GIREDMET Testing Analytical Center
B. Tolmachevsky per 5, Moscow 119017 Russia. Tel. (7-495) 239-93-38, Fax 953-87-91 119017 Россия Москва, Б. Толмачевский пер. 5
ИСПЫТАТЕЛЬНЫЙ АНАЛИТИКО-СЕРТИФИКАЦИОННЫЙ ЦЕНТР ГИРЕДМЕТА

SAMPLING PROCEDURE REPORT

Date: October 21, 2009
Material: Copper Powder Superfine Dispersal Lot #10TN-10/RX/Cu
Certificate Number: 2439-09 from October 22, 2009. **Report Number** 16047.09.
Degree of Purity was determinated according TU 1793-011-50316079-2004 for next impurities Mg, Al, Ti, Fe, Ni, Zn, Mo, Cd, Sb.
Net Weight: 10000 kg, 190 Boxes per 52.5 kg (21 PET containers per 2.5 kg), one Box #191 – 25 kg (10 PET containers per 2.5 kg).
Customer: "Redix 328" Ltd

5 control Samples for certification were taken from the 5 Boxes ##1, 31, 50, 100, 170 of Copper Powder.

Certificate #2439-09 from October 22, 2009 was issued for Copper Powder Superfine Disperse Lot #10TN-10/RX/Cu.

The Boxes were supplied by Labels in English and Russian
Boxes with material were plumbed by leads TAC GIREDMET "GAC/68".

Sampling procedure was made under supervision

GIREDMET
Testing Analytical Center
MS & EA Lab
B.Tolmachevsky 5 Moscow 119017 Russia

Head of Lab Institute Giredmet
Dr. G.Glavin

Representative of "Anserteko"
Mrs.E.Kareva

Director of "Redix 328" Ltd.
Mr. S. Khalimov

ОРГАН ПО СЕРТИФИКАЦИИ ООО «АНСЕРТЭКО»

ANSERTEKO LTD

Россия 119049 Москва, Ленинский пр-кт., 4 – Leninsky pr., 4 Moscow 119049, Russia
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(Система по сертификации веществ и материалов по химическому составу
Регистрация РОСТЕХРЕГУЛИРОВАНИЯ №РОСС RU.0001.040005)

ИСПЫТАТЕЛЬНЫЙ АНАЛИТИКО-СЕРТИФИКАЦИОННЫЙ ЦЕНТР ГИРЕДМЕТА

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C E R T I F I C A T E

of Chemical Contents # 2439 for

COPPER POWDER SUPERFINE DISPERSAL
Lot #10TN-10/RX/Cu, Net Weight 10000 kg
190 Boxes (##1-190) per 52.5 kg, (21 PET Containers per 2.5 kg)
One Box #191 - 25 kg, (10 PET Containers per 2.5 kg)

Sum of impurities in Copper Powder (Mg, Al, Ti, Fe, 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 to TU 1793-011-50316079-2004.

Copper Powder is radiological safe. The specific natural radioactivity of Copper Powder is no more than 1.10^{-11} Ci/g.

Sampling was made by TAC Giredmet. Sampling procedure Report from October 21, 2009. Boxes were plumbed by leads "GAC/68".

The Report of impurities determination #16047.09 (please turn over).

Director of ANSERTEKO Ltd.

Dr. T. Alekseeva

Chief of GIREDMET T&A Center

Professor Yu.Karpov

Order #497-09
Date October 22, 2009.

GIREDMET Testing Analytical Center

Laboratory of Mass Spectrometry and Ecological Analysis

HLiBeBCNOFNaMgAlSiPSClKCaScTiVCrMnFeCoNiCuZnGeGaAsSeBrRbSrYZrNbMoRuRhPdAgCdInSnSbTeICsBaLaCePrNdSmEuGdTbDyHoErTmYbLuHfTaWReOsIrPtAuHgTlPbBiThU

ROSTECHREGULIROVANIE Accreditation #ROCC RU.0001.510001

Certificate supplement 2439-09

R E P O R T

on Impurities Determination #16047.09

COPPER POWDER SUPERFINE DISPERSAL

Lot #10TN-10/RX/Cu

Sampling was made by ANSERTEKO Ltd.

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 Ilford-Q plates. Joyce Loeble (United kingdom) MDM6 microdensitometer and NOVA 4 (USA) on-line minicomputer were used for the mass spectrum lines identification. Quantity estimation was calculated by original MS Lab software. The relative standard deviation is 0.15-0.30. The noble gases and transuranium elements are not tabulated in the table, because their concentrations are lover than 0.01 ppm detection limits.

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

Element	ppm	Element	ppm	Element	ppm
H	ND	Zn	< 0.2	Pr	< 0.05
Li	< 0.01	Ga	< 0.1	Nd	< 0.1
Be	< 0.001	Ge	< 0.2	Sm	< 0.09
B	< 0.01	As	4	Eu	< 0.08
C	ND	Se	< 0.3	Gd	< 0.08
N	ND	Br	< 0.1	Tb	< 0.06
O	ND	Rb	< 0.1	Dy	< 0.08
F	< 0.01	Sr	< 0.1	Ho	< 0.04
Na	7	Y	< 0.05	Er	< 0.07
Mg	1	Zr	< 0.1	Tm	< 0.05
Al	0.5	Nb	< 0.3	Yb	< 0.08
Si	2	Mo	< 0.1	Lu	< 0.06
P	0.06	Ru	< 0.2	Hf	< 0.07
S	60	Rh	< 0.1	Ta	< 0.05
Cl	20	Pd	< 0.3	W	< 0.1
K	0.8	Ag	8	Re	< 0.2
Ca	2	Cd	< 0.1	Os	< 0.5
Sc	< 0.1	In	< 0.02	Ir	< 0.07
Ti	0.3	Sn	< 0.2	Pt	< 0.1
V	0.08	Sb	2	Au	< 0.2
Cr	< 0.1	Te	< 0.4	Hg	< 0.4
Mn	0.09	I	< 0.1	Tl	< 0.1
Fe	5	Cs	< 0.1	Pb	7
Co	< 0.05	Ba	< 0.2	Bi	< 0.2
Ni	< 0.05	La	< 0.1	Th	< 0.1
Cu	MATRIX	Ce	< 0.2	U	< 0.1

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Date: October 22, 2009

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

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C E R T I F I C A T E #2439-09

Report of Isotopic Determination #16047.09

COPPER POWDER SUPERFINE DISPERSAL
Lot #10TN-10/RX/Cu, Net Weight 10000 kg
190 Boxes (##1-190) per 52.5 kg, (21 PET Containers per 2.5 kg)
One Box #191 - 25 kg, (10 PET Containers per 2.5 kg)

The determination of atomic fractions 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 Ilford-Q plates. Joyce Loeble (United Kingdom) MDM6 microdensitometer and NOVA 4 (USA) on-line minicomputer were used for the mass spectrum lines identification. Quantity estimation was calculated by original MS Lab software. The relative standard deviation is 0.01-0.05 for isotope abundance measuring.

The results are presented in atomic percent.

Isotope	Measured Abundance % at
Cu63	69.09±0.05
Cu65	30.91±0.03

Isotopic Abundance corresponds to natural

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Date: October 22, 2009

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