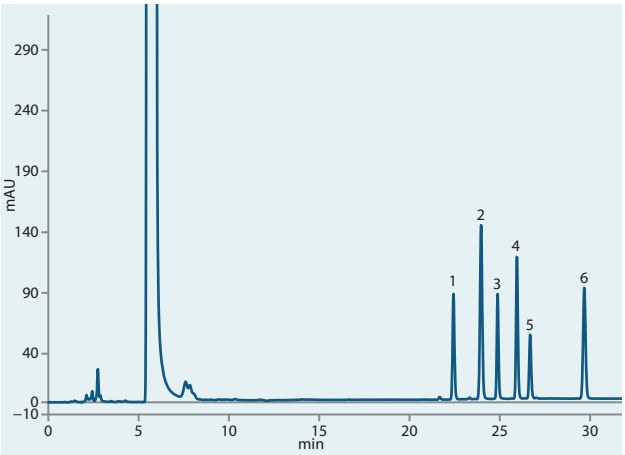
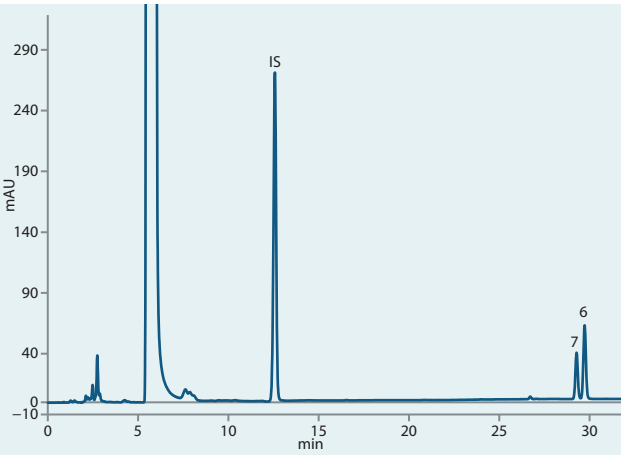
ADDITIVES IN PLASTICS

INTRODUCTION

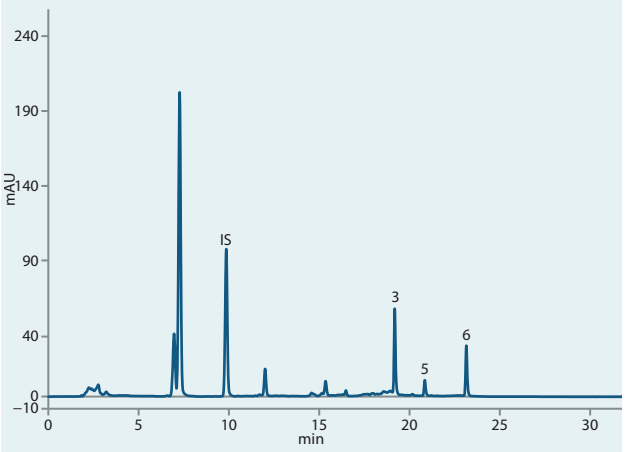
Polymer additives are important for stabilization in manufacturing process and stabilization over time. This application note shows the analysis of selected a process, UV and oxidation stabilizers widely used in polymers. The samples are extracted under reflux and after polymer precipitation, the additives are analyzed by HPLC. The results are essential for quality control.



Standard mixture 1



Standard mixture 2



Real sample

Note: This methos was shorten – the initial MF ration was hold for 1 minute only.

Column	ARION® Plus C18 HPLC column, 5 µm
Dimensions	150 mm × 4.6 mm
Part number	ARI-5720-LK46
Mobile phase	A: AcN:EtAc 50:50 (v/v) B: MeOH/H2O 75:25 (v/v)
Gradient elution	**Time** **A (%)** **B (%)** 0 5 95 5 5 95 25 100 0 32 100 0
Flow rate	0.8 ml/min
Temperature	40 °C
Detection	UV @270 nm
Analytes	**1. Irganox 3114** (process stabiliser) **2. Tinuvin 328** (UV stabiliser) **3. Irganox 1010** (process stabiliser) **4. Irganox 1330** (process stabiliser) **5. Irgaphos 168 phosphate form** (oxidation stabiliser) **6. Irgaphos 168 phosphite form** (oxidation stabiliser) **7. Irganox 1076** (process stabiliser) **IS. Tinuvin P**

This Application was developed by

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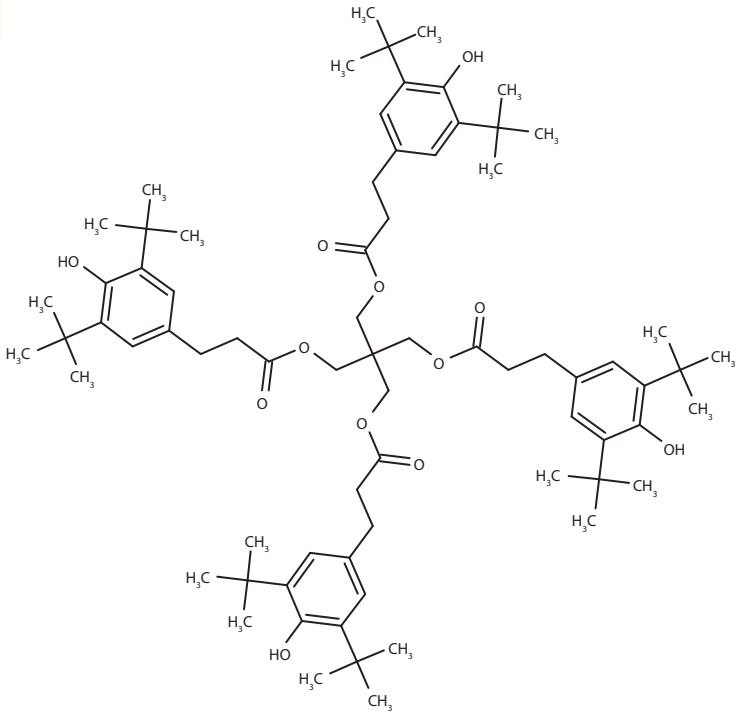
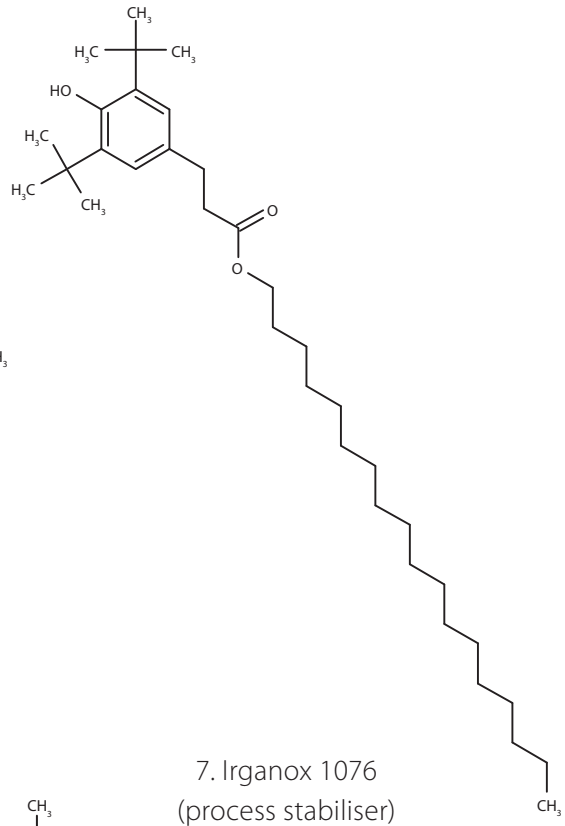
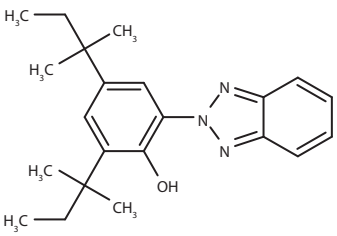


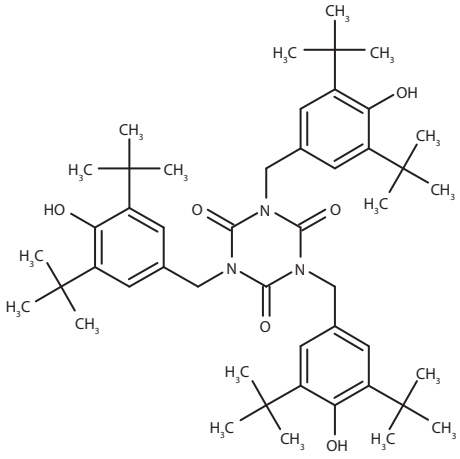
3. Irganox 1010 (process stabiliser)



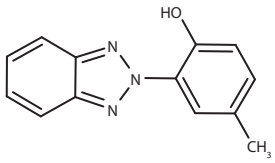
7. Irganox 1076
(process stabiliser)



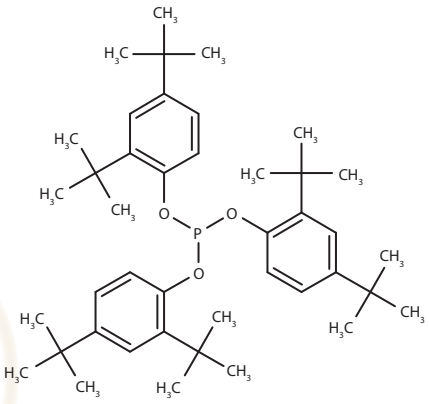
2. Tinuvin 328
(UV stabiliser)



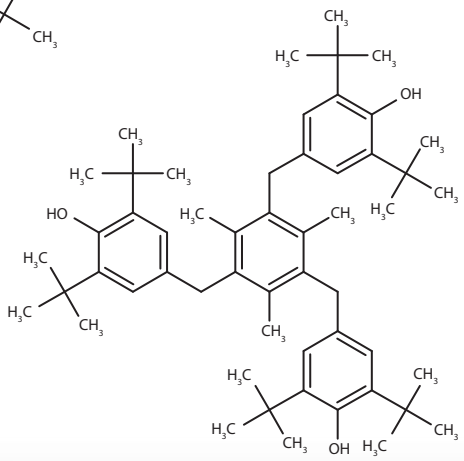
1. Irganox 3114
(process stabiliser)



IS. Tinuvin P



6. Irgaphos 168 phosphite form
(oxidation stabiliser)



4. Irganox 1330 (process stabiliser)