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FLAME RETARDANTS - PHOSPHORUS BASED

Flame retardants save many lives and property because they prevent accidental fires. However, several concerns related to chemical release into the environment and potential health effects shroud these additives. **Since halogenated flame retardants have been in the focus of public scrutiny**, flame retardants based on other chemistries like **phosphorus** and nitrogen have been developed and **prove their environmental benefits**.

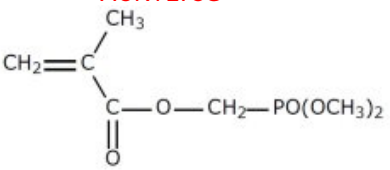
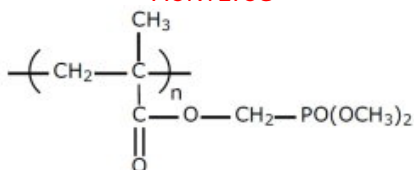
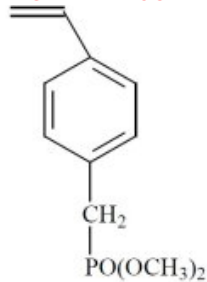
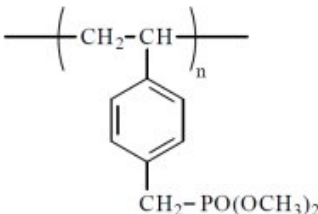
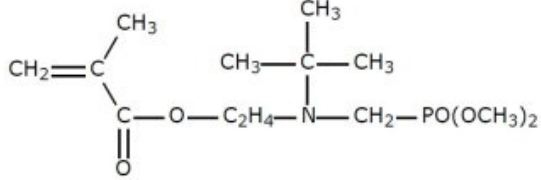
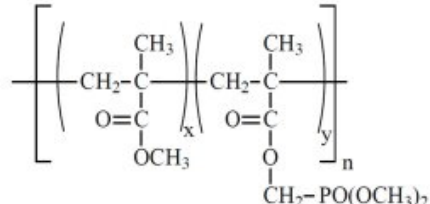
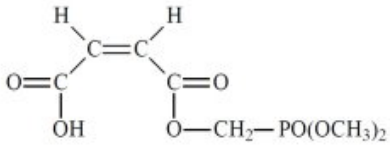
Phosphorus chemicals are known as flame retardants. Typically, phosphorus based flame retardant is designed to develop its activity in combination with the starting decomposition of basic polymer.

SPECIFIC POLYMERS proposes close to **200 chemicals containing phosphorus** (monomers and polymers).

Do not hesitate to contact us for any **special functionalities** you need: cedric.loubat@specificpolymers.fr

FUNCTIONAL - REACTIVE

<p style="text-align: center;">EPOXY</p> $\text{Cyclohexane ring} - \text{CH}_2 - \text{O} - \text{C}_3\text{H}_6 - \text{PO}(\text{OCH}_3)_2$ <p style="text-align: center;">SP-3-15-004</p>	<p style="text-align: center;">EPOXY</p> $\text{Cyclohexane ring} - \text{CH}_2 - \text{PO}(\text{OCH}_3)_2$ <p style="text-align: center;">SP-3-15-003</p>
<p style="text-align: center;">POLYOLEFINS (PE-PP)</p> $\begin{array}{c} \text{OCH}_3 \\ \\ \text{C}_4\text{H}_9 - \text{P} = \text{O} \\ \\ \text{OCH}_3 \end{array}$ <p style="text-align: center;">SP-31-009</p>	<p style="text-align: center;">POLURETHANES</p> $\text{HO} - \text{CH}_2 - \text{PO}(\text{OCH}_3)_2$ <p style="text-align: center;">SP-3-13-001</p>
<p style="text-align: center;">EPOXY</p> $\text{HO}_2\text{C} - \text{C}_3\text{H}_6 - \text{PO}(\text{OH})_2$ <p style="text-align: center;">SP-3-10-005</p>	<p style="text-align: center;">CLICK CHEMISTRY</p> $\text{N}_3 - \text{C}_{11}\text{H}_{22} - \text{PO}(\text{OC}_2\text{H}_5)_2$ <p style="text-align: center;">SP-3-19-005</p>
<p style="text-align: center;">COMPOSITES-FILLERS-COUPLING AGENTS</p> $(\text{C}_2\text{H}_5\text{O})_3\text{Si} - \text{C}_2\text{H}_4 - \text{PO}(\text{OCH}_3)_2$ <p style="text-align: center;">SP-3-12-001</p>	<p style="text-align: center;">FLUOROPOLYMERS</p> $\text{C}_6\text{F}_{13} - \text{C}_2\text{H}_4 - \text{PO}(\text{OCH}_3)_2$ <p style="text-align: center;">SP-01-004</p>

MONOMERS	OLIGOMERS - POLYMERS
<p style="text-align: center;">ACRYLICS</p>  <p style="text-align: center;">SP-41-003</p>	<p style="text-align: center;">ACRYLICS</p>  <p style="text-align: center;">SP-4P-1-005</p>
<p style="text-align: center;">STYRENICS</p>  <p style="text-align: center;">SP-51-001</p>	<p style="text-align: center;">STYRENICS</p>  <p style="text-align: center;">SP-5P-1-004</p>
<p style="text-align: center;">ACRYLICS</p>  <p style="text-align: center;">SP-41-001</p>	<p>Various copolymers containing phosphonic monomers can be synthesized.</p>  <p style="text-align: center;">SP-4P-1-001</p> <p>For any copolymers, the phosphorous content is adjustable. The L.O.I (limiting Oxygen Index) is directly related to the phosphorus content.</p>
<p style="text-align: center;">POLYOLEFINS (REACTIVE MONOMERS)</p> <p style="text-align: center;">$\text{CH}_2=\text{CH}-\text{CH}_2-\text{PO}(\text{OCH}_3)_2$</p> <p style="text-align: center;">SP-61-001</p>	
<p style="text-align: center;">UNSATURATED POLYESTERS</p>  <p style="text-align: center;">SP-41-005</p>	

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