testing "at least" annually on all types of finished product water and chlorinated or ozonated sources for the D/DBPs.**

In the Federal Register, the FDA states,

"FDA recognizes that some bottled water products may be in the



Photo provided by the International Bottled Water Association.

marketplace and remain there for two or more years. Thus, there may be some products already in interstate commerce on the effective date that have not been tested under the new part 129 requirements for disinfectants and disinfection byproducts and that do not meet the revised standard of quality.

not meet the revised quality standard for the three residual disinfectants and the four types of DBPs unless they bear a statement of substandard quality. However, FDA believes that it would be appropriate to exercise its enforcement discretion as to those bottled water products that

- Are already in interstate commerce before Jan. 1, 2002,
- Do not meet the revised quality standard for the three residual disinfectants and the four types of DBPs, and
- Do not bear a statement of substandard quality-provided that such products are not adulterated.

Therefore, the agency does not plan to take enforcement action against such

bottled water products, provided that such products are safe."

In short, although bottled water on the shelf as of January 1, 2002, would be out of compliance if it does not comply with the bromate MCL, the FDA currently does not intend to take any action such as an off-the-shelf study. If any other organization should decide to perform such a study, non-compliance could result in the need for a recall.

#### Source Water Requirements

Only sources that are treated with chlorine-based disinfectants or ozone will require testing for DBPs and residual disinfectants. Bottlers using public water supply (PWS) sources and those receiving sources water via disinfected tanker transport also would be required to do this testing.

#### Frequency of Testing

For 2001, the International Bottled Water Association (IBWA) is requiring quarterly bromate and bromide testing on all types of finished product water and quarterly bromide and chloride testing on all types of source water including municipal sources.

As of Jan. 1, 2002, the FDA will be requiring testing "at least" annually on all types of finished product water and chlorinated or ozonated sources for the D/DBPs. We are waiting clarification on frequency of testing from the FDA.

Some states are expected to require quarterly bromate/bromide monitoring but we are still waiting for more information.

#### Sources of Contaminants

Bromate can be formed when bromide, a naturally occurring inorganic ion, is exposed to ozone. The conversion of bromide to bromate varies based upon the amount of bromide present, matrix of the water and total concentration/time of ozone exposure (CT Value). The maximum amount of bromate that could be formed can be calculated by multiplying the bromide level present in the raw source by 1.6. Therefore, sources with bromide above 0.0063 mg/l could exceed the allowable limits for bromate.

THMs & HAAs are formed as a result of chlorine disinfections. They are formed when chlorine reacts with organic matter in the water. TTHMs is the sum (in mg/l) of the concentration of the trihalomethane compounds

- Trichloromethane (chloroform),
- Dibromochloromethane,
- Bromodichloromethane, and
- Tribromomethane (bromoform)

\* *Awaiting FDA and state guidance regarding methodology, certification and frequency of testing requirements.*

#### **About the Authors**

Barbara L. Marteney and Kristin M. Safran of National Testing Laboratories, Ltd. specialize in consulting with bottled water companies regarding testing requirements. They maintain contacts with bottled water regulators, industry associations and the FDA regarding regulatory changes and

### ***Bottled water “on the shelf” as of Jan. 1, 2002, must be in compliance for D/DBPs regulations.***

Chlorite is a disinfection byproduct that is formed as chlorine dioxide decomposes.

These regulations and recommendations may be subject to change; therefore, bottlers should verify the current requirements with their laboratory representative before ordering any testing.

bottled water issues. They have authored numerous articles and given presentations regarding state, federal and international bottled water regulations.

Marteney and Safran can be reached by phone at 800-458-3330 or 440-449-2525 (Marteney, ext. 217; Safran, ext. 215); food-bev@watercheck.com.

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