



11/5/03

Fire Chemicals
For use by USDA Forest Service
 (Qualified or Approved and commercially available)

| Chemical | Mix Ratio | Fixed-Wing Airtanker | Qualified/Approved Applications ¹ | | | |
|--|--|-------------------------|--|--------------------------|----------------------|------------------|
| | (Pounds concentrate Per gallon water) | | SEATS | Fixed-Tank Helicopter | Helicopter Bucket | Ground Engine |
| LONG-TERM FIRE RETARDANTS (Meets the requirements of Forest Service Specification 5100-304b) | | | | | | |
| Dry Concentrate | | | | | | |
| Gum-thickened; Permanent or Temporary Base | | | | | | |
| Fire-Trol GTS-R | 1.66 lb/gal | • | • | | • | |
| Phos-Chek D75-R | 1.20 lb/gal | • | • | | • | |
| Gum-thickened; Temporary Base | | | | | | |
| Phos-Chek 259-R | 1.14 lb/gal | • | • | • | • | • |
| Phos-Chek G75-W | 1.12 lb/gal | | | | • | • |
| Unthickened - None available | | | | | | |
| Wet Concentrate | | | | | | |
| Gum-thickened; Permanent or Temporary Base | | | | | | |
| Phos-Chek HV-R ² | 3.6:1 | • | • | | • | |
| Phos-Chek HV-R | 3.1:1 | • | • | | • | |
| Phos-Chek MV-R ² | 3.6:1 | • | • | | • | |
| Phos-Chek LV-R ² | 3.6:1 | • | • | | • | • |
| Phos-Chek LC-95A ² | 5.5:1 | • | • | | • | • |
| Phos-Chek LC-95D ² | 4.25:1 | • | • | | • | • |
| Unthickened; Permanent or Temporary Base | | | | | | |
| Fire-Trol LCA-R | 5:1 | • | • | | • | |
| Fire-Trol LCG-R | 4.75:1 | • | • | | • | |
| Fire-Trol FTR ³ | 4.75:1 | ○ | ○ | | ○ | |

¹ • Fully Qualified ○ Conditional Approval

² Targeted LAQA will be performed during the first fire season of use.

³ A field evaluation must be completed to upgrade product status to qualified. The evaluation will be scheduled when a product is selected for use.



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| Chemical | Mix Ratio | Qualified/Approved Applications ¹ | | | | | Ground Engine |
|--|-----------|--|--------------------------|-------|-----------------------|-------------------|---------------|
| | | Fixed-Wing Airtanker ² | Fixed-Wing Water Scooper | SEATS | Fixed-Tank Helicopter | Helicopter Bucket | |
| WILDLAND FIRE FOAM (Meets the requirements of Forest Service Specification 5100-307) | | | | | | | |
| Ansul Silv-Ex | 0.1-1.0% | • | • | • | | • | • |
| Fire-Trol FireFoam 103 | 0.1-1.0% | • | • | • | | • | • |
| Fire-Trol FireFoam 103B ³ | 0.1-1.0% | • | • | • | ★ | • | • |
| Phos-Chek WD 881 ³ | 0.1-1.0% | • | • | • | ★ | • | • |
| Fire-Trol FireFoam 104 | 0.1-1.0% | • | • | • | | • | • |
| Angus ForExpan S | 0.1-1.0% | • | • | • | | • | • |
| Pyrocap B-136 | 0.1-1.0% | • | | • | | • | • |
| Fire Choke | 0.1-1.0% | • | | • | • | • | • |
| Phos-Chek WD 881-C | 0.1-1.0% | • | • | • | | • | • |
| Phos-Chek Anchor Point | 0.1-1.0% | | | | | • | • |
| National Foam KnockDown | 0.1-1.0% | • | • | • | | • | • |
| Summit FlameOut | 0.1-1.0% | | | | | • | • |
| Angus Hi-Combat A ⁴ | 0.1-1.0% | • | • | • | | • | • |

¹ • Fully Qualified ★ Administrative Approval

² Products meet requirements for application from fixed-wing airtankers. Consult individual agencies for specific policies relating to foam use. USDA Forest Service does not allow application of foam from fixed-wing airtankers

³ Administrative approval has been granted for application from fixed-tank helicopters. No further approvals are needed.

⁴ This product was evaluated and qualified under the name KnockDown Plus.



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| Chemical | Mix Ratio | Qualified/Approved Applications ¹ | | | | | |
|---|------------|--|-----------------------------|-------|--------------------------|----------------------|------------------|
| | | Fixed-Wing Airtanker | Fixed-Wing Water Scooper | SEATS | Fixed-Tank Helicopter | Helicopter Bucket | Ground Engine |
| WETTING AGENTS (Meets the requirements of Forest Service Specification 5100-305b) - | | | | | | | |
| There are no qualified wetting agents at this time. Supplies are limited to stocks on hand in the national cache system and local work centers. Once those supplies are depleted there will be no more. You may substitute a 0.1% solution of any of the qualified foams for a wet water solution. | | | | | | | |
| FIRE SUPPRESSANT WATER ENHANCERS (Approved under Administrative Work Plan – qualification of these product types will be covered by Forest Service Specification 5100-306a as soon as it is implemented). Please review the Notes for Selection and Use [www.fs.fed.us/rm/fire/retardants/current/gen/documents/waterenh.htm] | | | | | | | |
| FireOut ICE ² | 0.4-1.2% | | | | | ★ | ★ |
| Thermo-Gel 200L ³ | 2% | | | | | | ★ |
| Flame Guard Gel | 0.6 lb/gal | | | | | | ★ |
| NoChar E112 | 3.0% | | | | | | ★ |

¹ • Fully Qualified ★ Administrative Approval

² This product was evaluated and approved under the name Chemdal Aqua Shield.

³ This product was evaluated and approved under the name Stockhausen Cindet FP-47.



11/5/03

Fugitive-Colored Products

(Qualified or Approved and commercially available)

| Chemical | Mix Ratio | Qualified/Approved Applications ¹ | | | | |
|---|--|--|-------|--------------------------|----------------------|------------------|
| | (Pounds concentrate Per gallon water) | Fixed-Wing Airtanker | SEATS | Fixed-Tank Helicopter | Helicopter Bucket | Ground Engine |
| LONG-TERM FIRE RETARDANTS (Meets the requirements of Forest Service Specification 5100-304a and California Department of Forestry and Fire Protection manual direction. Forest Service Specification 5100-304b does not make a distinction between fugitive-colored and iron oxide- colored products.) | | | | | | |
| Dry Concentrate | | | | | | |
| Gum-thickened; Permanent or Temporary Base | | | | | | |
| Phos-Chek D75-F | 1.20 lb/gal | • | • | | • | |
| Fire-Trol 300-F | 1.77 lb/gal | • | • | | • | |
| Gum-thickened; Temporary Base | | | | | | |
| Phos-Chek 259-F | 1.14 lb/gal | • | • | • | • | • |
| Phos-Chek G75-F | 1.12 lb/gal | • | • | | • | • |

¹ • Fully Qualified ○ Conditional Approval; targeted LAQA will be performed



11/5/03

Products Meeting the Canadian Specification for Long-Term Retardants

(Qualified or Approved and commercially available)

| Chemical | Mix Ratio (Pounds concentrate Per gallon water) | Qualified/Approved Applications ¹ | |
|--|---|--|-----------------------|
| | | Aerial Application | Ground Application |
| LONG-TERM FIRE RETARDANTS (Meets Qualifying Performance Requirements for Long-Term Fire Retardants, CIFFC, 2002) | | | |
| Dry Concentrate | | | |
| Gum-thickened; Permanent or Temporary Base | | | |
| Fire-Trol GTS-R | 1.66 lb/gal | • | • |
| Phos-Chek D75-R | 1.20 lb/gal | • | • |
| Gum-thickened; Temporary Base | | | |
| Phos-Chek 259-R | 1.14 lb/gal | • | • |
| Phos-Chek G75-W | 1.12 lb/gal | | • |
| Unthickened - None available | | | |
| Wet Concentrate | | | |
| Gum-thickened; Permanent or Temporary Base | | | |
| Phos-Chek HV-R | 3.6:1 | • | • |
| Phos-Chek HV-R | 3.1:1 | • | • |
| Phos-Chek MV-R | 3.6:1 | • | • |
| Phos-Chek LV-R | 3.6:1 | • | • |
| Phos-Chek LC-95A | 5.5:1 | • | • |
| Phos-Chek LC-95D | 4.25:1 | • | • |
| Unthickened; Permanent or Temporary Base | | | |
| Fire-Trol LCA-R | 5:1 | • | • |
| Fire-Trol LCG-R | 4.75:1 | • | • |
| Fire-Trol 931-R | 5.5:1 | • | • |
| Fire-Trol FTR ² | 4.75:1 | ○ | ○ |
| Fire-Trol FTR ² | 5.5:1 | ○ | ○ |

¹ • Fully Qualified ○ Conditional Approval

² A field evaluation must be completed to upgrade product status to qualified. The evaluation will be scheduled when a product is selected for use.