



Latest News

Diesel particulate filters are challenging precious metals recycler

Diesel particulate filters (DPF) were introduced in the years 2006 - 2009 to reduce emissions of harmful particulate matter from Diesel cars.

Now, ten years later they have started to hit the recycling market. Bearing in mind that Europe has approx. 50 % diesel share in his car park, soon every second catalyst for recycling will be a DPF.

The DPF substrate is significantly different from a regular spent auto catalyst (SAC).

A regular SAC (diesel oxidation catalyst or gasoline three-way) is made of a 1 kg cordierite ceramic monolith coated with precious metals. Cordierite, alumina, magnesia and silica-oxide ceramic can be easily smelted in an electric plasma or arc furnace. During this smelting process the precious metals are separated from the substrate ceramic and collected in iron.

DPF's are often made from a 3 kg silicon-carbide (SiC) brick and this ceramic substrate needs a totally different smelting environment. The carbon from the carbide needs to be oxidized into carbon dioxide before the precious metal separation can take place.

If both substrates, cordierite and silicon-carbide, are mixed together a good separation between slag and precious metals is very difficult and sometimes impossible. Some smelters already do not accept these mixtures. There are existing processes for both types material, a separate treatment is not a problem, only the mixed material is challenging.

It's very important to separate both types early in the recycling chain, after cutting and dismantling a separation can't be done easily.

Hensel Recycling is engaged in this issue since a couple of years and we invested in analytical equipment to analyze the SiC / Carbon content in recycling material. Also our smelting know-how, from running a plasma furnace, helped us to find the best recycling route for automotive catalyst and diesel-filters.

You can find information and data about DPF in our mobile application at <https://kabimobile.hensel-recycling.com/frontend>

Below are pictures of both substrates

Cordierite



SiC

