
BACKGROUND

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Ministry of Forests and Range
Provincial Wildfire Coordination Centre

TYPES AND USE OF LIQUID TO EXTINGUISH WILDFIRES

Three types of liquids are used to help ground crews extinguish wildfires: water, foam and retardant. Each plays an important role in British Columbia's battle against forest fires by cooling fires and slowing their progress long enough for firefighters to extinguish them. They are dropped from helicopters and fixed-wing aircraft and/or applied from the ground.

Water

Water is applied by ground crews via water bags, tanks, pumps and hoses. Crews use streams, ponds and small lakes as water sources. Helicopters pick up and transport water to ground crews using buckets or belly tanks.

Foam

Fire control foam is a mixture of water and a concentrated soap-like substance. Foam is applied from the air and/or by ground crews. When dropped from the air, the foam extends over a wide area and helps reduce the spread of a wildfire.

Foam improves the effectiveness of water by helping water soak deeper and more quickly into forest fuels and slowing down the evaporation of the water. Foam can be quickly mixed on-board aircraft.

Both water and foam are typically applied directly on the fire to blanket the flames.

Retardants

The Wildfire Management Branch most commonly uses water-based retardants due to their long-lasting effect on fires and because the ingredients in retardants do not evaporate. Retardants prematurely release the gaseous fuels stored within logs and debris. These fuels are then unable to burn in areas where the retardant has been dropped.

Retardants continue to remain effective when the water it has been mixed with evaporates, making them work well in fighting high intensity wildfires that require distant and indirect action. In these situations, long-lasting retardant mixtures are spread over areas ahead of the advancing fire. Retardants can maintain a break between multiple fires burning in the same area, allowing ground crews to fight fires with maximum efficiency.

Iron oxide (rust) is added to retardant to give it its distinct red colour, enabling air attack personnel and ground crews to see where it has been dropped.

Retardants are generally used with aircraft that are reloading at airport tanker bases where mixing facilities can be established. It is possible to set up retardant mixing for helicopters during large, long-term wildfires.

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More information on wildfires in British Columbia is available on Twitter at <http://twitter.com/BCGovFireInfo> and Facebook at <http://facebook.com/BCForestFireInfo>

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