NEW USES OF X-RAY FLUORESCENCE SPECTROSCOPY (XRF) AS A PUBLIC HEALTH SCREENING TOOL FOR THE PRESENCE OF HAZARDOUS CHEMICALS IN CONSUMER PRODUCTS

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Handheld and non-destructive X-ray Fluorescence Spectroscopy (XRF) yields data of most elements at low-ppm and higher levels with good correlation to time consuming and destructive traditional analytical techniques. The author has conducted extensive testing for hazardous chemicals contained in plastic components. Over 20,000 tests of over 8,500 consumer products have been conducted, including 850 domestic and imported 1990-2010 model year cars, in 130 children's car seats, and over 5,000 children's products and toys. The presentation of data includes analysis of trends in brominated flame retardants (BFRs), PVC, lead, and heavy metals use in plastics with emphasis on relevance to public health. Development of methodologies to use test data for product ratings (see HealthyStuff.org) will be reviewed. Initiate data from studies to validate the use of XRF on new and emerging chemicals of concern in products will also be reviewed.