



SCO COPPER ISOTOPES

We hereby address you; we cordially greet you and at the same time, we formally introduce ourselves as the _____ with EIN N° _____, with address at _____ represented by its representative _____. The reason for our letter is to inform you that we have a product in stock that is made with raw material of **COPPER ISOTOPE CU63, CU65**, which is currently being used in the health sector, communications, etc.; (Cancer, arthritis, used for plates of different radiographic examinations, etc.). We, _____ with full legal responsibility under penalty of perjury, hereby issue this Soft Corporate Offer (SCO) of **COPPER ISOTOPES** products, simultaneously with the terms and procedures indicated below.

PRODUCT:	Copper Isotope
PURITY:	99.9999%
Price:	\$ let us your target price, Per Gram
Commissions:	\$ 50. 00 Per Gram
BOTTLES:	OF 2 KILOS EACH

ADDITIONAL DETAILS:

ORIGIN :	EUROPE
GRADE & SPECIFICATION :	ULTRAFINE COPPER POWDER 99.9999%
PAYMENT TERM	USDT / or FIAT MT 103 WIRE TRANSFER
CONTRACT TERM:	SPOT + CONTRACT X 12

SPECIFICATIONS

- Isotopic composition is that of natural copper: 69.1% of Cu-63 and 30.9% of Cu-65
- Cu purity of 99.9999%.
- Radioactive 6WDEOH
- Testing done with specialized equipment like ICP-OES/MS (Optical Emission Spectroscopy or Mass spectroscopy)
- Past testing reports available.
- 6DPSO HImpurities Table:3OHDVHVHHWHVWUHVXOWVDWWDFKH

CHEMICAL COMPONENTS (PPM)			
Cu	≥ 99.999 %	Ni	< 1
Fe	< 9	Al	< 0.4
Na	< 6	Ca	< 5

SOME APPLICATION PACKAGING

Copper powder is one of the most used metals in powder metallurgy. Some short applications include:

- Manufacture of multilayer ceramic capacitors (MLCC) in the technology industry.
- It is widely used in the aerospace and defense industry to make conductive equipment and coatings.
- For high efficiency catalysts, high temperature alloys and very high-quality lubricants.
- It is also used for many other applications such as medical purposes, diamond tools, etc.

PACKAGING AND AVAILABILITY

quantity: 36
kg PET
bottles
BOTTLE net weight 2 KG



Here's a report detailing the uses and applications of copper isotopes, categorized by industry:

Uses of Copper Isotopes by Industry

1. Medical and Healthcare

- **Radiopharmaceuticals and Nuclear Medicine:**
Copper isotopes, especially **Cu-64**, **Cu-60**, **Cu-61**, **Cu-62**, and **Cu-67**, find use in diagnostic imaging (PET scans) and targeted radiotherapy.
 - **Cu-64** offers a unique combination: positron emission for PET imaging and beta emissions for therapeutic use—earning it the designation of a “theranostic” isotope. Its half-life (~12.7 hours) allows regional production and distribution, suitable for complex agents like monoclonal antibodies or nanoparticles.
[PubMedPMCIAEA](#)
 - Example: **Copper-64 oxodotreotide (Detectnet)** is FDA-approved for PET imaging of neuroendocrine tumors (NETs), offering practical advantages over similar agents like Ga-68.[Wikipedia+1](#)
 - **Biological and Disease Diagnostics:**
Traceable shifts in copper isotope ratios (e.g., relative depletion or enrichment of ^{65}Cu) in blood and tissues can serve as **biomarkers** for diseases like hepatocellular carcinoma, offering non-invasive diagnostic insights.[Wikipedia](#)
-

2. Scientific Research & Analytical Industries

- **Trace Analysis and Material Studies:**
 - **Cu-63** is employed for producing other radionuclides (e.g., Cu-64, Zn-62) and for precise measurements using gamma resonance and EPR in material studies. [buyisotope.com](https://www.buyisotope.com)
 - **Cu-65** plays roles in neutron flux studies, superconductivity research, and as a standard reference in mass spectrometry. [buyisotope.com](https://www.buyisotope.com)
- **Analytical Techniques:**
 - **Neutron Activation Analysis (NAA):** Uses copper isotopes to induce radioactivity in samples, enabling precise identification and quantification of elements via characteristic gamma emission. [Science Insider](#)
 - **Isotope Dilution Mass Spectrometry (IDMS):** Introduces enriched copper isotopes into a sample to measure isotopic ratios, unlocking extremely accurate concentration assessments in fields like geochemistry, environmental testing, and materials science. [Science Insider](#)

3. Technology & Nanoscience

- **Copper Nanoclusters (CuNCs):**
Copper-based nanoclusters—tiny assemblies of copper atoms—exhibit strong fluorescence, low toxicity, and cost-effectiveness. These properties make them valuable for bioimaging, chemical sensing, and catalysis. [arXiv](#)

4. Other Industries

- **Anti-microbial Applications:**
While not isotope-specific, copper (the stable metal) exerts strong antimicrobial effects—killing bacteria, viruses, and fungi on contact. This quality has encouraged its use in **hospital surfaces**, door handles, and other high-touch areas to reduce infection spread. [WikipediaReddit](#)
(Note: This application pertains to bulk copper rather than isotopic variations.)

Summary Table

Industry	Copper Isotopes / Use Case
Medical & Healthcare	PET imaging, radiotherapy (Cu-64, Cu-67), disease biomarkers
Research & Analysis	NAA, IDMS, material studies (Cu-63, Cu-65)
Technology / Nano	Fluorescent copper nanoclusters for imaging and catalysis
Public Health	Antimicrobial copper surfaces (non-isotopic application)

Final Thoughts

Copper isotopes are emerging as versatile tools across sectors:

- In **medicine**, they bridge diagnostic imaging (PET) and therapy, advancing personalized treatment.
- In **science and materials**, they enable ultra-precise analysis and foundational research.
- In **nanotech**, copper nanoclusters open novel pathways for sensing and non-invasive imaging.
- Although **bulk copper** is harnessed for its antimicrobial properties, isotopic variations contribute more to advanced scientific and medical uses.



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X-RAY REPORT

Name: [REDACTED] Date: 11-08-2022
Address: A [REDACTED]
Phone No: [REDACTED]

ASA REF:	Material:	CU:
	Powder	99.99

We have analyzed the above-mentioned sample and report as below
Remark: The result related only to the sample tested

FOR & ON BEHALF OF
ALEX STEWART (ASSAYERS) FZCO



This test is accredited by IAS (Accreditation Certificate No. TL-733)

The results contained herein apply to the above sample only. ASA Gold Lab is not responsible for the interpretations in respect to this report. This report shall not be reproduced except in full, without written approval of ASA Gold Laboratory. ASA Gold Lab is not responsible for the sampling method used for samples drawn & submitted by the client.

ИСПЫТАТЕЛЬНЫЙ АНАЛИТИКО-СЕРТИФИКАЦИОННЫЙ ЦЕНТР ГИРЕДМЕТА

GIREDMET TESTING ANALYTICAL CENTER (TAC)

Россия 119017 Москва, Б. Талмачевский пер. 3, стр. 1 - B. Talmachevsky per 3, build.1, Moscow 119017 Russia
Tel./Fax: 7 493 933 87 81

(Система по сертификации качества и материалов по химическому составу
Регистрация РОСТЕХРЕГУЛИРОВАНИЯ № РОСС RU.0001.040005)

C E R T I F I C A T E

of Chemical Contents #3147-14 for

ULTRAFINE COPPER POWDER PMU type
Lot #01/2014/Cu. Net Weight 5400 kg, 135 Boxes.
121 Boxes per 40 kg in each, 20 PET Containers per 2 kg
14 Boxes per 40 kg in each, 40 PET Containers per 1 kg

Sum of impurities in Copper Powder (Al, Ti, Cr, Mn, Ni, Zn, Mo, Cd, Sb) is no more than 0.001%wt. The purity grade of Copper Powder is 99.999 % wt. It was calculated as difference between 100 % and Sum of Impurities. List of impurities corresponds on Customer order.

Copper Powder is radiological safe. The specific natural radioactivity of Copper Powder is no more than $1 \cdot 10^{-11}$ Ci/g.

Report of Sampling procedure #4-14 from January 14, 2014.

135 Boxes with Copper Powder were supplied Russian and English Labels and plumbed by leads "GAC/68".

The Report of impurities determination #18353.14 (please turn over).

Director of ANSERTEKO Ltd.

Chief T&A Center



Dr. V. Alekseeva

Professor Yu. Karpov

Order #4-14

Date January 20, 2014.



STATE RESEARCH CENTER OF THE RUSSIAN FEDERATION
JOINT-STOCK COMPANY
STATE SCIENTIFIC-RESEARCH AND DESIGN INSTITUTE
OF RARE-METAL INDUSTRY

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www.giredmet.ru

ИСПЫТАТЕЛЬНЫЙ АНАЛИТИКО-СЕРТИФИКАЦИОННЫЙ ЦЕНТР
GIREDMET TESTING ANALYTICAL CENTER

REPORT № 18353.14

on Impurities Determination

Certificate supplement 3147-14

ULTRAFINE COPPER POWDER PMU type Lot #01/2014/Cu

The impurities evaluation was made by Spark Source Mass Spectrometry. The JMS-01-BM2 double focusing mass spectrometer manufactured by JEOL (Japan) was applied. The high resolution mass spectra were photographed on lifted-Q plates. The relative standard deviation is 0.15-0.30.

The results are presented as Parts Per Million (1 ppm = 0.0001 %)

Element	ppm	Element	ppm	Element	ppm
H	ND	Zn	1	Pr	< 0.1
Li	< 0.01	Ga	< 0.05	Nd	< 0.1
Be	< 0.01	Ge	< 0.05	Sm	< 0.1
B	0.02	As	2	Eu	< 0.1
C	ND	Se	< 0.05	Gd	< 0.1
N	ND	Br	0.5	Tb	< 0.1
O	ND	Rb	< 0.05	Dy	< 0.1
F	1	Sr	< 0.05	Ho	< 0.1
Na	10	Y	< 0.05	Er	< 0.1
Mg	7	Zr	< 0.05	Tm	< 0.1
Al	1	Nb	< 0.05	Yb	< 0.1
Si	3	Mo	< 0.05	Lu	< 0.1
P	0.1	Ru	< 0.05	Hf	< 0.1
S	30	Rh	< 0.05	Ta	< 0.2
Cl	100	Pd	< 0.05	W	< 0.2
K	4	Ag	10	Re	< 0.2
Ca	10	Cd	< 0.05	Os	< 0.2
Sc	10	In	< 0.05	Ir	< 0.2
Ti	0.4	Sn	< 0.05	Pt	< 0.2
V	< 0.01	Sb	5	Au	< 0.2
Cr	0.7	Te	< 0.05	Hg	< 0.2
Mn	0.6	I	< 0.05	Tl	< 0.2
Fe	8	Cs	< 0.05	Pb	1
Co	< 0.01	Ba	< 0.05	Bi	< 0.2
Ni	0.5	La	< 0.1	Th	< 0.2
Cu	ОЧОБА	Ce	< 0.1	U	< 0.2

Chief of T&A Center
Professor Yu. Karpov

German G. Glavin
Ph.D. Head of MS Lab

January 20, 2014



CHEMICAL REPORT

January 30, 2018

At the request of

Dear

Mr. ERICK ALEJANDRO RETES LESCANO

Based on the certificate of analysis N° 0000185-1 by the IGAS Research Independent Global Addaying Service Being analyzed by the ICP-OES method (optical emission spectroscopy). The natural isotopic composition of cooper 63-65 is:

ISOTOPE	Cu 63	Cu 65
ABUNDANCE MEASURE IN %	69.1 +/- 0.05	30.9 +/- 0.05

Based on the reports obtained in different laboratories certified as IGAS Research Independent Global Addaying Service and K.W. QUIMICA GERMANA S.A.C. being analyzed by the ICP-OES method (optical emission spectroscopy) taking into account the determination of impurities. Ultra-fine Copper has a chemical purity of 99.999%.

In my opinion a Chemical Engineer specialized in stable and unstable isotopes, this product has a valuation in the national and international market of 1500 to 2900 US dollars per gram.

Please use this document for the corresponding purposes.


KATHERINE LISSETTE BENITES ARELLANO
QUIMICA
CQP. 1159

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K.W. QUIMICA GERMANA S.A.C.

Calle Las Fábricas Mz B, Lote 20A, Urb. La Villa - Chorrillos

INFORME DE ENSAYO

KW 0805 A / 2015

Fecha : 06 / 04 / 2015

Cliente : [REDACTED]

Referencia : COT. KW 0212 / 2015

Material : COBRE ULTRAFINO

Orden de Trabajo : KW - 0437 / 2015

Cantidad de Muestra(s) : 01

Cerrados ☒

Abiertos ☐

N° LAB	CLIENTE	Al ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca ppm	Cd ppm
KW 1466	N° 0003776179	0.4	< 1	0.2	< 0.01	< 0.1	5	< 1
		Ce ppm	Co ppm	Cr ppm	Fe ppm	Ga ppm	Ge ppm	Hg ppm
		< 0.5	< 1	0.3	9	< 1	< 2	0.5
		In ppm	K ppm	Mg ppm	Mn ppm	Mo ppm	Na ppm	Ni ppm
		< 2	< 2	1	0.2	< 1	6	< 1
		P ppm	Pb ppm	S ppm	Sb ppm	Se ppm	Se ppm	Si ppm
		< 2	1	34	0.5	< 0.1	0.4	0.4
		Sn ppm	Sr ppm	Te ppm	Ti ppm	Tl ppm	V ppm	Zn ppm
		< 1	< 0.5	< 2	< 1	< 2	< 0.2	0.6
		Ag ppm	Cu %					
		< 1	99.99 - 100.01					

- > (") Complexometría
- > > significa "Mayor que";
- > < significa "Menor que";
- > Impurezas = ICP - OES, ESPECTRO BLUE



K.W. QUIMICA GERMANA S.A.C.



* Este informe no podrá ser reproducido sin autorización de K.W. QUIMICA GERMANA S.A.C.
 * Los resultados solo corresponden a la muestra indicada.
 * Los remanentes de las muestras se guardarán por un periodo de 3 meses.

CHEMICAL REPORT

January 30, 2018

At the request of

Based on the certificate of analysis N° 000018!;-1 by the IGAS Research Independent Global Analyzing Service Being analyzed by the ICP-05 method (optical emission spectroscopy), The natural isotopic composition of copper 63-65 is:

ISOTOPE	Cu63	Cu65
ABUNDANCE MEASURE IN%	69.1 ± 0.05	30.9 ± 0.05

Based on the reports obtained in different laboratories certified IGAS Research Independent Global Analyzing Service and K.W. QUIMICA GERMANA S.A.C. being analyzed by the ICP-Oes method (optical emission spectroscopy) taking into account the determination of impurities. Ultra-fine Copper has a chemical purity of 99.999%.

In my Chemical Engineering opinion specializing in stable and unstable Isotopes, this product has a valuation in the national and international market of 1500 to 2900 US dollars per gram. Please use this document for the corresponding purpose

Rapport

Sida 1 (2)

L1922068

1R2O42POZLS



Ankomstdatum **2019-07-22**
Utfärdad **2019-07-25**

Projekt **PO-MT-AL02-01**

Analys: IR

Er beteckning	BA14-01 Copper sample				
Provtagare	J Cornelissen				
Labnummer	U11628922				
Parameter	Resultat	Enhet	Metod	Utf	Sign
Report in Excel	yes		1	1	IR

REPORT OF ISOTOPE ANALYSIS

Issued by:
Client:
Date of receipt:
Date of analysis:
Order number (our):
Your reference:
Our reference:

Sample ID	Lab ID	$^{63}\text{Cu}/^{65}\text{Cu}$	$2 \cdot SD$	^{63}Cu At. %	^{65}Cu At. %
BA14-01 Copper sample	U11628922	2.24347	0.00137	69.1688	30.8312

Comments

Sample was prepared by HNO₃ digestion

The analysis is carried out by MC-ICP-MS (NEPTUNE PLUS, ThermoScientific) against IRMM 633

SD calculated from two independent consecutive measurements

Signature _____

Ilia Rodushkin
Associate Professor
LABORATORY MANAGER
ALS Scandinavia AB