



## Long-Term Retardants Fact Sheet



What is a Long-Term Retardant? Long-term retardants contain retardant salts - typically agricultural fertilizers – that alter the way the fire burns, decreases the fire intensity, and slows the advance of the fire, even after the water they originally contained has evaporated.

Long-term retardants are available as wet or dry concentrates that are mixed with water thereby improving water's effectiveness and ability to cling to fuels, over a long period of time.

All qualified long-term retardants are one-component products which means the color is a part of the concentrate. The concentrate, mixed with water, is ready to use.

Retardants may be colored with iron oxide (-R), fugitive pigment (-F), or remain uncolored (-W).

- Iron oxide color remains visible until weathering removes it.
- Fugitive color remains visible for several weeks or more until sunlight causes it to fade or weathering removes it.
- Uncolored retardant may have a slight color due to the fertilizer base and/or other components, but it is generally not visible on the fuels.

Go to [https://www.fs.usda.gov/rm/fire/documents/qpl\\_ret.pdf](https://www.fs.usda.gov/rm/fire/documents/qpl_ret.pdf) for a list of qualified long-term retardants.

Water quality: Retardants are not generally affected by water quality i.e. hardness/softness, pH; however bacterial contamination of the mix water may, in some instances, reduce the viscosity of the mixed product.

Mixing outside of QPL listed mix ratios (either higher or lower): Concentrations lower than the approved concentration may not be effective. There is also an increased potential of corrosion, when the product is mixed outside the approved mix ratio.

### Application:

- Effective in both direct and indirect attack
- These thickened products tend to cling to fuels due to their increased viscosity and may show reduced rate of evaporation over untreated water
- All retardants are effective even after the water they contain has evaporated.

Training: Product coverage levels and observation times occurring during training and demonstrations often will not show the strengths of long-term retardants as coverage levels are frequently high and observation times low. Even fairly low coverage levels can remain effective after they dry and until they are removed from the fuel through weathering, rain, or other environmental factors.

Other considerations: Be aware of the potential for increased slipperiness on the ground or equipment where retardant was recently applied.

While retardant salts are fairly stable under a wide variety of water quality and contamination, the presence of retardant may have a significant effect on the performance of other fire chemicals.

Aircraft tanks and other equipment should be thoroughly rinsed before changing from one product type to another.

For more information on long-term retardants or program contacts, please visit our website:

<https://www.fs.usda.gov/rm/fire/wfcs/>

*As long as the product is qualified and on the Qualified Products List (QPL), long-term retardants can be used on any federal wildfire. If the QPL product is working and fire and forest personnel are satisfied with its effectiveness, nothing prevents its use in the manner and mix ratio described on the QPL. The decision regarding the type of chemical used is determined by the Incident Commander and/or Agency Administrator*