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International Bottled Water Association

Position Statement

### **Debunking Myths About Dioxin in Bottled Water Kept in Either Hot or Cold Conditions**

Claims that PET (polyethylene terephthalate) plastic bottled water containers stored in either warm environments (e.g., a hot automobile), or in frozen state, “leach” dioxin which then causes breast cancer or other maladies, are false and not based in science. There are no studies which prove this theory. These allegations have been perpetuated by viral emails quoting celebrities and related media hype that only serve to frighten and confuse consumers.

Dioxins are a family of compounds that can only be formed during combustion at temperatures typically above 700 degrees Fahrenheit; they cannot be formed at temperatures likely to be experienced in a hot car or in freezing temperatures.

Furthermore, the vast majority of plastics used in food wraps, packaging containers and beverage bottles do not contain the chemical constituents that form dioxins, namely chlorine. On a purely scientific basis, heat or freezing temperatures cannot create chloride or any form of chlorine from the molecular structure of PET plastic.

#### *PET Plastic in Elevated Temperatures*

The U.S. Food and Drug Administration (FDA) comprehensively regulates the safety of foods and beverages, including bottled water. This includes a careful review of food and beverage packaging materials, including plastics, before allowing them on the market.

With respect to leaving bottled water in a hot car, FDA has stated:

- “It is true that exposing the bottle to higher temperatures may imply a greater degree of migration of substances from the plastic to the water [*ed. note: or other beverages in similar containers*]. However, in its safety review, the FDA takes into account exposures to higher temperatures, such as during storage and transportation of bottled water prior to sale, in its estimates of potential levels of migration of substances from the plastic to the water.”
- “The levels of migration expected, including during periods of exposure to elevated temperatures in storage and transport (such as might be experienced in a closed vehicle in the sun) have, as discussed above, been determined by the agency to be well within the margin of safety. Therefore, the agency does not consider this situation to be a safety concern.”

## *PET Plastics Exposed to Freezing Temperatures*

In an interview conducted on July 14, 2005, Rolf Halden, Ph. D. of the Department of Environmental Health Sciences at the Johns Hopkins Bloomberg School of Public Health, set the record straight on dioxins in bottled water and refuted claims that dioxins were released when water was frozen in plastic bottles. "This is an urban legend," he said. "There are no dioxins in plastics. In addition, freezing actually works against the release of chemicals. Chemicals do not diffuse as readily in cold temperatures, which would limit chemical release if there were dioxins in plastic, and we don't think there are."

## *The Science and Safety of PET Plastic*

For approved plastics, FDA has found that the levels of migration to food of the substances due to the use of the plastics in contact with food are well within the margin of safety based on information available to the agency (i.e., toxicological testing has demonstrated that the cumulative dietary concentration of these migrants resulting from the use of the plastic materials in food packaging is at least 100 to 1000 fold lower than the level at which no toxic effect was observed in animal studies.) This means no short or long term health effects are likely to occur, even from life-long, daily dietary exposure to these substances migrating from plastic food-contact materials.

The toxicological properties of PET, a common plastic used for bottled water and beverage containers, and compounds that migrate under test conditions have been well studied. In its report on PET in food packaging applications, the International Life Sciences Institute (ILSI) summarized the large body of test data and demonstrated the safety of PET resins and compounds from food and beverage containers.

A wide variety of consumer packaging made from plastic, not just bottled water containers. The International Bottled Water Association recommends that consumers handle and store bottled water containers with the same care and respect as they would any other food or beverage product.

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*The International Bottled Water Association (IBWA) is the authoritative source of information about all types of bottled waters. Founded in 1958, IBWA's membership includes U.S. and international bottlers, distributors and suppliers. IBWA is committed to working with the U.S. Food and Drug Administration (FDA), which regulates bottled water as a packaged food product, and state governments to set stringent standards for safe, high quality bottled water products. In addition to FDA and state regulations, the Association requires member bottlers to adhere to the IBWA Bottled Water Code of Practice, which mandates additional standards and practices that in some cases are more stringent than federal and state regulations. A key feature of the IBWA Bottled Water Code of Practice is an annual, unannounced plant inspection by an independent, third party organization. Consumers can contact IBWA at 1-800-WATER-11 or log onto IBWA's web site ([www.bottledwater.org](http://www.bottledwater.org)) for more information about bottled water and a list of members' brands. Media inquiries can be directed to Vice President of Communications Tom Lauria at 703-647-4609 or [tlauria@bottledwater.org](mailto:tlauria@bottledwater.org).*