



PYROBREAK™ EX14

Product Bulletin

Pyrobreak EX14 is a water based phosphonate ester flame retardant used to impart durable flame retardancy to polyester fabrics. **Pyrobreak EX14** is a low viscosity, 40 percent active product that can provide permanent fixation on polyester fabric with as little as 1.0 to 2.0 percent on a dry weight basis. Fabrics properly treated and fixed will meet the DOC FF 3-71 standards for children's sleepwear and NFPA 701 tests. The flame retardancy as measured by DOC FF 3-71 and NFPA 701 is durable to 50 launderings at 140 F.

APPEARANCE

1. Clear liquid
2. Very low odor

TYPICAL PROPERTIES

Weight/gallon:	9.3 ± .2 lbs.
Viscosity:	>5 centipoise
pH:	6.2 ± 0.2
Solids:	40.0 ± 0.5%

LEVELS OF TREATMENT AND FABRIC PROCESSING

To produce flame retardant polyester fabrics which meet DOC FF3-71 and NFPA 701 specifications, the application of sufficient **Pyrobreak EX14** flame retardant to fix 1.0-1.5% flame retardant on the fabric is normally adequate.

While actual fixation efficiencies vary with fabric type and pretreatment, the application of 8-15% **Pyrobreak EX14** flame retardant is usually sufficient to pass DOC FF 3-71 and NFPA 701 standards. In order to determine optimum application levels, each fabric style to be processed should be treated with varying levels of **Pyrobreak EX14** flame retardant and tested for flammability.

BATH PREPARATION AND PROCESSING

Pyrobreak EX14 flame retardant may be applied through aqueous solutions by a pad, dry, thermosol, and rinse procedure without additional bath additives. It is, however, compatible with most common wetting agents, antimigrants, and buffers used to improve fabric processing and properties.

Pyrobreak EX14 flame retardant is compatible with nonionic and anionic surfactants which may be used to promote rapid, even, and thorough wetting of the fabric. The use of a buffer to raise the pad-bath pH to 6.0-6.5 may be desirable.

Bath preparation and processing conditions shown below are recommended for light weight fabrics.

Bath Preparation & Processing procedure

1. Dissolve sufficient **Pyrobreak EX14** flame retardant in water to give a wet pick-up of 8-15% flame retardant based on original fabric weight.
2. Adjust the solution pH to 6.0-6.5 using disodium phosphate.
3. Dissolve 0.02-0.05% nonionic or anionic surfactant if required.

Processing

4. Remove all residual size and oils.
5. Pad to 40-60% wet pick-up.
6. Dry for 1-2 minutes at 225-275 F.
7. Thermosol 1-2 minutes at 365-400 F.
8. Rinse thoroughly.
9. Dry

It should be noted that the fixation efficiency of **Pyrobreak EX14** flame retardant varies with temperature. While **Pyrobreak EX14** flame retardant may be fixed permanently at lower temperatures, it is recommended that temperatures in the 380-400° F range be used for woven fabric, and 365-380° F for knit fabrics, in order to maximize fixation efficiencies.

Effect of Curing Temperature on Fixation Efficiency	
Curing Temperature (deg. Fahrenheit)	% Fixation
338-347	41
356-365	43
374-383	50
392-401	51

A thermosol time of 1-2 minutes is recommended for optimum fixation.

NOTE: While **Pyrobreak EX14** functions well on many materials, it does not provide flame retardancy to every substrate. The buyer accepts liability for determining whether the product is suitable for the buyer's intended use.

PACKAGING

The product is available in 5-gallon pails or 55-gallon drums. It should not be repackaged or diluted without consulting PyroTech.

STORAGE

Pyrobreak EX14 should be stored at temperatures above freezing and below 100° F. Should the product freeze, it can be reconstituted by warming gently to 75° F with mixing. At temperatures above 90° F there may be a slight amount of ammonia gas released. Care should be taken when opening drums as there may be a slight pressure build up.

HANDLING AND USE

Wear rubber gloves and safety goggles to avoid potential skin or eye irritation when applying the product. While **Pyrobreak EX14** is considered non-hazardous, the product may cause skin irritation in certain individuals.

The product should be stirred before application. Some applications may require dilution with water. Check with the manufacturer for instructions. The product contains a low-foaming wetting agent so the use of a defoamer is not required and should be avoided as it may reduce wettability.

Pyrobreak EX14 is completely water soluble and, therefore, the application equipment and spills may be cleaned with water.

SAFETY AND FIRST AID

Pyrobreak EX14 contains no solvents, toxic or hazardous chemical components. The following procedures should be followed when using the product:

1. Use rubber gloves and safety goggles when handling the product. If product is sprayed, a paint spray dust mask should be used.
2. Flush eyes with water for at least 15 minutes if product contacts them. If irritation continues, seek medical attention.
3. Wash skin thoroughly with soap and water. If irritation occurs, seek medical attention.
4. Induce vomiting and seek medical attention if product is swallowed.

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