



Water Enhancers Fact Sheet



What is a Water Enhancer? A product that relies primarily on the water it contains for firefighting.

These products contain polymers or other thickeners to improve performance; a) aid in adherence to fuels, b) allow build-up of thick, protective wet layer, and c) minimize drift during aerial application.

These products are available as wet or dry concentrates that are mixed with water to improve its firefighting characteristics.

Water enhancers may be uncolored (whitish), colored concentrates that maintain color when mixed with water, or an uncolored concentrate that is mixed with water that has a color added. Go to <https://www.fs.usda.gov/rm/fire/wfcs> for a list of qualified products (QPL).

Water quality: Many products are affected by water quality, i.e. hardness/softness, pH. This can result in drastic changes to the product's consistency (making it either thicker or thinner). Some products, under some conditions, take longer to thicken or become less stable in the container as well as after application.

"Freshening up" (or re-hydrating): Adding additional water to a mixed water enhancer to freshen the application may or may not actually work. The Forest Service has not quantified the increase/decrease in effectiveness. There is a higher likelihood of washing the product off the material you're trying to protect. After drying, the product will never return to its original, freshly-mixed consistency.

Mixing outside of QPL listed mix ratios (either higher or lower): There is an increased potential for intergranular (IGA) corrosion outside the approved mix ratio range. IGA has been found in some types of water enhancers and is an invisible type of corrosion taking place between the grains of a metal alloy, weakening it. Only mix ratios listed on the QPL have been tested specifically for intergranular corrosion.

Application:

- Best in direct suppression efforts
- Products are NOT effective when dry (water has evaporated)
- Evaporation RATES are very similar to water. In field situations, water enhancers appear to last longer because of the thickness of the water layer on the fuel
- Assume approximately 30 minutes to 1 hour of effectiveness in normal wildland conditions
- Forest Service does not allow application of water enhancers by large airtankers

Field users: Generally have better results in lighter fuels vs. heavier fuels

Demonstrations: Product thickness on fuels during ground demonstrations nearly always significantly exceeds anything possible with aurally delivered products.

Other considerations: Be aware of the potential for increased slipperiness on the ground or equipment, and/or difficulty cleaning aircraft, other equipment or surfaces exposed to water enhancers.

Because many water enhancers are not compatible with retardant salts and may not be compatible with other water enhancers, aircraft tanks and other equipment should be thoroughly rinsed before changing from one product to another.

For more information on water enhancers 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), water enhancers 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 a forest from using it 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