Substance Name:	Substance Information Page:		
Lead antimonial dross	https://echa.europa.eu/registration-dossier/-/registered-dossier/14979	**Legend**	Decisive substance sameness criterion
			Indicative substance sameness criterion
Substance description:	A scum formed on the surface of antimonial lead. Consists primarily of sodium arsenate and sodium antimonate with some lead oxide and free caustic soda.		No substance sameness criterion
SIEF description:	Lead, antimonial, dross is formed when sodium hydroxide (caustic soda) is added to molten lead bullion to remove antimony, tin or arsenic. Lead, antimonial, dross refining consists of variable amounts of lead, antimony and other metals in either alloy form or as compounds such as oxides, sulphides and sulphates.		

Substance Identity				
EC/list name:	Lead, antimonial, dross	SMILES:	not applicable
IUPAC name:		InChI:	not applicable
Other names		Type of substance:	UVCB
EC/List no.:	273-795-7	origin:	Inorganic
CAS no.:	69029-51-2		
Molecular formula:	not applicable	Substance listed	

SID parameters	**Sameness criteria**	**Indication of variability** (fixed, low or high variation)
Sources (input materials)	Lead bullion, Sodium nitrate, Sodium hydroxide.	Low
Process	Production: molten feed is agitated (stirred) in kettles and cooled between 400°C to 600°C under oxidising conditions for a long residence time. A molten mixture of sodium nitrate and sodium hydroxide (caustic soda) is added to molten lead bullion to preferentially oxidise and precipitate sodium arsenite and/or sodium antimonite and/or sodium stannate in excess sodium hydroxide. This is known as the Harris Process and is often referred to as 'lead softening'. The process is detailed in Chapter 5 of the NFM BREF. The Harris Process can in either one or two stages; if in two stages, arsenic and tin are separated from the lead bullion in the first stage, and the antimony in the second stage with excess reagent.	Low
	Separation: Skimming	Fixed

Elemental composition	**Core**	**min (% w/w)**	**max (% w/w)**	**Typical (%w/w)**	
	Lead	Minimum 1 %		50	Medium
	Sodium	Minimum 0.5%		15.28	low
	Antimony	Minimum 0.1%		25	low
	Tin	0	28	27.48	Medium
	Selenium	0	10	5	low
	Tellurium	0	10	0.01	low
	Arsenic	0	5	3.79	low
	Potassium	0	25	10	low
	Zinc	0	10	5	low
	Copper	0	10	6.86	low
	Cadmium	0	10	0.25	low
	Silver	0	10	5	low
	Chlorine	0	10	5	low
	Silicon	0	5	4.23	low
	Bismuth	0	4	0.03	low
	Carbon	0	3	3	low
	Iron	0	1.5	1.34	low
	Indium	0	0.5	0.5	low
	Nickel	0	0.5	0.32	low
	Aluminium	0	0.2	0.05	low
	Sulphur	0	0.05	0.05	low
	Other constituents	0	0.1	<0.1	
	Sum=			**0**	

Mineralogical composition				
Oxides of Sb and oxidic compounds of sodium.			
Metallic / intermetallic lead			
Sum=			**0**

Physical characteristics		
physical state (at 20°C, 1013 hPa)	Solid: Coarse grains.
colour	Ochre/orange/brown

Conclusion	**Lead Antimonial dross is a solid with coarse grains at 20°C, 1013 hPa. It is produced via the Harris process, i.e. by chemical reactions during the cooling of molten lead bullion under oxidising conditions in kettles with a mixture of sodium nitrate and sodium hydroxide. The resultant precipitate is skimmed from the surface layer. 'Lead Antimonial dross' is composed generally of lead oxides, and oxidic compounds of sodium and antimony.**