

1997 to Today: Ahead of the Curve, OSMOTIC AQUATIC®THE PURIFIED ICE Meets Official Purified Water Definitions

Consumer Environment: Drinking Water Quality Concerns Increase, Generational Health Attitudes Change

1990s Environmental and consumer protection organizations raise consumer awareness of our nation's public water contamination issues; begin to correlate known and suspected contaminants to short- and long-term health issues. Concerns are supported by actual drinking water health-related events. • 1990 to 2000, at least 10 cryptosporidiosis outbreaks are officially connected to contaminated drinking water in the United States (CDC) • 1993 Milwaukee, Wisconsin. Four hundred thousand people are infected due to the ingestion of *Cryptosporidium* in their tap water. Cause: *Cryptosporidium* contamination at the site of one of the city's main water treatment plants. • Based on public water sample tests, reports state that millions of consumers are drinking water that contains health-related contaminants, some of which are carcinogenic. Water problems affect small as well as major population centers. • Attitude and opinion studies indicate Americans are aware of drinking water pollution and contamination problems. • Broad-based negative view of drinking water quality moves consumers to embrace band-aid solutions. Devised to improve the taste of water and filter some contaminants, on-tap and pitcher filtration devices relieve some worries about dangerous bacteria that could cause instant illness. However, none of the filtering devices remove the hundreds of contaminants that have the potential to affect health on a long-term basis.

Breakthrough reverse osmosis membrane technology becomes available; pushes contaminant RO removal capabilities to 99%+ level. Reverse osmosis becomes viable as cost-effective commercial process to produce massive quantities of purified water. Nationally, negative reports about drinking water quality proliferate, are met by psychologically ready consumer market. Generational attitude studies indicate marked change in health concerns.

Boomers: New interest in getting healthier. Bottles of water become nineties Boomer icon, continues and strengthens into new millennium. Faucet filters become kitchen and bath icons of the new water-based concerns. **GenXers:** Display high concern about health hazards. GenXers see health hazards as stressful; GenXers profile shows they will avoid stress at all costs. Convenience important to GenXers. **Generation Y New Millenniums:** GenYs are strong environmentally, are activists, have serious concerns about health. Bottled water: part of their native experience, unlikely to let it go. Best educated generation in history. They want quality. They are the 9/11 generation; terrorism marks their group in history.

Many consumers did not connect contaminant concerns in tap water to their home icemaker; Brunswick Ice did.

Brunswick Ice determines that production of purified water is only real answer to removal of dissolved mineral and organic solids and compounds, micro-contaminants. Brunswick Ice begins process to fully convert Lawrenceville ice plant to a purified ice plant. Creates multi-level system that includes activated carbon adsorption and post-purification ultraviolet disinfection. **The proprietary BRUNSWICK ICE OSMOTIC AQUATIC® PURIFIED ICE SYSTEM is comprised of a multi-step water treatment train that changes entering EPA-regulated water to purified water and then to OSMOTIC AQUATIC purified ice.**

Entering water meets U.S. EPA National Primary Drinking Water Regulations (NPDWR as specified in ©2006 USPC, Inc., Official 4/1/06-7/1/06 USP Monographs: Purified Water) passes through four filtrations prior to the reverse osmosis purification:

- a 25-micron filter
- a secondary multi-media filter
- an activated carbon filter (carbon adsorption)
- a 5-micron filtration

prepared water moves to:

- reverse osmosis purification at high pressure through 0.001-micron RO membranes
- continuous ultraviolet disinfection at 253.7 nanometers of finished water
- air filtration to treat air in enclosed finished water tank

Purified water moves to Morris Nugget™ Ice Maker to ensure clear quality of the purified water is maintained when frozen.

Quality conscious, entrepreneurial Brunswick Ice first in International Packaged Ice Association to produce and market branded, packaged ice made from Reverse Osmosis purified water. OSMOTIC AQUATIC becomes registered trademark.

Overarching the purity of its ice product is the Brunswick Ice commitment to food safety in processing and handling.

OSMOTIC AQUATIC®THE PURIFIED ICE recognized by the Virginia Department of Agriculture as a processed food product under the Virginia's Finest Program.

Brunswick Ice is first U.S. ice producer to attain the combined ice quality and food safety PIQCS PLUS designation. The PIQCS PLUS designation indicates that the ice producer not only meets the International Packaged Ice Association's Packaged Ice Quality Control Standards but also meets the requirements of the Hazard Analysis/Critical Control Point System.

A preventive food safety program, HACCP was developed originally for astronauts. The monitoring program has been adopted by the U.S. Food & Drug Administration for various food products and by the IPIA for packaged ice. PIQCS PLUS certification is renewed annually by participation in IPIA-mandated plant audits performed by the world-wide leader in food safety solutions and inspections, NSF, National Sanitation Foundation, Ann Arbor, Michigan.

Brunswick Ice has consistently retained its PIQCS PLUS certification.

The IPIA/National Sanitation Foundation, the Virginia Department of Agriculture and Virginia-based military officials perform routine inspections of the Lawrenceville water purification and ice making plant.

