



Guangzhou Four Rings PhotoVoltaic Material Manufacturing Co., Ltd.

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FOURRINGS
HIGH PURITY METALS

GREETINGS & INTRODUCTION

INTRODUCTION


Guangzhou Four Rings PhotoVoltaic Material Manufacturing Co., Ltd. is a high-tech enterprise professionally producing high purity metals, such as Indium, Copper, Selenium, Gallium and Tin.

The company is now also producing about 20 types of special high purity alloys and alloy powders such as In/Cu Alloy powder for the solar cell industry. We are able to produce to the exact specifications as required by customers.

Moreover, the company has the equipment to recover/reclaim and refine indium from all types of Indium containing residues.


The company's business is to supply high-purity, high-quality advanced materials to the solar energy industry. We welcome feedback and collaboration on the difficult technical challenges to develop new and advanced materials to meet the needs of our customers.

PRODUCTS INTRODUCTION 01

Copper and Indium alloy	
	<p>Cu % + In % = 100%</p> <p>Al ...<math>< 0.002\%</math></p> <p>Mn ...<math>< 0.002\%</math></p> <p>Ag ...<math>< 0.002\%</math></p> <p>Ni ...<math>< 0.002\%</math></p> <p>Pb ...<math>< 0.002\%</math></p> <p>Sb ...<math>< 0.002\%</math></p> <p>Fe ...<math>< 0.002\%</math></p>
	2000g/bottle
Material Form	Powder

#01

COPPER AND INDIUM ALLOY

Indium		
Symbol of element	In	
Melting point	156.61° C	
Boiling point	2080° C	
Specific gravity	7.31	
Product purity	3N 4N 5N	
	Please inquire for any higher purity	
Material Form	Ingot, Pellet, Rondelle, Wire	

#02

INDIUM

PRODUCTS

INTRODUCTION 02

PRODUCTS

INTRODUCTION 03

Indium



We can take in Indium residues to certain specifications and recover/refine to pure Indium on a toll basis.

#03

INDIUM

Selenium

Symbol of element	Se	
Melting point	217° C	
Boiling point	684.9° C	
Specific gravity	4.79	
Product purity	3N 4N 5N Please inquire for any higher purity	
Material Form	Ingot, Powder, Pellet	

#04

SELENIUM

Gallium

Symbol of element	Ga	
Melting point	29.87° C	
Boiling point	2204° C	
Specific gravity	5.907	
Product purity	3N 4N 5N Please inquire for any higher purity	
Material Form	Solid(or liquid)	

#05

GALLIUM

Tin

Symbol of element	Sn	
Melting point	231.97° C	
Boiling point	2602° C	
Specific gravity	7.3	
Product purity	3N 4N 5N Please inquire for any higher purity	
Material Form	Bar, Wire, Plate, Powder, Pellet	

#06

TIN

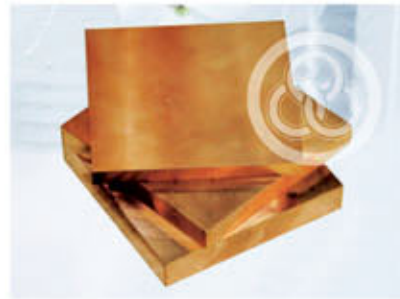
PRODUCTS

INTRODUCTION 04

WORKSHOP

& PRODUCTION

Copper	
Symbol of element	Cu
Melting point	1083° C
Boiling point	2567° C
Specific gravity	8.96
Product purity	4N 5N 6N
	Please inquire for any higher purity
Material Form	Powder, Granules, Sheet, Wire, Bar and Pellet



#07

COPPER

A View of the Workshop



B Production facility



		(ppm Wt)																Symbol of element — B		Impurity content — <0.001		F						
																		Al		Si		P		S		Cl		
2	Li <0.001	Be <0.001																										
3	Na <0.005	Mg <0.002																										
4	K <0.01	Ca <0.005	Sc <0.001	Ti <0.002	V <0.001	Cr <0.001	Mn <0.001	Fe <0.003	Co <0.001	Ni <0.001	Cu Matrix	Zn <0.005	Ga <0.01	Ge <0.005	As <0.005	Se <0.01	Br <0.05											
5	Rb <0.001	Sr <0.001	Y <0.01	Zr <0.001	Nb <0.005	Mo <0.005			Ru <0.005	Rh <0.005	Pd <0.005	Ag <0.035	Cd <0.01	In <0.005	Sn <0.02	Sb <0.005	Te <0.05	I <0.005										
6	Cs <0.005	Ba <0.001	Lu <0.001	Hf <0.001	Ta <0.02	W <0.001	Re <0.001	Os <0.001	Ir <0.001	Pt <0.01	Au <0.017	Hg <0.01	Tl <0.001	Pb <0.001	Bi <0.001													
		La <0.001	Ce <0.001	Pr <0.001	Nd <0.001			Sm <0.001	Eu <0.001	Gd <0.001	Tb <0.001	Dy <0.001	Ho <0.001	Er <0.001	Tm <0.001	Yb <0.001												
		Th <0.001			U <0.001																							

6N COPPER QUALITY INDICATRIX

05

06