

Iron-Ore Nano-Pellet, pressed pellet diameter 20 mm (Standard for solid-state microanalysis)

Art. ID MY-IF-G-NP-LA-ICP-MS-LIBS-20MM
Unit each (pressed pellet)
Deliverydetails No Dangerous Good /not restricted

Description

Pellet for LA-ICP-MS and LIBS application /// The principle behind LA-ICP-MS (Laser Ablation - Inductively Coupled Plasma - Mass Spectrometry) involves a laser beam removing (ablating) material from a sample and analysing its chemical composition in a mass spectrometer /// LIBS (Laser-Induced Breakdown Spectroscopy) uses a laser beam to interact with the sample. Due to the extreme heat of the laser (10,000 K and more) a plasma is formed. A plasma is a cloud of ions (charged atoms) and electrons (negatively charged particles). When this plasma collapses it emits light. Light is a mixture of different wavelengths. This light is then transferred through a fiberoptic cable to a spectrometer, which can precisely split the light into its respective wavelengths. The working principle of the LIBS-spectrometer is similar to a prism as it disperses the incoming light. Each element has several characteristic wavelengths. A detector is able to attribute an intensity to each of them.

Text/Information	Analyte/Parameter	CAS number	Concentration/Value	Unit	Method	Source
	Na ₂ O		0,032 ± 0,01	g/100g		
	MgO	[1309-48-4]	1,89 ± 0,04	g/100g		
	Al ₂ O ₃		0,15 ± 0,02	g/100g		
	SiO ₂		41,2 ± 0,15	g/100g		
	P ₂ O ₅		0,063 ± 0,014	g/100g		
	K ₂ O		0,012 ± 0,008	g/100g		
	CaO		1,55 ± 0,03	g/100g		
	TiO ₂		0,014 ± 0,008	g/100g		
	MnO		0,042 ± 0,003	g/100g		
	Fe ₂ O ₃ (T)		55,85 ± 0,22	g/100g		
	Beryllium (Be)	[7440-41-7]	4,7 ± 0,5	µg/g		
	Fluorine (F)	[7782-41-4]	50 ± 10	µg/g		
	Scandium (Sc)	[7440-20-2]	0,3 ± 0,1	µg/g		
	Vanadium (V)	[7440-62-2]	2 ± 1	µg/g		
	Chromium (Cr)	[7440-47-3]	4 ± 1	µg/g		
	Cobalt (Co)	[7440-48-4]	29 ± 5	µg/g		
	Nickel (Ni)	[7440-02-0]	22,5 ± 3	µg/g		
	Copper (Cu)	[7440-50-8]	10 ± 2	µg/g		
	Zinc (Zn)	[7440-66-6]	20 ± 4	µg/g		
	Germanium (Ge)	[7440-56-4]	24 ± 2	µg/g		
	Arsenic (As)	[7440-38-2]	1,5 ± 0,5	µg/g		
	Strontium (Sr)	[7440-24-6]	3 ± 1	µg/g		
	Yttrium (Y)	[7440-65-5]	9 ± 0,5	µg/g		

Zirconium (Zr)	[7440-67-7]	1 ± 0,2	µg/g
Niobium (Nb)	[7440-03-1]	0,1 ± 0,05	µg/g
Molybdenum (Mo)	[7439-98-7]	0,7 ± 0,2	µg/g
Tin (Sn)	[7440-31-5]	0,3 ± 0,1	µg/g
Antimony (Sb)	[7440-36-0]	0,63 ± 0,2	µg/g
Barium (Ba)	[7440-39-3]	1,5 ± 0,5	µg/g
Lanthanum (La)	[7439-91-0]	2,8 ± 0,4	µg/g
Cerium (Ce)	[7440-45-1]	4 ± 0,4	µg/g
Praseodymium (Pr)	[7440-10-0]	0,4 ± 0,05	µg/g
Neodymium (Nd)	[7440-00-8]	1,8 ± 0,2	µg/g
Samarium (Sm)	[7440-19-9]	0,4 ± 0,1	µg/g
Europium (Eu)	[7440-53-1]	0,39 ± 0,04	µg/g
Gadolinium (Gd)	[7440-54-2]	0,74 ± 0,2	µg/g
Terbium (Tb)	[7440-27-9]	0,11 ± 0,02	µg/g
Dysprosium (Dy)	[7429-91-6]	0,8 ± 0,1	µg/g
Holmium (Ho)	[7440-60-0]	0,2 ± 0,05	µg/g
Erbium (Er)	[7440-52-0]	0,63 ± 0,1	µg/g
Thulium (Tm)	[7440-30-4]	0,09 ± 0,02	µg/g
Ytterbium (Yb)	[7440-64-4]	0,6 ± 0,1	µg/g
Lutetium (Lu)	[7439-94-3]	0,09 ± 0,01	µg/g
Tantalum (Ta)	[7440-25-7]	0,2 ± 0,03	µg/g
Tungsten (W)	[7440-33-7]	220 ± 15	µg/g
Lead (Pb)	[7439-92-1]	4 ± 2	µg/g