



## **B9 Plastics, Inc.**

*Sustainable Prosperity Through Technology*

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### **The Science of Water**

#### **The Dependence of Water...**

- 1) Water consists of three atoms, 2 Hydrogen atoms and an Oxygen atom that are bonded together due to electrical charges.
- 2) Water moves around the earth in a water cycle. The water cycle has five parts: evaporation, condensation, precipitation, infiltration and surface run-off.
- 3) In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about 2 weeks in lakes and rivers, and less than a week in the atmosphere.
- 4) Water regulates the earth's temperature.
- 5) Water is the only substance that is found naturally on earth in three forms: liquid, gas, solid.
- 6) Frozen water is 9% lighter than water, which is why ice floats on water.
- 7) It doesn't take much salt to make water "salty." If one-thousandth (or more) of the weight of water is from salt, then the water is "saline."
- 8) Freshwater animals are disappearing five times faster than land animals
- 9) All known forms of life depend on water.
- 10) One gallon of gas can contaminate 1 million gallons of ground water.
- 11) 2/3 of the world's fresh water is ice.
- 12) Fresh water makes up only 3% of the water on the Earth's surface.
- 13) On average molecules of water spend only 11 days in the air before condensing into water droplets that return to Earth as rain or snow.

#### **The Usage of Water...**

- 1) 2 billion people lack access to safe potable drinking water.
- 2) 31 countries face chronic drinking water shortages today.
- 3) By 2025, 48 countries will face potable water shortages affecting nearly 3 billion people.
- 4) Less than 1% of the world's fresh water (or about 0.007% of all water on earth) is readily accessible for direct human use.
- 5) Oceans store most of earth's water - approximately 97%.
- 6) Only 2.5% of earth's water is fresh water.
- 7) Over 61% of the world's fresh water is located in Antarctica
- 8) The overall amount of water on our planet has remained the same for two billion years.

- 9) The earth's total amount of water has a volume of about 344 million cubic miles.
  - 315 million cubic miles is seawater.
  - 9 million cubic miles is groundwater in aquifers.
  - 7 million cubic miles is frozen in polar ice caps.
  - 53,000 cubic miles of water pass through the planet's lakes and streams.
  - 4,000 cubic miles of water is atmospheric moisture.
  - 3,400 cubic miles of water are locked within the bodies of living things.
- 10) A quarter of the world's population is without safe drinking water.
- 11) Most of the world's people must walk at least 3 hours to fetch water.
- 12) The single largest freshwater resource suitable for drinking is Lake Baikal in Siberia, which has a very low salt and calcium content and is very clean.
- 13) The World Water Assessment Program indicates that, in the next 20 years, the quantity of water available to everyone is predicted to decrease by 30%.
- 14) Only about 3% of the water on our planet is fresh water. Groundwater accounts for about 14% of that 3%, while ice sheets and glaciers account for about 85%. The rest is in lakes, streams, reservoirs, the air and soil, and rivers. In the United States, groundwater supplies about 50% of our drinking water, 40% of the water used for irrigation, and about 25% of the water used by various industries.
- 15) The Great Lakes have 80 percent of the United States fresh water supply.
- 16) By 2025 2.4 billion will be living without fresh water
- 17) About 1/3 of the water that falls to Earth runs off the surface in streams rather than soaking into the Earth's soil. A drop of water finding its way to a stream will spend two weeks there on average before rejoining the ocean.
- 18) There may be as much water locked in the Earth's minerals as there is in the Earth's oceans.
- 19) Brazil has the world's largest fresh water supply. The US has the world's 4th largest fresh water supply.
- 20) Where the world's Fresh water supply is used:
  - 8%- Domestic and municipal
  - 22%- Industrial
  - 70%- Agriculture
- 21) The leaves in one acre of broad leafed forest may release as much as 8,000 gallons of water a day into the air as water vapor through the tiny pores in their leaves.
- 22) The Aral Sea has lost 75% of its volume and more than half its surface area between 1973 and 2004 as a result of cotton farmers.
- 23) In 27 developing countries, most of them in Asia and Africa, clean relatively convenient water is unavailable to over 900 million people.
- 24) The average American individual uses 100 to 176 gallons of water at home each day - the average African family uses about 5 gallons of water each day.
- 25) 2 in 3 people lacking access to clean water live on \$2 a day.
- 26) Poor people living in the slums often pay 5-10 times more per liter of water than wealthy people living in the same city.
- 27) The only way to ensure pure, contaminant-free drinking water is through the use of a point-of-use filtration system.
- 28) It takes 25 gallons of groundwater to irrigate each 2 square foot area of wheat field.
- 29) It takes 1,851 gallons of water to refine one barrel of crude oil.
- 30) It takes 25 gallons of water to make one pound of plastic.
- 31) It takes 700 gallons of water to make a Cheeseburger.
- 32) More than 60% of the world's rivers have been dammed or diverted.
- 33) Today, Dams generate 20% of the world's electric power and provide needed water for irrigation to cities.

***Thanks to TWI for this information ...[http://thewaterinitiative.com/MainPage\\_16.html](http://thewaterinitiative.com/MainPage_16.html)***