

Does the Sun Reduce the Life of Poly Water Tanks?

Poly water tanks are made from a plastic material. Generally, plastic objects exposed to direct or indirect sunlight can display surface chalking as the polymer oxidises. After a period of time they begin to break down, become brittle and crack. UV light also accelerates the fading of colour.

So ultraviolet (UV) radiation from the Sun can negatively affect pure polymer products. Poly storage tanks however, such as a polymer rainwater tank, can have UV stabilisers added in the mix when a polyethylene tank is moulded.



The use of stabiliser resin during the moulding process can inhibit or absorb the harmful UV light that causes polymer to break down. Two main stabilisers used today are:

- **UV absorbers** – work by absorbing the UV light, transforming it into heat and dissipating them throughout the tank. UV absorber chemistries include benzophenones, benzotriazoles and hydroxyphenyl triazines.
- **Hinderd Amine Light Stablisers (HALS)** – do not absorb UV radiation but act to inhibit degradation. They work by targeting and neutralising free radical intermediates that are required for oxidisation to occur.

In both cases, the damaging effect of the UV light is focused away from the base polymer and colourants due to interaction with the UV additive present in the base polymer.

So if you purchase a UV-stabilised poly tank then you can have every confidence that it will stand the test of time in the Sun. One way you can quickly tell if a tank is UV stabilised is by its finish – a tank with a high glossy shine is often UV stabilised whereas a tank with a matte finish is not.

Finally, when creating the polymer base and processing conditions, it is important to know the specifics of the end-use environment. This helps to create the most effective stabilisation. For example, if colour does not matter such as in industrial-grade tanks, then carbon black resin can be used. This is a great UV absorber and allows for storing harsh chemicals such as sodium hypochlorite.

Summary

- UV stabilisers mean you can rest assured that your poly tank will withstand the harmful effects of the Sun.
- The life of your poly water tank will last a long time – up to 20 years and more.
- Stabilisers also protect the colour of your tank from fading.

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