

Commodity: Ultrafine Copper powder, with a purity of 99,99994%. The particles are spherical, and their size is in the range of 1050nm to 1280nm. The commodity is packed under Argon and will have the same quality for 10 years. Not radioactive and not toxic.

Certificate: Institute for rare earth elements and metals certificate #ISE2208133 dated 16th of May 2022.

Origin: EU

Quantity: 10KG (10.000 Grams) to 200 KG

Discharge: CIF Europe

Payment: Instrument: Escrow to be released upon acceptance shipment and Quality control by buyer.

Validity: 15-06-2022

Procedures

- 1) Documentation sharing, information on buyer
- 2) Negotiations & delivery terms agreed upon
- 3) SPA mutually signed
- 4) Payment in escrow
- 5) Shipment to destination
- 6) Upon arrival there can be full and comprehensive testing, inspection, and certification for the whole lot.
- 7) Upon approval of lot by buyer
 - a) money will be released from Escrow
 - b) shipment will be released to buyer.

GD/MS

Analytical Report

Customer:

Analytic ID:

Date:

Sample ID:

Element	Mass fraction ppm
Li	<0,01
Be*	0,003
B	0,03
C***	(2000)
N	n.d.
O	n.d.
F	0,18
Na	2,60
Mg*	10,3
Al*	22,2
Si*	54,1
P*	0,4
S***	520
Cl	19,2
K	2,2
Ca**	715
Sc	0,001
Ti*	9,3
V	0,023
Cr*	0,28
Mn*	0,95
Fe*	15,4
Co*	0,015
Ni*	4,3
Cu	Matrix
Zn*	2,7
Ga	0,006
Ge	0,44
As*	1,03
Se*	1,52
Br	0,045
Rb	0,017
Sr	11,1
Y	0,004
Zr*	0,044
Nb	0,004
Mo	0,04
Ru	0,001

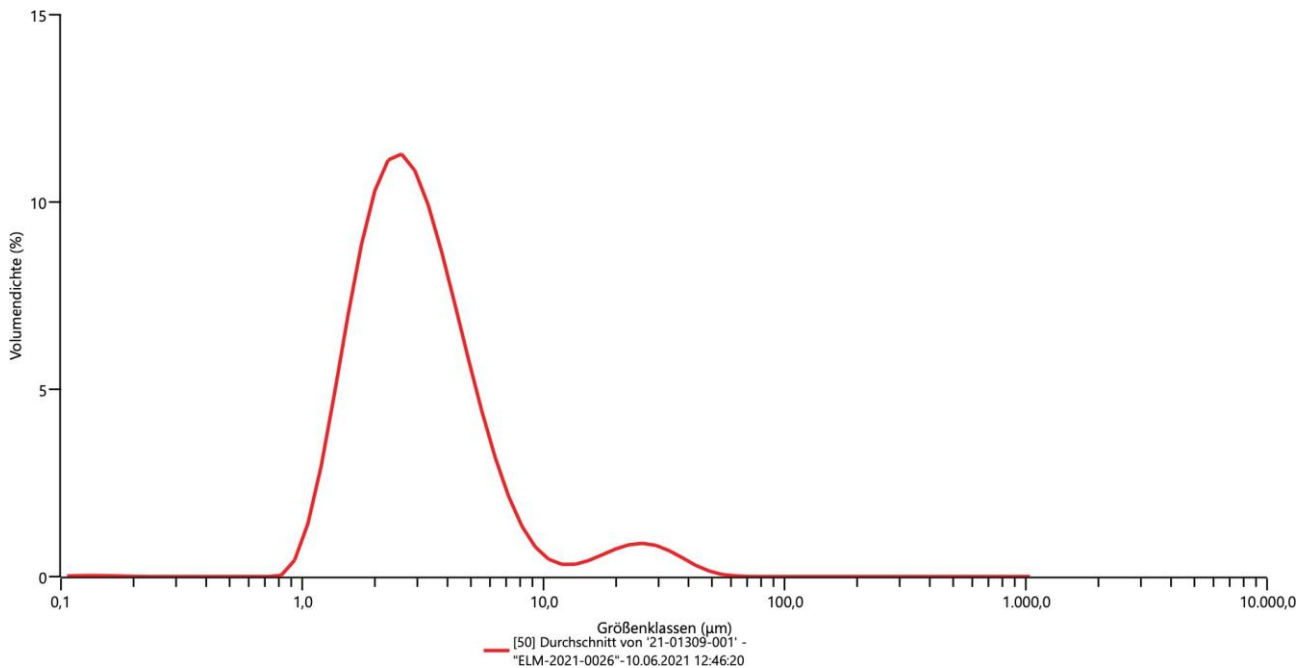
Element	Mass fraction ppm
Pd	0,013
Ag*	11,6
Cd*	0,37
In	0,041
Sn*	12,2
Sb*	3,2
Te*	0,122
I	0,005
Cs	0,001
Ba	0,89
La	0,007
Ce	0,016
Pr	0,001
Nd	0,003
Sm	0,001
Eu	<0,01
Gd	<0,01
Tb	<0,01
Dy	<0,01
Ho	<0,01
Er	<0,01
Tm	<0,01
Yb	<0,01
Lu	<0,01
Hf	0,001
Ta	0,001
W	0,11
Re	<0,01
Os	<0,01
Ir	<0,01
Pt	0,002
Au	0,042
Hg	<0,01
Tl	0,003
Pb*	18,8
Bi*	0,27
Th	<0,001
U	<0,001

n.d. = not determined, * Measurement against certified reference samples, ** Measured by ICP-OES, *** Measured by a combustion IR method. Corresponding to the below named TU-norm the sum of impurities of Al, Cd, Fe, Mg, Ni, Sb, Ti, Mo, Zn is 58,513ppm 0,00005851%.

Cu remaining = 99.99994149% according to TU 1793-011-50316079-2004

Particle analysis by laser diffraction

The particle size distribution of the sample was determined in double determination by laser diffraction. The dispersing medium was ethanol. The results (mean average values) are shown in the following table 1 and in diagram 1.



Ergebnis									
Größe (µm)	% Volumen Über	Größe (µm)	% Volumen Über	Größe (µm)	% Volumen Über	Größe (µm)	% Volumen Über	Größe (µm)	% Volumen Über
0,0995	100,00	0,767	99,90	5,92	12,11	45,6	0,18	352	0,00
0,113	99,99	0,872	99,90	6,72	9,48	51,8	0,06	400	0,00
0,128	99,96	0,991	99,58	7,64	7,71	58,9	0,01	454	0,00
0,146	99,94	1,13	98,44	8,68	6,60	66,9	0,00	516	0,00
0,166	99,92	1,28	96,00	9,86	5,96	76,0	0,00	586	0,00
0,188	99,91	1,45	91,91	11,2	5,58	86,4	0,00	666	0,00
0,214	99,90	1,65	86,08	12,7	5,32	98,1	0,00	756	0,00
0,243	99,90	1,88	78,65	14,5	5,06	111	0,00	859	0,00
0,276	99,90	2,13	70,02	16,4	4,70	127	0,00	976	0,00
0,314	99,90	2,42	60,70	18,7	4,21	144	0,00	1110	0,00
0,357	99,90	2,75	51,26	21,2	3,60	163	0,00		
0,405	99,90	3,12	42,19	24,1	2,88	186	0,00		
0,461	99,90	3,55	33,90	27,4	2,14	211	0,00		
0,523	99,90	4,03	26,67	31,1	1,43	240	0,00		
0,594	99,90	4,58	20,62	35,3	0,85	272	0,00		
0,675	99,90	5,21	15,79	40,1	0,43	310	0,00		

Digital Microscopy

The powder sample was examined by digital microscope (see Figures 1 and 2).



Figure 1: Light microscope image of "copper powder", x200



Figure 2: Light microscope image of the "copper powders", x200
These particles are difficult to identify due to super fineness, probably spherical.