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Use of Phos-Chek® P100-F chemical retardant for Agency firebombing operations.

PURPOSE

This briefing is to be read in conjunction with Briefing Note 41.

To fill some gaps in the supply of retardant. A further Phos-chek product P100-F is being introduced for operations at the Stawell airbase.

A 'B double' eductor mixer is being sourced from the supplier to mix the product to ensure quality control and separation of products being mixed at the airbase. Should the use of P100 be extended past this operation the following information is relevant to personnel.

P100-F is an all-phosphate, gum thickened, fugitive coloured retardant and is a highly soluble powder that mixes readily with water.

This product has a higher viscosity than D75R and MVP and information from the supplier indicates that whilst this product will be suitable for use with existing DSE 3" eductor-mixer systems, transfer of mixed retardant will be slower ie. aircraft will take longer to load.

The "F" stands for fugitive, which fades to a neutral earth colour with exposure to UV light over days and weeks.

P100-F long-term retardant is qualified by the USDA Forest Service under specification 5100-304c for use in fixed wing airtankers and helicopters with buckets.

P100-F is not approved for fixed tank helicopter operations.

All formulations meet the USFS Specification on retarding efficacy.

Material Safety Data sheets (MSDS) for P100-F will be available shortly in the Information/OHS/MSDS section of Fireweb.

Note:

Do not combine D75R, MVP or P100 products. There must be a clean separation of product usage.

A scaled introduction of P100 is being conducted at present with this product being selectively introduced.

MIX RATIO

If introduced the following is important information for mixing crews and Air Attack Supervisors as this product is significantly different in comparison to the mixing and quality control requirements for D75R and MVP.

Mix ratio for P100-F is 0.1220kg per litre or **7,573 lt water per Phos-bin.**

This will yield (with expansion) 8,140lt of mixed P100-F retardant per Phos-bin

Yield is significantly more than D75R (6,770lt).

This has implications for the mixing/storage container as it will need to hold a minimum of 9000 lt per Phos-bin mix to allow for expansion.

Mix ratio 11.98kg/100lt

Expansion 7.49%

Solution Density 1.05kg/lt @ 27° C

Viscosity 800-1000 cps @ 27° C operational

No. Phosbins	Litres of Water	Litres of Mixed Retardant
1	7573	8140
2	15,145	16,280
3	22,718	24,420
4	30,290	32,560
5	37,863	40,700
6	45,436	48,840
7	53,008	56,980
8	60,581	65,120
9	68,154	73,260
10	75,726	81,400
15	113,589	122,100
20	151,452	162,799

Refractometer Reading

The refractometer measures the salt content of the retardant and readings and different scales apply between brand of refractometer – these are provided below as they vary to readings required for D75R and MVP.

Reichert vs Shilac Refractometer	
Reichert 10440	Shilac ATC1125
7.75	8.2
8.00	8.5
8.25	8.7
8.50	9.0
8.75	9.3
9.00	9.5
9.25	9.8
9.50	10.0
9.75	10.3



WHAT DO YOU NEED TO DO?

Retardant mixing crews

- **Check the product you are mixing and ensure it is P100.**
- Before introducing P100-F, the mixing system including eductors, lines, pumps etc must be rinsed with clean water as thoroughly as possible. “Shocking” the system is not required.
- Storage tanks must be emptied as much as possible and rinsed as best as can be achieved.
- Mixing crew personnel must be aware of the new mix ratio and the different refractometer readings required to ensure quality control.

Airbase Managers

- **Check the product your crews are mixing and determine if it is P100-F.**
- Be aware of the variation in mix ratios and the quality control requirements for P100-F.
- Be aware of the increased yield from each Phosbin.
- Ensure mixing crews are briefed on the new mix ratios and the quality control requirements.
- Ensure mixing equipment is cleaned as above.
- Ensure pilots and AASs are briefed when P100-F is being loaded into the SEATs – especially with regards the change in colouring.

Air Attack Supervisors

- Check with the airbase that the product being loaded/delivered is P100.
- Report any quality issues or observations to Airbase Manager.
- Report operational effectiveness to the Innovation Manager.

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