

Mobile Retardant Bases



While we are all accustomed to seeing helicopters taking water from lakes and streams during fire operations, they can also be used to apply fire retardant. On the Inyo Creek Fire, 106,000 gallons of retardant was applied via helicopter to the fire. This is the same red material that we commonly use fixed-wing aircraft (Air Tankers) to apply. This is achieved using Mobile Retardant Bases. Some Mobile retardant bases are sized to support helicopter operations in more remote areas while others are sized for Single Engine Air Tankers (SEATS), and traditional fixed wing tankers, and must be established at appropriately sized airports.

What is Retardant: Comprised of Ammonium Phosphate plus additives that make it work better, fire retardant changes how fuels (leaves, grass, brush) interact at a chemical level. Wildland fuels depolymerize into flammable compounds. In the presence of fire retardant, cellulose dehydrates into water vapor and nearly pure carbon. The heat from the fire is absorbed by the reaction between the retardant and fuels, decreasing fire temperatures and slowing spread of the fire. Retardant stays effective until it is washed off by rain, which allows fire managers to apply retardant well ahead of a fire. Water, which makes up 85% of the mixture, is only the carrier of the retardant. The red dye fades after several weeks of sunlight.

Mobile Retardant Bases designed for helicopter use can produce 21,000 gallons of retardant per hour and can pump 300 gallons per minute into fixed tank helicopters. For helicopters that can draft from open water sources, a 5000 gallon or larger open tank is used. A second rinse tank is required to prevent retardant from entering waterways in the event the same aircraft switches to drafting from natural water sources. Retardant is thoughtfully applied, and pilots and fire managers must use retardant avoidance maps to prevent the misapplication of retardant into waterways and environmentally sensitive areas.

