

Product Bulletin

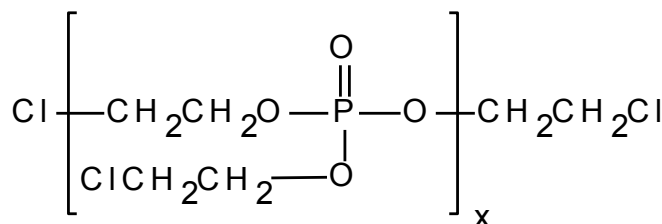
supresta™
BUILT-IN DEFENSE

Fyrol® 99

Fyrol®
Flame Retardants

Chemical Name: Oligomeric chloroalkyl phosphate ester

CAS #: 109640-81-5



Fyrol Product Selector

	Key polyurethane foam application	Key characteristic
6	Rigid, flexible-flame lamination	Reactive flame retardant.
38	Flexible	Low scorch.
FR-2	Flexible	Excellent hydrolytic stability, low volatility, low fogging, and processing characteristics.
FR-7	Flexible	Good compression set, IFD and scorch properties, low volatility, low scorch, and good processing characteristics.
HF-4	Flexible	Halogen-free, low scorch with good compression set and IFD properties. Recommended for Cal 117 and MVSS 302 foams.
PCF	Rigid, flexible-BS5852	Excellent hydrolytic stability.
PNX	Flexible	Highly efficient halogen-free flame retardant.
TEP	Rigid	Halogen-free flame retardant, excellent viscosity reducer for high viscosity polyols.

Overview

Fyrol® 99 is an oligomeric product containing both chlorine and phosphorus, designed for use in thermosetting and thermoplastic resins for the transportation, construction, housing and paper industries. The product has low volatility and is very efficient.

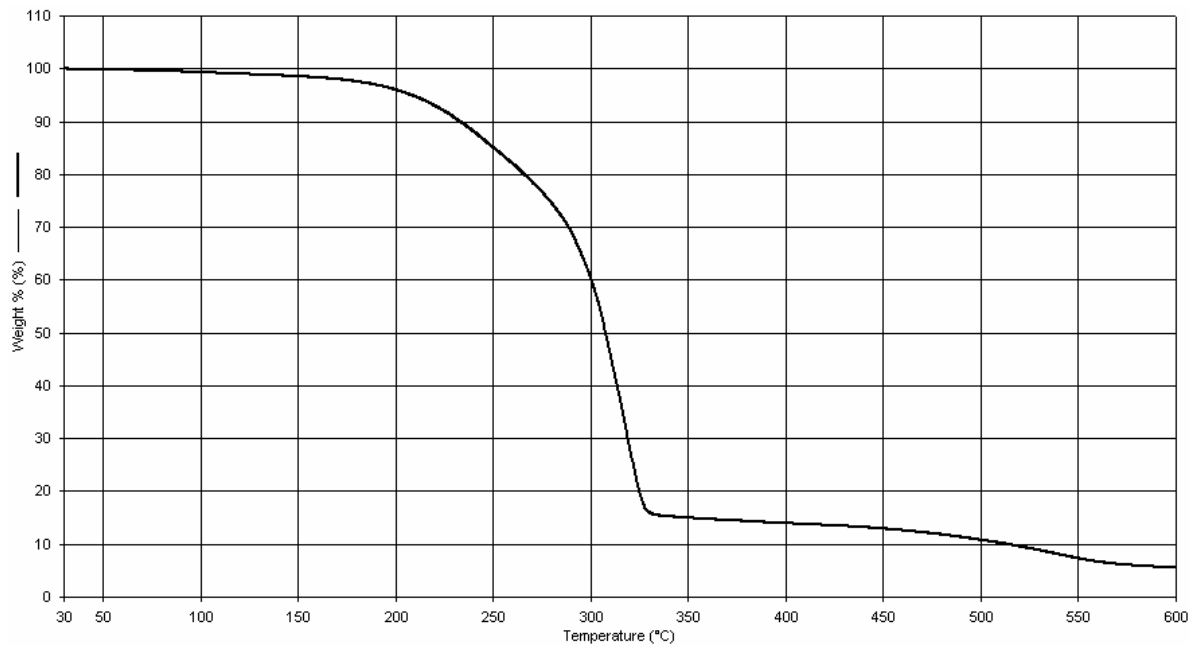
Key Applications

Fyrol® 99 is suited for rigid polyurethane foam applications; the use of this flame retardant can easily achieve the UL94 HF1 in rigid PU systems. Fyrol® 99 is also recommended for use as an effective flame retardant additive in unsaturated polyester resins, thermosets (epoxy systems and phenolics), acrylic latices and molding compounds, and coating formulations.

Typical Properties

Physical appearance	Colorless liquid
Phosphorus content, wt. %	14.0
Chlorine content, wt. %	26.0
Specific gravity, 25°C/25°C	1.450
Density @ 25°C, lbs/gal	12.1
	kg/m ³
	1450
Viscosity @ 25°C, mPa.s	2200
Acidity, mg KOH/g	0.40
Water content, wt. %	0.05

Thermogravimetric Analysis: Fyrol® 99 (10°C rise/minute in nitrogen)



2% wt. Loss	170°C
5% wt. Loss	208°C
10% wt. Loss	233°C

Safety & Handling

Consult the Material Safety Data Sheet for this product.

Shipping Information

Available in bulk tank trucks, isocontainers, 3,000 lb totes, and 637 lb drums.

For more information about our products and to place an order, please contact one of Supresta's regional sales offices.

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