Pb bullion - Grade 3

Substance Name:	Substance Information Page:		
Lead, bullion	https://echa.europa.eu/registration-dossier/-/registered-dossier/16014	**Legend**	Decisive substance sameness criterion
			Indicative substance sameness criterion
SIEF description:	Lead, bullion is a mixed metallic substance usually formed during the primary production of lead, but may also be from the smelting of secondary lead containing materials. This substance can contain high concentrations of lead and will also contain other metals in varying concentrations depending on the source of the material.		No substance sameness criterion

Substance Identity				
	EC/list name:	Lead, bullion	SMILES:	not applicable
	IUPAC name:		InChI:	not applicable
	Other names	Unrefined lead; crude lead; soft lead; rough lead bullion	Type of substance:	UVCB
	EC/List no.:	308-011-5	origin:	Inorganic
	CAS no.:	97808-88-3		
	Molecular formula:	not applicable	Substance listed	

SID parameters	**Sameness criteria**	**Indication of variability** (fixed, low or high variation)
Sources (input materials)	Lead-bearing materials from primary and/or secondary sources including scrap, intermediates. Reductants (usually coke) may be used.	medium
Process	Lead bullion is an intermediate usually produced under reducing conditions in metallurgical furnaces or sometimes in direct smelting processes. The substance is manufactured by smelting and tapping, as described in Section 5.1 of the NFM BREF. After the manufacture of lead bullion, metallurgical refining is necessary to produce lead metal (EC 231-100-4): molten lead bullion is either cast into solid, massive form (e.g. ingots) for supply to a refinery, or kept molten in holding kettles for on-site refining. Refining methods are described in Section 5.1.4 of the NFM BREF.	low

Elemental composition

Core	**min (% w/w)**	**max (% w/w)**	**Typical (%w/w)**	
Lead	Min. 30		98.9	high
Antimony	0	13	13	medium
Copper	0	40	20	medium
Tin	0	56	41.9	medium
Arsenic	0	0.09	0.09	low
Bismuth	0	17	5	low
Zinc	0	30	15	low
Iron	0	30	15	low
Silver	0	10	5	low
Gold	0	10	5	low
Aluminium	0	10	5	low
Silicon	0	3	1.5	low
Cadmium	0	0.09	0.09	low
Nickel	0	10	3.5	low
Indium	0	10	5	low
Selenium	0	0.1	0.05	low
Tellurium	0	0.4	0.23	low
Other constituents				
Sum=			**98.9**	

Mineralogical composition

Metallic lead	30	99	95
Intermetallic lead phase with other metals			
Sum=			**95**

Physical characteristics		
	physical state (at 20°C, 1013 hPa)	Solid in massive form
	colour	metallic grey

Conclusion	**"Lead, bullion" is a solid in massive form (at 20°C, 1013 hPa), produced by smelting primary and/or secondary lead-containing feeds and requiring subsequent refining. "Lead, bullion" is composed primarily of metallic lead and may contain other intermetallic phases (such as copper, tin, antimony, arsenic, bismuth).**