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What's in Your Water?

The purpose of this investigation is to determine how much DEHP leaches from various containers (glass, Gatorade, and Arrowhead) into water over a 5 week period. If the temperature (cold, room temperature, and hot) and the bottle types are varied, then the Gatorade bottle will leach the most amount of Bis (2-ethylhexyl) phthalate (DEHP) into 20 mL of water over a 3 week period.

My experiment involved several steps. I took 3 controlled temperature areas, and I put 30 bottles into each area (10 of each type). Each week, I removed 1 mL of water from each bottle and ran it through the mass spectrometer looking for the DEHP levels. I recorded the DEHP levels for all 90 bottles.

The data collected showed on average the Gatorade bottles kept at room temperature had the highest DEHP levels (785.8 counts) at the end of two weeks. The DEHP levels decreased in all bottle types in the cold temperature setting.

These findings lead me to conclude that water bottles stored in cold temperatures have the safest DEHP levels if the water will be consumed at a later time.