

PM REFINABLES - PROPOSAL TO SPLIT FLUE DUST, PM REFINING

The proposed criterion to split these is the **process** they originate from. This would result in 3 subgroups:

- 1) Flue dust from pyro-metallurgical (smelting) processes;
- 2) Flue dust from melting processes;
- 3) Flue dust from calcination, incineration and drying processes.

However, because flue dusts are usually collected in a centralised system, and their manufacture and use stage take place under the same conditions (always pyro-), the assessment of individual subgroups could be difficult.

➔ **Check variability of composition across 3 groups above based on ARCHE's database of composition information before deciding on whether to split (and assess separately) or keep in one group.**

Based on the data submitted by PM Refiners in Summer 2009 (after grouping of PM Refinables as per registration), below table of production processes and sources for flue dust was produced.

Company code	General description of production process	Source	Proposed sub-group
	Flue Dust produced as a by-product of PM Smelting operations, material is then leached for PGM recovery		1. Product resulting from the smelting, refining and/or use of Ag and its alloys obtained from primary and secondary sources and including recycled plant intermediates. Recovered from exhaust air by filtration via cloth bags, arising from hygiene extraction systems on processes in the Ag recovery flowsheet.
8	Flue dust captured from reductive smelting of PM bearing feeds to produce a PM Pb alloy and a base metal silicate and borate slag	A mixture of lead oxide, silicates and fluxes containing low concentrations of PM's from secondary sources.	
1	Dust collected from bag filter of fire refining process (from Trof converter)		
4	Obtained from the production process of metal dore - smelting and refining in TBRC Converter (Dust TBRC 1 Converter)	Decopperized Slime from copper electrolysis	
4	Obtained in the further pyrometallurgical refining of doré (Ag rich materials) (Dust TBRC 2 Converter)	Dore, Raw silver, Silver rich bullion, Silver rich materials	
9	Metal fume and dust is generated by processes for smelting and refining silver. It is filtered from the air by cloth bags.	Finely divided metal oxides and other fine particulates recovered from process exhaust air by filtration cloth bags. Fate: Returned to the Ag Rotary Furnace for recovery / disposal.	
7	Flue Dust produced as a by-product of Precious Metal Smelting operations, material is then leached for PGM recovery	Smelting of Products with high PM content from primary and secondary sources,	
3	The dust obtained from the refining of materials from primary and secondary sources containing gold, iridium, osmium, palladium, platinum, rhenium, ruthenium and silver. Composed primarily of lead with traces of other metals	Products with high (>20%) PM content from primary and secondary sources (such as silver crusts,...)	