MO050 New flame retardants: chemical identification and A. Covaci, University of Antwerp / Toxicological properties Center; G. Malarvannan, University of Antwerp / Toxicological Center Dept of Pharmaceutical Sciences; G. Poma, University of Antwerp / Toxicological Center; P. Kurt-Karakus, Bursa Technical University / Environmental Engineering Department. Flame retardants (FRs) are chemicals used in a wide range of commercial and household products in order to reduce their flammability. Due to recent legislation and restrictions in the use of brominated FRs, a large number of alternative FRs, mostly non-halogenated, have been introduced to the market. The main aim of this study was to investigate the chemical identity of four new flame retardants technical mixtures and to inform about their properties. For each FR mixture, 5 mg were separately dissolved in isooctane or methanol, and after appropriate dilution, the solutions were analyzed. A combination of analytical techniques was used, such as gas chromatography-mass spectrometry (in electron impact ionization and electron-capture negative ionization modes) and liquid chromatographymass spectrometry (with positive and negative electrospray ionization). CETAFLAM-DB168 (Avocet) is a phosphorus-based flame retardant containing an organic phosphate (tri n-butyl phosphate - TNBP) used for textiles and fabrics in aircraft, automotives, and hotels. It allows durable flame retardant properties to be transferred to polyester yarn and fabrics by simple exhaust techniques. CETAFLAM-DB9 (Avocet) is a phosphorus-based flame retardant containing a new inorganic phosphinate and an organic phosphate (trichloropropyl phosphate -TCPP) for polyester. It is used in the automobile, clothing, workwear, furnishings, curtains and decoration and public transport textile markets. RUCO-FLAM PSY-E (Rudolf Group) is an organic phosphorus flame retardant with high percentage phosphorus content used for polyester (PES) and possibly also polyacrylate (PA) polymers. PEKOFLAM PES (Clariant) is an organophosphorus-based non-halogenated flame retardant for use on PES and PA textiles and in many (synthetic) polymer systems with 'wash resistant' effects. It consists of a mixture of cyclic di- and triphosphonates.