

Shade Balls: Everything You Always Wanted to Know but were Afraid to Ask

Saturday, August 15, 2015

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Los Angeles has dumped 96 Million plastic "shade balls" into a California reservoir to block the sun's ultraviolet rays. The black spheres are expected to prevent harmful chemical reactions. The innovative balls were made by a company called XavierC, which has drawn upon decades of testing for their design.

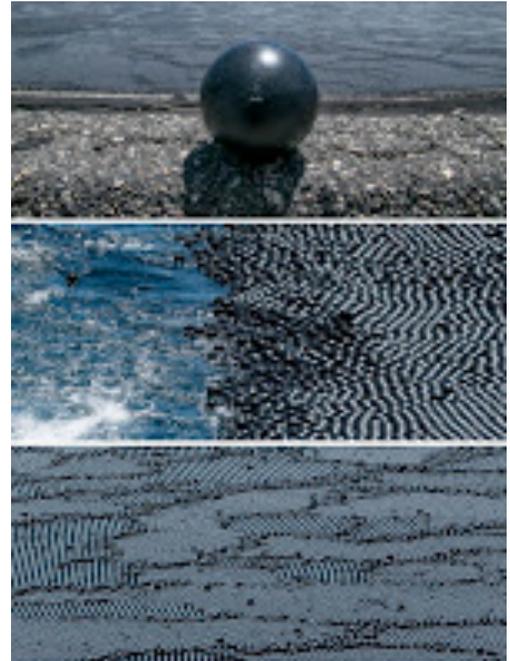
Although it has been widely reported that these balls have been dumped into the reservoir to reduce evaporation and help LA adapt to severe drought conditions, the primary focus of the initiative is to keep the drinking water supply safe. However, as an ancillary benefit the shade balls are expect to stop as much as 300 million gallons of water from evaporating.

What are the chemical reactions these balls are designed to prevent?

The balls are primarily designed to provide shade that will prevent a harmful chemical reaction. The sun's ultraviolet rays can combine with chlorine to accelerate reactions that can lead to bromate, a known carcinogen.

Why are the balls black?

These balls are heat absorbing black instead of light reflecting white because their purpose is not to keep the reservoir cool but to provide shade. Thin black skinned balls are cheaper than thicker balls of other colors. White balls would allow some light to pass through. While black balls are completely opaque and as such provide the best shade coverage. Carbon black is also the most durable color and it maximize the life of the balls by decreasing the rate at which the plastic breaks down in UV light. The balls carbon black exterior is expected to enable them to last for decades.





What impact will the plastic have on water quality?

The balls are carbon black because they are covered in a food safe pigment with an albedo near zero (reflects no light). The pigment in the balls is safely locked away and will not harm the water supply.

How much does the project cost?

The plastic is made of polyethylene so they will not leach into the drinking water. The cost of the project is \$35 million which works out to an average of almost \$0.365 per ball. This approach is far more cost effective than covering the reservoir which would have cost \$285 million.

#shadeballs.