



UV Effects on Polyethylene Tanks

A WHITE PAPER FROM ASSMANN

All Polyethylene is vulnerable to degradation upon long term exposure to sunlight. This degradation is brought about by physical changes, which occur in the polyethylene as a result of exposure to the ultraviolet (UV) portion of sunlight. Ultraviolet does this by breaking the carbon and hydrogen bonds, creating free radicals, which in turn break the Polyethylene into shorter molecules and thus a more brittle polymer. Geographic location, along with changes in climate and elevation, affect actual UV performance. The temperature of exposure is also important as the higher the temperature, the more degradation will occur.

Assmann Corporation of America offers our standard product line in a variety of colors. We dry blend pigments into our polyethylene to meet customer specifications. Prior to our raw material being delivered to our facility, our material suppliers compound an ultraviolet stabilizer into the polyethylene. This stabilizer is to help prevent UV degradation of the plastic, not the tanks contents. This UV stabilizer formulation is proprietary for each resin manufacturer. The technical data sheets we receive from our suppliers simply read "UV Stabilized"; the most you can get on a technical data sheet would be UV-8 or UV – 6 packages, but most resin suppliers will not elaborate further.

To answer the question "*Is your tank suitable for outdoor storage?*" The answer is "Yes". How does Assmann Corporation's tanks differ from our competitor?

- Assmann Corporation's uniform wall thickness adds extra material to the dome of the tank and helps eliminate the amount of UV breakdown that happens to the dome of the tank I.E., "the thicker the material, the longer it takes to break down".
- Assmann Corporation only uses virgin polyethylene material to manufacture our tanks. This material has a UV stabilizer compounded into the resin prior to arriving at our facility. The use of recycled material would decrease the tanks longevity.

Historically, tank manufacturers have recommended using "black" pigment in the polyethylene to help protect the chemical being stored. We do not feel that black pigment gives additional UV stability. While black pigment helps block sunlight, it also increases the amount of heat the tank gathers from the sun. Assmann manufactures our tanks with uniform wall thickness from top to bottom. This additional thickness in the dome of the tank helps eliminate UV penetration.

The ultimate best method to prevent UV penetration into the tank is a 1" thick coat of foam insulation with mastic coating. This insulation virtually eliminates UV rays from entering the tank, thus helping protect the tank and the chemical being stored.

To summarize, polyethylene tanks purchased from Assmann Corporation are an excellent solution for outdoor storage of chemicals. We can provide either natural-colored tanks or we can dry blend pigment into our tanks. If your tank installation is in a high UV exposure area, Assmann can offer additional protection to ensure longevity. Contact our facility for the best solution for your outdoor storage needs.

