

Study confirms that uncontrolled e-waste treatment produces carcinogenic effects

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A study carried out by the research group of the University of Alicante "Waste, Pyrolysis and Combustion", University of Alicante, confirms that most of the waste from electrical and electronic equipment (WEEE) is not treated properly. In this sense, once reused and recycled in treatment plants, electronic devices will pass into thermal systems (incinerators, cement plants, ceramics ...) where contaminants can be destroyed under controlled conditions. Unfortunately, as stated by the research group, most of these wastes are not treated properly and are being moved to third world countries where they are burned with no control producing brominated pollutants, which have carcinogenic effects. Another small part of this electronic remains reaches controlled dumping sites in our country, with the danger of the emission of carcinogens caused by spontaneous combustion.

This research is part of a doctoral thesis on thermal decomposition of electrical and [electronic equipment](#) waste: kinetic study and formation of pollutants, by Nuria Ortuño, from the Department of Chemical Engineering, under the supervision of UA lecturers Juan A . Conesa and Julia Moltó. Its main objective is to analyse the effect of the presence of metals during the WEEE treatment. Researchers explain that during the four years of the study, they have observed, that the amount of brominated pollutants increases dramatically in the presence of metals and with low temperature and low presence of oxygen, which are very much controlled in heat treatment systems.

Pollution derived from use

Furthermore, Nuria Ortuño has used various substances in electronic equipment, used mobile printed circuits and TV cases to investigate the possibility of producing brominated contaminants during treatment and even during the product life.

In the case of the emission of pollutants during the use of television, due to overheating which sometimes these devices are subjected to, the doctoral student has done a study on heating up to 250 ° C a TV case made of high impact polystyrene, common material in these devices. Thesis director Juan A. Conesa explains that at temperatures below 100 ° C , which is reached by televisions in our homes, there are no major pollution problems, the trouble is the temperatures they are subjected to during the manufacturing or recycling processes.

Recycling process

Electronic waste is usually deposited at recycling centres in each city or country. From there, they are carried to authorised recycling plants for decontamination and distribution by types such as plastics, metals ... for a subsequent recycling process. During this process, they explain, there are materials which currently can not be recycled and therefore are also likely to produce harmful effects.

Recent data obtained in 2012, suggest that 9.9 million tonnes of WEEE were generated in Europe. In Spain, the figure amounted to 800 thousand tonnes, equivalent to 18 kg per capita.

Provided by Asociacion RUVID

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