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Beginning in 2010, ICL will begin offering a new retardant formulation to replace Phos-Chek® D75 (both F and R). Phos-Chek P100-F, an all-phosphate, high viscosity powder concentrate, meets the new long-term retardant specification (5100-304c), which allows only phosphate salts as the active fire retarding component. Hopefully, the following Q&A will address your questions regarding this new retardant.

Why is this change being made?

In order to improve the environmental friendliness of long-term retardants, the US Forest Service, in cooperation with its federal and state partners, implemented a new long-term retardant specification designed to minimize the ammonia content of retardants. Phosphates are more effective than sulfate and other retardant salts, and contain less ammonia. Phos-Chek D75R&F, which contain a mixture of ammonium phosphates and ammonium sulfates, do not meet the requirements of 5100-304c.

What are the safety, health and environmental advantages of Phos-Chek P100-F?

Phos-Chek P100-F, like all products on the QPL, meets or exceeds the very stringent Safety, Health and Environmental requirements in the specification. Phos-Chek P100-F contains significantly less ammonia than Phos-Chek D75, making it more environmentally friendly.

How has the product been tested to prove it is effective?

The performance standard in Specification 5100-304c can be met in one of two ways. Products may be burn tested in Missoula to demonstrate retardant effectiveness equivalent to 10.6% DAP, or they must contain a specified amount of retardant salt, equivalent to 10.6% DAP. Phos-Chek P100-F meets the required retardant salt content as specified in 5100-304c and therefore meets the effectiveness standard in the specification.

Is Phos-Chek P100-F compatible with Phos-Chek D75-F, Phos-Chek D75-R, and Phos-Chek LC95A and will tanks need to be completely cleaned out during the transition?

Where possible tanks should be drained and rinsed prior to introducing Phos-Chek P100-F. At a minimum, tanks should be emptied to the extent possible before introducing the new product. Mixing the two products should be avoided.

What are the advantages of Phos-Chek P100-F over Phos-Chek D75?

Because phosphates are more effective retardants than sulfates, Phos-Chek P100-F will yield about 20% more mixed retardant per ton than Phos-Chek D75. In addition, Phos-Chek P100-F contains less ammonia making it more environmentally friendly, is more resistant to biological attack and has better viscosity stability than Phos-Chek D75. Lab tests show that Phos-Chek P100-F will be more visible than Phos-Chek D75F.

The density of Phos-Chek P100-F is slightly lower than Phos-Chek D75, providing an added margin of safety in aircraft loading. A 2000 gallon load of Phos-Chek P100-F will weigh about 200 to 400 pounds less than a similar load of Phos-Chek D75.

Are there any mixing, storage, recirculation, or over winter differences?

No. All of the mixing, storage, and recirculation equipment and procedures will remain the same. There should be no difference in the over-winter characteristics of Phos-Chek P100-F versus Phos-Chek D75.

Are there corrosion differences?

Both Phos-Chek P100-F and Phos-Chek D75 meet all of the corrosion requirements in the new specification. In general phosphates are less corrosive to metals such as mild steel, than sulfates.

Is Phos-Chek P100-F affected by bacteria?

Biological contamination will have a negative impact on Phos-Chek P100-F viscosity and every effort should be made to avoid this situation. The thickener used in Phos-Chek P100-F, however, is more resistant to biological attack than the thickener used in Phos-Chek D75 so Phos-Chek P100-F should have better resistance to bacteria. It should be noted that biological attack impacts viscosity and, perhaps, visibility only. Retardant effectiveness is not affected by bacteria or enzymes.

Is there a difference in drop characteristics between Phos-Chek P100-F and Phos-Chek D75?

There should not be a material difference in the drop characteristics. Both Phos-Chek D-75 and Phos-Chek P100-F are high viscosity retardants (800 to 1500 cps) and are gum thickened.

What is the mix ratio, or yield of Phos-Chek P100-F?

Phos-Chek P100-F will be mixed at 1.0 pounds per gallon of water versus 1.2 pounds per gallon of water for Phos-Chek D75. Phos-Chek P100-F will yield about 2130 gallons per ton versus 1786 gallons per ton of Phos-Chek D75.

How does the color compare to Phos-Chek D75-F and Phos-Chek D75-R? Are there additives to boost the color?

Phos-Chek P100-F and Phos-Chek D-75F contain the same fugitive color pigment. Other differences in the composition appear, in the laboratory, to significantly improve the visibility of Phos-Chek P100-F in comparison with Phos-Chek D75F. It is expected, however, that Phos-Chek P100-F may not be quite as visible as Phos-Chek D75R. Based on user feedback, further improvements in visibility could be to the goal in future product development.

Will the product be approved for fixed tank helicopters?

No. Phos-Chek 259-F continues to be the only retardant that meets the magnesium corrosion requirement necessary for qualification for fixed tank helicopter operations.

How/When will the bases be converted to Phos-Chek P100-F from one product to the other?

Phos-Chek P100-F replaces Phos-Chek D75-F and Phos-Chek D75-R. Bases currently using Phos-Chek D75 will be transitioned into Phos-Chek P100-F over the course of the 2010 (and possibly 2011) fire season. A limited number of bases, as outlined in Tory Henderson's letter, will transition first, to ensure any transition issues are resolved before tackling the remainder of the bases. In general, Phos-Chek P100-F will be introduced as Phos-Chek D75 inventory is used up. For bases that do not have enough activity in 2010 to use their remaining Phos-Chek D75 inventory, the transition will be delayed until the following season. The goal is to have all new retardant deliveries be Phos-Chek P100-F by the end of the 2010 fire season.

Bases that currently use Phos-Chek LC95-A will not be impacted unless they choose to convert to Phos-Chek P100-F.

Why didn't ICL qualify a red iron oxide Phos-Chek P100-R?

In order to reduce the impacts on the land, the Agencies direction is to move toward fugitive colored retardants. Following agency guidance, ICL elected to focus its efforts on fugitive colored products only at this time.

Do bases that currently use Phos-Chek D75-R have to go to a fugitive colored product?

In order to stay with a powder concentrate, a base will have to use a fugitive colored retardant. The only alternative will be to switch to Phos-Chek LC95-A, which is a red iron oxide colored low viscosity liquid concentrate type retardant. This is an internal issue for the agency and should be discussed between the base and program management.

When will a Fugitive colored LC be available?

ICL currently has fugitive colored LC products in testing.

Are there any package differences between P100-F and D75?

No. Phos-Chek P100-F will be offered in the same packages (Phos Bins, Bulk Bags, Bulk Trailers and Pails) as Phos-Chek D75.

Will Phos-Chek P100-F wash off of airplanes easier than Phos-Chek D75?

We don't expect there will be a significant difference. Timely washing is the key.

Tory's letter said Phos-Chek P100-F will be more expensive than Phos-Chek D75. How much?

Pricing for 2010 has not been finalized. Phos-Chek P100-F does cost more than Phos-Chek D75 because phosphates are more expensive than sulfates, and the thickener in Phos-Chek P100-F is more expensive than the thickener used in Phos-Chek D75. As stated earlier, the change in retardant salt was made in order to meet the requirements of the new specification. The change in thickener was made to improve viscosity stability and to reduce the frequency of biological contamination viscosity issues. For the extra cost, P100-F offers increased effectiveness, better mix ratios and yield, reduced mild steel corrosion, improved safety, improved health and environmental characteristics and better viscosity stability.