pinfa
Phosphorus, Inorganic & Nitrogen Flame Retardants Association

11 June 2012

PINFA Statement with respect to:

Recycling of Polymers containing Flame Retardants

Plastics are far too valuable to just throw them away at the end of their useful lifetime and bury them in landfills or even worse, litter the countryside. There are several ways of recycling plastics:

1) Mechanical recycling = re-using the plastics as such after separation of different kinds, grinding, melting etc. and turning into new products

2) Feedstock recycling = breakdown of the plastics into their chemical constituents which can then be used to produce new plastics or other materials

3) Energy recovery = capturing the energy content of plastics, usually by combustion with proper energy generation (electricity, heat, steam)

Flame retardants not only add safety to plastics, but usually also economic value to plastics. Plastics containing phosphorus, inorganic and nitrogen (PIN) flame retardants can be recycled in principle. This is regularly done with production waste at polymer compounding facilities, because there are clean and well defined recycle streams.

However, for mechanical recycling of post-consumer waste, there will be always a mix of end products and we will face difficult separation processes and also the logistic costs should not be underestimated. Moreover, the dismantling will require a lot of attention and so ideally the products should be designed for dismantling. In many cases you will also find mixtures of plastics and metals that cannot easily be dismantled. This makes mechanical recycling a challenge for the coming years which needs to be balanced with other recovery options

When electronic waste is recycled with the main aim to reclaim the precious metals, plastics are often only seen as a contaminant with some energy content. So the scrap is incinerated to get rid of the plastic and concentrate the metals. If this is done under crude conditions like in developing nations, then workers and the environment are exposed to highly toxic combustion products.
This is an unacceptable consequence of illegal and irresponsible exports of electronic waste and is in conflict with sustainable guidelines and the resource efficiency program of the European Union.

The recycling of plastics containing flame retardants needs to be executed under carefully controlled conditions to avoid that people are exposed to hazardous materials or degradation products. In that respect the use of plastics containing PIN flame retardants is compliant with the WEEE directive and does not require costly separation and treatment[1].

For all enquiries please contact:
Dr Philippe Salémis
Pinfa Secretary General
Email : psa@cefic.be
Tel.: +32 (0) 2 676 74 36

pinfa is the Phosphorus, Inorganic and Nitrogen Flame Retardants Association and is a Sector Group within Cefic, the European Chemical Industry Council. pinfa represents the manufacturers and users of non-halogenated phosphorus, inorganic and nitrogen flame retardants (PIN FRs).
The members of pinfa share the common vision of continuously improving the environmental and health profile of their flame retardant products. Therefore, pinfa members seek to dialogue with the users of PIN FRs in order to identify their needs and technologies they are looking for.
pinfa also co-operates with national & supranational organisations (EU, OECD, United Nations) & other industry associations, consumer organisations & non-governmental organisations and will ensure the development of scientific knowledge related to the whole life cycle of PIN FRs

- ENDS -

[1] 2002/96/EC, Annex II, Selective treatment for materials and components of waste electrical and electronic equipment in accordance
with Article 6(1)