Substance Name	Substance Information Page	
		Legend: Decisive substance sameness criterion
Flue dust, lead-refining	https://echa.europa.eu/it/registration-dossier/-/registered-dossier/16099	Indicative substance sameness criterion
Substance description:	"Flue dust, lead refining" are residues removing volatile metals, non metals (as Cl, Br and C) and their oxides (as Pb). The substance is formed as a by-product from refining and smelting of lead containing materials. Flue dust lead refining consists of variable amounts of lead, copper, zinc, tin, cadmium, antimony and other metals in either alloy form or as compounds such as oxides, sulphides and sulphates. These residues are collected all together and eventually provide the raw material for other processes to recover the volatile metals captured in the dusts. (Flue dusts generation, collection and use is described in the 'Best Available Techniques (BAT) Reference Document for the Non-Ferrous Metals Industries', 2017).	No substance sameness criterion
SIEF description:		

Substance Identity				
EC/list name:	Flue dust, lead-refining	SMILES:	not applicable
IUPAC name:		InChI:	not applicable
Other names		Type of substance:	UVCB
EC/List no.:	273-809-1	origin:	Inorganic
CAS no.:	69029-67-0		
Molecular formula:	not applicable		

SID parameters	Samness criteria	Indication of variability (fixed, low or high variation)
Sources (input materials)	Primary and/or secondary lead-containing materials in lead production and refining processes: lead ores and concentrates, lead intermediates in the recycling/refining processes (e.g. bullion) (See process scheme)	medium
Process	Dust generated from primary lead production (lead containing ores and concentrates), secondary production of lead (recycling of lead containing materials) and further refining of lead containing materials such as bullion. All dust is collected in the off-gas cleaning system. It can be a solid (as collected from a baghouse or electro-static precipitator for example) or as a slurry (as collected from a wet scrubber, for example). Note: the flow attached to this Excel sheet aims at showing the complexity of the lead processes resulting into the flue-dust production lead refining. Despite the variability in the source materials (as clearly given in the picture) and thus the several processes in which all Pb intermediates are treated to enrich Pb concentration, all lead refining flue-dust is collected to be re-introduce in metals processes and extract further the volatile metals trapped in the dust (mainly as Cu, Pb and Zn). The OPCC NFM BREF Note explains the techniques in more details. (Chapter 2 mainly)	defined

Elemental composition

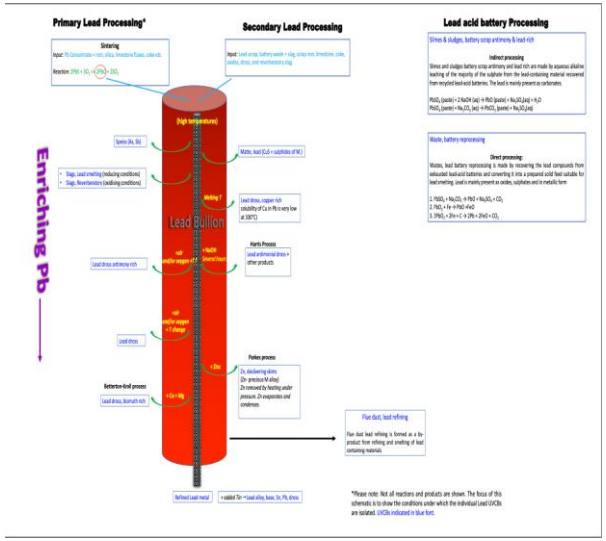
Core	min (% w/w)	max (% w/w)	Typical (%w/w)	
Pb	0	70	50	low
Zn	0	40	20	low
Sum of Pb+Zn	20	80	60	low
Al	0	6	2	medium
Fe	0	26	9	medium
Mg	0	3	1	medium
S	0	20	8	medium
Si (non-crystalline)	0	34	10	medium
Sum=			160	

Mineralogical composition

Mixture of oxides and sulphates (mainly Pb, Zn combined in more complex mineralogical species with Ca, Cd, Fe, Na)	20	80	65	mediium
Constituents present in concentration typically <20% (Al, K, Fe, Mg, Si) are present as silicates	0	20	18	low
Sum=			83	

Physical characteristiques	
physical state (at 20°C, 1013 hPa)	Powder form
melting point	
bulk density	

Conclusion	
	Flue dust, lead refining is a faint yellow to light grey, odourless solid (at 20°C and 101.3 kPA) in powder form. It results from primary and/or secondary lead-containing materials in lead production and refining processes. All dust (from primary and secondary processes) is collected in the off-gas cleaning system.



Note: see IUCLID Section 1.4 for information on regular elemental analysis , explaining the wide ranges and the fact elements might be below a dectection limit in specific samples. And shown from the Outotec reports analysing the LR samples, Cu is not identified in the specific samples, whereas it is in many other samples. This is due to the fact that the source materials might have been less Cu-volatile rich the day of the sampling.