

Fire Safety Regulations and Testing - Their Impact on the Use of Polymers and Flame Retardants

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In most countries of the world, the state, as official custodian of public safety, ensures fire protection via relevant regulations. Fire standards put the general requirements of fire protection defined in the legislation into practice. The regulations take particular care of the very beginning of an initiating fire, as low energy ignition sources such as matches and glowing wires are the major cause of fires. Flame retardants have shown to be a very effective means of preventing fires. With their help, basic fire safety levels for flammability and flame propagation are met. State of the art and new trends for fire safety regulations and tests in the fields building, transportation and electrical engineering/electronics are presented and their impact on flame retarded polymers is shown.

In recent years, some flame retardants have come under suspicion for environmental and health reasons. Following campaigns of NGOs against the use of flame retardants in general, the introduction of external open flame tests in international standards for audio/video equipment has been rejected and fire safety regulations in California now exclude open flame tests. The systematic negation of ignition and flammability tests because of the use of flame retardants would create a situation ignoring fire safety in the very beginning of an initiating fire. This would cause a dramatic increase of fires initiated by small ignition sources and induce an increasing fire risk for the general public and, as a consequence, lead to more fire casualties.