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Phos-Chek® LC 95A Long Term Retardant Information Sheet

- **Phos-Chek ® LC 95A long term fire retardant** – is a blend of liquid concentrate fertilizer based solution that is blended and diluted with water generally obtained from municipal water supplies. This solution is diluted at a rate of 5.5 parts water to 1 part retardant concentrate prior to aerial application.
- **The Phos-Chek ® LC 95A concentrate contains more than 85% of ammonium phosphate solution and less than 18% clay, iron oxide and performance additives.** The mixed solution used for fighting wild land fires contains approximately 15% concentrate and 85% water.
- **The clay is Attapulgite and is used to suspend the iron oxide in the solution.** Iron oxide pigment (ground iron rust) provides enhanced drop visibility for the Air Attack Officers and pilots when conducting the aerial suppression missions. The performance additives, which represent less than 1% of the applied solution, consist of four components that prevent corrosion of the handling hardware and the applying aircraft. While the identity of these four components are proprietary, and trade secrets, we can reveal that none of them contain heavy metals or other toxic materials.
- **The individual components, the retardant concentrate and it's a solution of blended retardant**, prepared at the approved mix ratio, solution have all been tested and shown to meet the stringent requirements of the United States Department of Agriculture, Forest Service for use as a wild land fire retardant. Perimeter Solutions Canada Ltd takes great care to make certain that quality control procedures are strictly adhered to during the production of LC 95A liquid concentrate to ensure compliance with existing environmental standards for these products.
- **Retardant entering water supplies – Fire retardant contaminated water is not considered harmful.** Even the concentrate prior to dilution is considered safe based on actual testing. Solids present in the product will rather rapidly settle in a static pond, and soluble components will be diluted as fresh water enters. Open sources (e.g. ponds, dugouts) may receive small amounts of retardant overspray during fire application. This will have no appreciable effect on the quality or toxicity of the water supply. Water containing small amounts of retardant could taste slightly salty and may not, consequently, be palatable. Immediate medical attention would not be considered necessary except in rare cases involving adverse reactions based on individual intolerances or allergic reactions.
  Water sources that are infiltrated by retardant solution will return to "normal" conditions depending on the volumes of water and retardant solution and whether the water is flowing or static. The worst scenario would be a small static pond and a direct hit with an aircraft drop. In this case, the solids would settle rapidly but the solution would be salty until further diluted. Normally, the incident is much less severe because pilots attempt to avoid application in water and usually only drops are blown into a running/flowing stream. In this case, the water will clear within a few minutes to a few hours, dependent on the rate of water flow and the volume of retardant solution.

- **Many questions have been asked if retardant application areas would affect organic certification.** This would depend on the regulations existing in the area of application. (Standards vary from one area to another in this regard.) Please contact your local Department of Agriculture or "certified organic" verifying body.
- **It would be an option to wash down vegetation applied with retardant or provide additional drinking water for grazing animals if the product is within the animals range.** Toxicity of retardant to livestock is a frequently asked question, as the salty nature of the mixed product attracts the feeding animals. There are no known cases of adverse effects on livestock in this scenario. The ammonium polyphosphate salts within the solution should not be confused with the effects of nitrogenous fertilizers, which are normally fatal to cattle when ingested. It is recommended that drinking water be readily available for them due to increased thirst after ingestion. There are no other known impacts.
- **The composition of retardant has changed over the past twenty years.** Certain components in previously used retardants are being replaced by more environmentally friendly ingredients. Also, current products are more effective than previous ones and are consequently used at lower concentrations, i.e., more dilute solutions which reduce the amount of chemical residues that might be experienced. This also reduces the amount of retardant that remains on unburned fuels and the amount of run-off that will occur during rainy seasons.
- **The oral toxicity of the concentrated product is not a concern based on the data provided in the Material Safety Data Sheet.** The product is diluted several fold prior to application in the field and then further diluted if it happens to enter a water supply source. In addition, none of the components of the product are known or suspected concerns for pregnant or breastfeeding women based upon detailed review of relevant toxicological databases including the U.S. Public Health Service's National Toxicology Program (NTP).
- **Material Safety Data Sheets are available to the public upon request along with various product information data.** Please refer to the Wild land fire chemicals web site for qualifications of products used to assist fire fighting agencies at :

http://www.fs.fed.us/rm/fire/wfcs/index.htm