

Ground Applied

Long-Term Retardant in Ground Applications



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Phos-Chek Long-Term Retardant is a valuable fire management tool for controlling and suppressing wildland fires. For over 50 years, Phos-Chek has been applied from the air by the world's largest fire management agencies. Now Fire Managers are getting great results by applying Phos-Chek from the ground. Phos-Chek ground applied products have the same superior performance, plus pinpoint, cost effective placement and the ability to apply retardant in all weather conditions, 24 hours a day.

Phos-Chek Long-Term Retardant creates a fire break by making wildland fuels non-flammable. It works even when dry, so apply it once and it stays effective even after you've moved on. It can be applied by fire engine, water tender, or with ICL's custom Ground Applied equipment.

Advantages of Ground Application

- Uniform coverage ensures maximum effectiveness
- Can be applied hours, days, even weeks in advance
- Application 24 hours per day, 7 days per week including night operations
- Can be applied when planes are not available due to smoke, winds, visibility or in urban interface areas
- Pinpoint accuracy for protection of sensitive areas

How and Where Ground Applied Retardant Can Be Used

- Extending roadway fire breaks
- Around critical infrastructure such as communication towers and highway signage
- Protection for homes in the urban interface, campgrounds, rest areas and railway interface areas
- Pre-treatment for areas at high risk for fires
- Around and within communities
- Protection for historical and national monuments and sensitive and endangered habitats
- Prescribed fire control (a light on the land alternative to mechanical lines)
- Protection for fence posts, power poles, easements and rights-of-way, storage sheds, etc.
- Support for backburn operations



Mixing and Application Services

- Support for application by Agency Engines
- ICL Application Systems through National and State agreements
- Hand lines, Ranch/Farm style ATV's with Poly Tanks, and Mark III Pump systems
- Backpack sprayers
- ICL pre-treat tenders with 4000 gallons of mixed solution
- Mobile concentrate storage of 3000 gallons for resupply
- ICL trained personnel including Qualified Mix Masters, Technical representatives and NWCG Fire fighters for line operations

Products

- Phos-Chek LC95-W Uncolored LC for areas where retardant does not need to be visible
- Phos-Chek LC95A-F Fugitive Colored LC when fire fighters need to see where the retardant has been applied. Color will disappear within several days/weeks
- Phos-Chek 259-F Fugitive colored powder for ground operations in conjunction with portable helicopter operations



Recommended Retardant Coverage Levels

NFDRS FM	Behavior FM	Coverage Level	Fuel Description
A, L, S	1	1	Annual & perennial Western Grasses, Tundra
C	2	2	Conifer w/Grass
H, R	8	2	Shortneedle Closed Conifer, Spring Hardwood
E, P, U	9	2	Longneedle Conifer, Fall Hardwood
T	2	3	Sagebrush with Grass
N	3	3	Sawgrass
F	5	3	Intermediate Brush (Green)
K	11	3	Light Slash
G	10	4	Shortneedle Conifer (heavy, dead litter)
O	4	4	Southern Rough
F, Q	6	4	Intermediate Brush (cured; Alaska Black Spruce
B, O	4	Greater than 6	California Mixed Chaparral; High Pocosin
J	12	Greater than 6	Medium and Heavy Slash
I	13	Greater than 6	Medium and Heavy Slash

Adjust Coverage Level based on fire behavior, i.e., for smoldering fires decrease by 1

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Relative Effectiveness of Common Fire Chemicals

Application	Long-Term Retardant	Gel	Class A Foam	Water
Indirect Attack	✓✓✓✓	✓✓	✓	
Direct/Parallel Attack	✓✓✓✓	✓✓✓	✓✓	✓
Interior Structure Attack		✓✓	✓✓✓✓	✓
Structure Protection-Indirect Application	✓✓✓✓	✓✓✓	✓✓	✓
Structure Protection-Direct Application		✓✓✓✓	✓✓✓	✓
Mop Up	✓✓	✓✓	✓✓✓✓	✓
Prescribed Burn Control	✓✓✓✓	✓✓✓	✓✓	✓
Burnout Operations	✓✓✓✓	✓✓✓	✓✓	✓
✓✓✓✓ = Superior Effectiveness ✓✓✓ = Excellent Effectiveness ✓✓ = Good Effectiveness ✓ = Baseline Effectiveness				

Yield			
Product	Package	Mix With	Yields Mixed Retardant
LC95W or LC95A-F	5 gal. pails	27.5 gal. of water	32.5 gal.
	55 gal. drum	302.5 gal. of water	357.5 gal.
	260 gal. totes	1430 gal. of water	1690 gal.
	Bulk Tanker	5.5 gal./gal. conc	6.5 gal./gal. conc
295-F	50 lb. pail	44 gal. of water	47 gal.
	2000 lbs. Phos-Bin	1755 gal. of water	1869 gal.

Physical Properties					
Product	Weight of Retardant Concentrate	Weight of Mixed Retardant	Specific Gravity of Mixed Retardant	Viscosity of Mixed Retardant	Refractometer Reading for Mixed Retardant
	Lbs./gal.	Lbs./gal.		cP	
LC95W	12.3	8.97	1.075-1.085	100-400	12.75-14.5
LC95A-F	12.3	8.97	1.075-1.085	100-400	12.75-14.5
259-F	NA	8.90	1.063-1.074	100-400	12.25-14.5

Pricing/Ordering

- For Product, please refer to USDA Contract AG-024B-S-13-9010
- For Equipment and Services, please refer to USDA Contract AG-024B-S-14-9002
- To order, please call us at **909-983-0772**

For more information, contact any of our worldwide ICL Fire Safety offices.

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