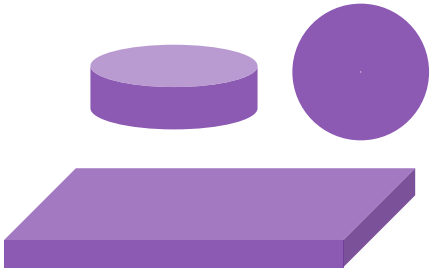
SPUTTERING TARGET

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Manufacturing Process

Funcmater can produce and supply most of the metals on the periodic table of elements, including rare earth metals. We generally use the production process of vacuum melting and hot pressing. By controlling the technical parameters of the forging, rolling and annealing processes, the sputtering targets made are characterized by high density, low gas content and uniform internal structure, and the user can obtain a constant erosion rate and a high purity uniform film during use.

The process flow:

1. Powder Smelting
2. Powder Mixing
3. Pressing and Forming
4. Atmosphere Sintering
5. Plastic deformation
6. Heat Treatment
7. Ultrasonic flaw detection
8. Mechanical
9. Metallization
10. Bonding



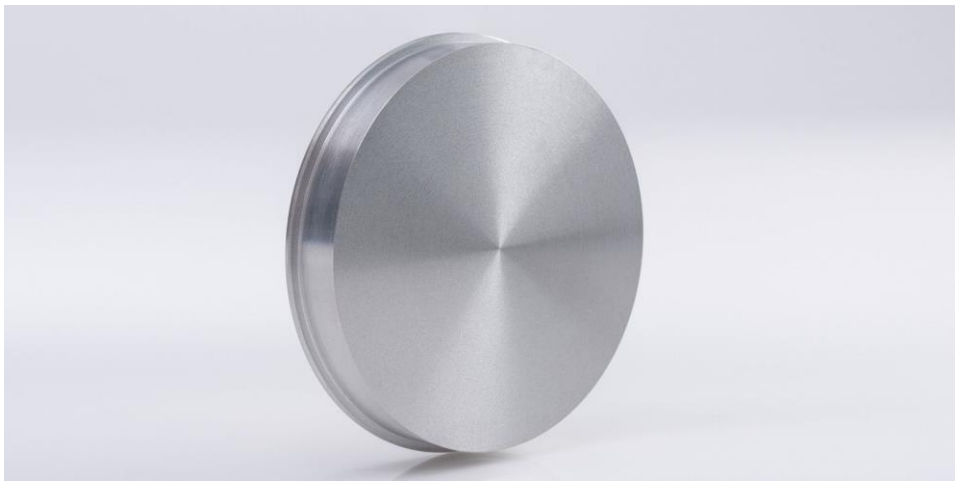
Most sputtering targets can be fabricated to any shape and size from drawings. For those with technical limitations on the maximum size of a single piece, the segments can be joined together by butt or angled joints to produce a multi-segment target.

Sputtering Targets We can Offer

- Pure metal targets
- Metal alloy targets
- Ceramic targets
- Precious metal targets
- Circular, rectangular, Delta, ring, tube and any other shape on request.
- Purity from 99%~99.9999%.
- All targets are delivered with a certificate of analysis







Sputtering Targets List

Al

Aluminum-Base

CHEMICAL NAME	FORMULA	PURITY %
Aluminum	Al	99.9-99.999
Aluminum Oxide	Al_2O_3	99.99-99.999
Aluminum Oxide-Yttrium Oxide	Al_2O_3-Y_2O_3	99.99
Aluminum Oxide-Magnesium Oxide	Al_2O_3-MgO	99.99
Aluminum Oxide-Zinc Oxide (AZO)	Al_2O_3-ZnO	99.9
Aluminum Oxynitride	$Al_{23}O_{27}N_5$	99.9-99.995
Aluminum Antimonide	AlSb	99.95/99.99
Aluminium Beryllium	AlBe	99.99-99.995
Aluminium Boride	AlB_2	99.9
Aluminum Chromium	AlCr	99.95
Aluminum Chromium Boron	AlCrB	99.5
Aluminum Cobalt	AlCo	99.5
Aluminum Copper	AlCu	99.99
Aluminum Copper Iron	AlCuFe	99.5
Aluminum Copper Silicon	AlCuSi	99.999
Aluminum Iron	AlFe	99.5
Aluminum Indium	AlIn	99.99
Aluminum Lithium	AlLi	99.9
Aluminum Magnesium	AlMg	99.95
Aluminum Magnesium Silicon	AlMgSi	99.99
Aluminum Neodymium	AlNd	99.95
Aluminum Nickel	Al_3Ni	99.9
Aluminum Nitride	AlN	99.9
Aluminum Scandium	AlSc	99.9-99.99
Aluminum Silicon	AlSi	99.95-99.999
Aluminum Tin Copper	AlSnCu	99.9
Aluminum Tantalum Zirconium	AlTaZr	99.9
Aluminum Titanium	AlTi	99.9-99.995
Aluminium Yttrium	AlY	99.95/99.99
Aluminium Zinc	AlZn	99.5
Aluminium Zirconium	AlZr	99.95/99.99

Sb

Antimony-Base

CHEMICAL NAME	FORMULA	PURITY %
Antimony	Sb	99.5-99.999
Antimony Oxide	Sb_2O_3	99.99
Antimony Sulfide	Sb_2S_3	99.99
Antimony Telluride	Sb_2Te_3	99.999

Ba

Barium-Base

CHEMICAL NAME	FORMULA	PURITY %
Barium	Ba	99.9
Barium Oxide	BaO	99.95
Barium Ferrite	$BaFe_{12}O_{19}$	99.9
Barium Fluoride	BaF_2	99.9-99.995
Barium Strontium Titanate (BST)	$BaSrTiO_3$	99.95
Barium Tin Oxide	$BaSnO_3$	99.9
Barium Titanate	$BaTiO_3$	99.9-99.95
Barium Zirconate	$BaZrO_3$	99.99
Barium Zirconium Titanate	$BaZrTiO_3$	99.9

*All purities indicated in the tables are based on metallic impurities.

Bi

Barium-Base

CHEMICAL NAME	FORMULA	PURITY %
Bismuth	Bi	99.9-99.999
Bismuth Antimonide	BiSb	99.99
Bismuth Antimony Telluride	BiSbTe	99.999
Bismuth Ferrite	$BiFeO_3$	99.99
Bismuth Oxide	Bi_2O_3	99.9-99.999
Bismuth Selenide	Bi_2Se_3	99.999
Bismuth Telluride	Bi_2Te_3	99.999
Bismuth Telluride Selenide	$BiTe_{1-x}Se_x$	99.999
Bismuth Vanadate	$BiVO_4$	99.9

Bi

Bismuth-Base

CHEMICAL NAME	FORMULA	PURITY %
Boron	B	99.9-99.999
Boron Carbide	B_4C	99.5/99.9
Boron Nitride	BN	99.9
Boron Oxide	B_2O_3	99.9-99.99

Cd

Cadmium-Base

CHEMICAL NAME	FORMULA	PURITY %
Cadmium	Cd	99.9-99.999
Cadmium Oxide	CdO	99.99
Cadmium Selenide	CdSe	99.99/99.995
Cadmium Stannate	Cd_2SnO_4	99.99
Cadmium Sulfide	CdS	99.99-99.999
Cadmium Telluride	CdTe	99.999

Ca

Calcium-Base

CHEMICAL NAME	FORMULA	PURITY %
Calcium Fluoride	CaF_2	99.9-99.995
Calcium Oxide	CaO	99.99
Calcium Titanate	$CaTiO_3$	99.99

Ce

Cerium-Base

CHEMICAL NAME	FORMULA	PURITY %
Cerium	Ce	99.9/99.95
Cerium Fluoride	CeF_3	99.9
Cerium Gadolinium	CeGd	99.95
Cerium Oxide	CeO_2	99.9
Cerium Samarium	CeSm	99.95

Cs

Cesium-Base

CHEMICAL NAME	FORMULA	PURITY %
Cesium Iodide	CsI	99.99

*All purities indicated in the tables are based on metallic impurities.

Cr Chromium-Base

CHEMICAL NAME	FORMULA	PURITY %
Chromium	Cr	99.5-99.99
Chromium Aluminide	CrAl	99.99
Chromium Boride	CrB_2	99.5
Chromium Carbide	Cr_3C_2	99.5/99.95
Chromium Nitride	Cr_2N	99.5
Chromium Oxide	Cr_2O_3	99.5-99.95
Chromium Nickel	CrNi	99.9
Chromium Nickel Aluminum	CrNiAl	99.9
Chromium Molybdenum	CrMo	99.5
Chromium Molybdenum Iron	CrMoFe	99.5
Chromium Niobium	CrNb	99.9
Chromium Silicide	$CrSi_2$	99.95
Chromium Silicion Aluminum	CrSiAl	99.5
Chromium Titanium Aluminum	CrTiAl	99.9
Chromium Vanadium	CrV	99.9
Chromium Yttrium	CrY	99.5
Chromium Zriconium	CrZr	99.9

Cu Copper-Base

CHEMICAL NAME	FORMULA	PURITY %
Copper	Cu	99.99-99.999
Copper Aluminum	CuAl	99.9
Copper Aluminum Oxide	$CuAlO_2$	99.9
Copper Chromium Zirconium	CuCrZr	99.9
Copper Germanide	CuGe	99.99
Copper Indium	CuIn	99.99
Copper Indium Gallium Selenide	CuInGaSe	99.99
Copper Nickel	CuNi	99.99
Copper Oxide	CuO	99.5/99.9
Copper Oxide	Cu_2O	99.9
Copper Selenide	CuSe	99.99
Copper Selenide	Cu_2Se	99.5
Copper Sulfide	Cu_2S	99.95
Copper Sulfide	CuS	99.999
Copper Telluride	Cu_2Te	99.99
Copper Titanium	CuTi	99.9
Copper Titanium Oxide	$CuTiO_3$	99.99
Copper Zinc	CuZn	99.9
Copper Zirconium	CuZr	99.9

Co Cobalt-Base

CHEMICAL NAME	FORMULA	PURITY %
Cobalt	Co	99.5-99.99
Cobalt Boride	Co_2B	99.9
Cobalt Chromium	CoCr	99.95
Cobalt Chromium Oxide	$CoCr_2O_4$	99.9
Cobalt Gadolinium	CoGd	99.95
Cobalt Iron Boron	CoFeB	99.9
Cobalt Oxide	Co_3O_4	99.95
Cobalt Oxide	CoO	99.95
Cobalt Silicon	$CoSi_2$	99.5

Cu Copper-Base

CHEMICAL NAME	FORMULA	PURITY %
Dysprosium	Dy	99.95

Er Erbium-Base

CHEMICAL NAME	FORMULA	PURITY %
Erbium	Er	99.95
Erbium Fluoride	ErF_3	99.99
Erbium Oxide	Er_2O_3	99.95/99.99

Gd Gadolinium-Base

CHEMICAL NAME	FORMULA	PURITY %
Gadolinium	Gd	99.9/99.95
Gadolinium Oxide	Gd_2O_3	99.9

Ga Gallium-Base

CHEMICAL NAME	FORMULA	PURITY %
Gallium Antimonide	GaSb	99.999
Gallium Arsenide	GaAs	99.999
Gallium Nitride	GaN	99.999
Gallium Oxide	Ga_2O_3	99.995/99.999
Gallium Phosphide	GaP	99.999

Ge Germanium-Base

CHEMICAL NAME	FORMULA	PURITY %
Germanium	Ge	99.999
Germanium Antimonide	GeSb	99.999
Germanium Antimony Telluride(GST)	$Ge_2Sb_3Te_5$	99.999
Germanium Sulfide	GeS_2	99.995
Germanium Oxide	GeO_2	99.99
Germanium Selenide	GeSe	99.999
Germanium Telluride	GeTe	99.999

Au Gold-Base

CHEMICAL NAME	FORMULA	PURITY %
Gold	Au	99.95/99.999
Gold Germanium	AuGe	99.999

C Graphite-Base

CHEMICAL NAME	FORMULA	PURITY %
Graphite	C	99.5-99.999
Carbon Nickel	C-Ni	99.95

Hf Hafnium-Base

CHEMICAL NAME	FORMULA	PURITY %
Hafnium	Hf	99.9-99.99
Hafnium Boride	HfB_2	99.5
Hafnium Carbide	HfC	99.5/99.95
Hafnium Indium Zinc Oxide	HfO_2-In_2O_3-ZnO	99.99
Hafnium Nitride	HfN	99.5
Hafnium Oxide	HfO_2	99.95
Hafnium Silicide	$HfSi_2$	99.5

In Indium-Base

CHEMICAL NAME	FORMULA	PURITY %
Indium	In	99.99/99.999
Indium Antimonide	InSb	99.99/99.999
Indium Arsenide	InAs	99.999
Indium Gallium Zinc Oxide(IGZO)	InGaZnO	99.99
Indium Gallium Tin Oxide(IGTO)	In_2O_3/Ga_2O_3/SnO_2	99.99
Indium Oxide	In_2O_3	99.99/99.999
Indium Oxide Gallium Oxide(IGO)	In_2O_3-Ga_2O_3	99.99
Indium Oxide Zinc Oxide(IZO)	In_2O_3-ZnO	99.99
Indium Selenide	In_2Se_3	99.9/99.99
Indium Sulfide	In_2S_3	99.99/99.999
Indium Telluride	InTe	99.999
Indium Tin	InSn	99.995
Indium Tin Oxide(ITO)	In_2O_3-SnO_2	99.99/99.999
Indium Tin Zinc Oxide(ITZO)	In_2O_3-SnO_2-ZnO	99.99/99.999
Indium Zinc	InZn	99.99
Indium Zirconium Oxide	In_2O_3-ZrO_2	99.99

Ir

Iridium-Base

CHEMICAL NAME	FORMULA	PURITY %
Iridium	Ir	99.5-99.95
Iridium Manganese	IrMn	99.9

Fe

Iron-Base

CHEMICAL NAME	FORMULA	PURITY %
Iron	Fe	99.5-99.99
Iron Boride	FeB	99.5
Iron Chromium Aluminum	FeCrAl	99.9
Iron Chromium Molybdenum Niobium Boron	FeCrMoNiB	99.9
Iron Gallium	FeGa	99.9
Iron Magnesium	FeMg	99.95
Iron Nickel	FeNi	99.95
Iron Oxide	Fe_2O_3	99.9
Iron Oxide	Fe_3O_4	99/99.95
Iron Sulfide	FeS	99.9
Iron Silicide	$FeSi_2$	99.9/99.99
Iron Silicon Boron	FeSiB	99.95
Iron Zirconium	FeZr	99.9

La

Lanthanum-Base

CHEMICAL NAME	FORMULA	PURITY %
Lanthanum	La	99.5-99.95
Lanthanum Aluminum Oxide	$LaAlO_3$	99.9
Lanthanum Barium Tin Oxide	$La\text{-}BaSnO_3$	99.9
Lanthanum Boride	LaB_6	99.5
Lanthanum Nickel Oxide	$LaNiO_3$	99.9
Lanthanum Nickel Aluminum Oxide	$LaNi_xAl_{1-x}O_3$	99.9
Lanthanum Oxide	La_2O_3	99.95
Lanthanum Zirconium Oxide	$La_2Zr_2O_7$	99.9
Lanthanum Yttrium	LaY	99.95

Pb

Lead-Base

CHEMICAL NAME	FORMULA	PURITY %
Lead	Pb	99.99
Lead Chloride	$PbCl_2$	99.999
Lead Iodide	PbI_2	99.99
Lead Oxide	PbO	99.9
Lead Selenide	PbSe	99.999
Lead Telluride	PbTe	99.99
Lead Titanate	$PbTiO_3$	99.9
Lead Zirconate Titanate(PZT)	$Pb(ZrTi)O_3$	99.95

Li

Lithium-Base

CHEMICAL NAME	FORMULA	PURITY %
Lithium Cobalt Oxide	$LiCoO_2$	99.9
Lithium Cobalt Phosphate	$LiCoPO_4$	99.9
Lithium Fluoride	LiF	99.9/99.99
Lithium Iron Phosphate	$LiFePO_4$	99.9
Lithium Manganate	$LiMn_2O_4$	99.5
Lithium Nickel Phosphate	$LiNiPO_4$	99.9
Lithium Niobate	$LiNbO_3$	99.9
Lithium Phosphate	Li_3PO_4	99.99
Lithium Silicate	Li_2SiO_3	99.9
Lithium Zirconate	Li_2ZrO_3	99.9

*All purities indicated in the tables are based on metallic impurities.

Mg Magnesium-Base

CHEMICAL NAME	FORMULA	PURITY %
Magnesium	Mg	99.9-99.999
Magnesium Aluminum Oxide	$MgAl_2O_4$	99.99
Magnesium Fluoride	MgF_2	99.5/99.99
Magnesium Gallium Oxide	$MgGa_2O_4$	99.9
Magnesium Germanide	Mg_2Ge	99.99
Magnesium Lithium	MgLi	99.5
Magnesium Nickel Oxide	MgNiO	99.9
Magnesium Oxide	MgO	99.95
Magnesium Silicide	Mg_2Si	99.9
Magnesium Tin	Mg_2Sn	99.9
Magnesium Titanate	$MgTiO_3$	99.99
Magnesium Yttrium	MgY	99.5

Mn Manganese-Base

CHEMICAL NAME	FORMULA	PURITY %
Manganese	Mn	99.95/99.99
Manganese Cobalt	MnCo	99.8
Manganese Gallium Nitride	Mn_3GaN	99.5
Manganese Oxide	MnO	99.9/99.95
Manganese Oxide	MnO_2	99.95
Manganese Tin	MnSn	99.9

Nd Neodymium-Base

CHEMICAL NAME	FORMULA	PURITY %
Neodymium	Nd	99.95
Neodymium Magnet(NIB)	$Nd_2Fe_{14}B$	99.95
Neodymium Oxide	Nd_2O_3	99.95

Mo Molybdenum-Base

CHEMICAL NAME	FORMULA	PURITY %
Molybdenum	Mo	99.95
Molybdenum Carbide	Mo_2C	99.5/99.95
Molybdenum-Lanthanum Oxide	Mo/La_2O_3	99.9
Molybdenum Niobium	MoNb	99.95
Molybdenum Nickel	MoNi	99.9
Molybdenum Oxide	MoO_3	99.95/99.99
Molybdenum Selenide	$MoSe_2$	99.99
Molybdenum Silicide	$MoSi_2$	99.5-99.995
Molybdenum Sulfide	MoS_2	99.9
Molybdenum Sulfide-Antimony Oxide	MoS_2-Sb_2O_3	99.9
Molybdenum Sulfide-Tantalum	MoS_2-Ta	99.9
Molybdenum Tantalum	MoTa	99.9
Molybdenum Telluride	$MoTe_2$	99.99
Molybdenum Tungsten	MoW	99.9

Ni Nickel-Base

CHEMICAL NAME	FORMULA	PURITY %
Nickel	Ni	99.5-99.995
Nickel Aluminum	NiAl	99.95/99.99
Nickel Chromium	NiCr	99.95
Nickel Chromium Aluminum	NiCrAl	99.9
Nickel Chromium Silicon	NiCrSi	99.9
Nickel Cobalt Oxide	$NiCoO_4$	99.9
Nickel Copper	NiCu	99.9
Nickel Copper Iron	NiCuFe	99.95
Nickel Copper Titanium	NiCuTi	99.9
Nickel Iron	NiFe	99.95
Nickel Molybdenum	NiMo	99.9
Nickel Niobium	NiNb	99.95
Nickel Oxide	NiO	99-99.995
Nickel Silicide	$NiSi_2$	99.5
Nickel Titanium	NiTi	99.9
Nickel Vanadium	NiV	99.95

Nb Niobium-Base

CHEMICAL NAME	FORMULA	PURITY %
Niobium	Nb	99.9/99.95
Niobium Aluminide	Nb_3Al	99.95
Niobium Chromium	NbCr	99.5
Niobium Carbide	NbC	99.5
Niobium Molybdenum	NbMo	99.9
Niobium Molybdenum Tantalum	NbMoTa	99.9
Niobium Nitride	NbN	99.5
Niobium Oxide	Nb_2O_5	99.5-99.995
Niobium Oxide-Chromium Oxide	Nb_2O_5/Cr_2O_3	99.95
Niobium Oxide-Nickel Chromium	Nb_2O_5-NiCr	99.9
Niobium Silicide	$NbSi_2$	99.5
Niobium Titanium	NbTi	99.9
Niobium Titanium Zirconium Chromium	NbTiZrCr	99.9
Niobium Titanium Zirconium Molybdenum	NbTiCrMo	99.9
Niobium Zirconium	NbZr	99.5

Pd Palladium-Base

CHEMICAL NAME	FORMULA	PURITY %
Palladium	Pd	99.95/99.99
Palladium-Silver	Pd-Ag	99.95
Palladium-Nickel	Pd-Ni	99.95

Pt Platinum-Base

CHEMICAL NAME	FORMULA	PURITY %
Platinum	Pt	99.95/99.99
Platinum Palladium	Pt-Pd	99.99

Re Rhenium-Base

CHEMICAL NAME	FORMULA	PURITY %
Rhenium	Re	99.95/99.99

Rh Rhodium-Base

CHEMICAL NAME	FORMULA	PURITY %
Rhodium	Rh	99.5/99.95

Ru Ruthenium-Base

CHEMICAL NAME	FORMULA	PURITY %
Ruthenium	Ru	99.95

Sm Samarium-Base

CHEMICAL NAME	FORMULA	PURITY %
Samarium	Sm	99.9
Samarium Boride	SmB_6	99.5
Samarium Cobalt	$SmCo_5$	99.9
Samarium Oxide	Sm_2O_3	99.95

Se Selenium-Base

CHEMICAL NAME	FORMULA	PURITY %
Selenium	Se	99.9-99.9999

Si Silicon-Base

CHEMICAL NAME	FORMULA	PURITY %
Silicon	Si	99.999
Silicon Aluminum	SiAl	99.99-99.999
Silicon Carbide	SiC	99.5-99.95
Silicon Chromium	SiCr	99.9
Silicon Dioxide	SiO_2	99.9-99.999
Silicon Germanium	SiGe	99.999
Silicon Monoxide	SiO	99.9/99.99
Silicon Nitride	Si_3N_4	99.5-99.95

Ta Tantalum-Base

CHEMICAL NAME	FORMULA	PURITY %
Tantalum	Ta	99.95
Tantalum Carbide	TaC	99.5
Tantalum Nitride	TaN	99.5
Tantalum Oxide	Ta_2O_5	99.9-99.995
Tantalum Selenide	$TaSe_2$	99.8
Tantalum Silicide	$TaSi_2$	99.5/99.99
Tantalum Sulfide	TaS_2	99.999
Tantalum Telluride	$TaTe_2$	99.9

Ag Silver-Base

CHEMICAL NAME	FORMULA	PURITY %
Silver	Ag	99.9-99.999
Silver Chromium	AgCr	99.99
Silver Copper	AgCu	99.99
Silver Germanium	AgGe	99.995

Te Tellurium-Base

CHEMICAL NAME	FORMULA	PURITY %
Tellurium	Te	99.5-99.999
Tellurium Oxide	TeO_2	99.99

Sr Strontium-Base

CHEMICAL NAME	FORMULA	PURITY %
Strontium	Sr	99.9
Strontium Aluminate	$Sr_3Al_2O_6$	99.5
Strontium Fluoride	SrF_2	99.9
Strontium Niobate	$SrNbO_3$	99.9
Strontium Titanate	$SrTiO_3$	99.9
Strontium Zirconate	$SrZrO_3$	99

Sn Tin-Base

CHEMICAL NAME	FORMULA	PURITY %
Tin	Sn	99.9-99.999
Tin Antimonide	SnSb	99.99
Tin Monoxide	SnO	99.99
Tin Oxide	SnO_2	99.9/99.99
Tin Selenide	SnSe	99.99
Tin Silver	SnAg	99.9
Tin Sulfide	SnS_2	99.999
Tin Zinc	SnZn	99.95

Ti Titanium-Base

CHEMICAL NAME	FORMULA	PURITY %
Titanium	Ti	99.5-99.995
Titanium Aluminum	TiAl	99.9-99.99
Titanium Aluminum Silicon	TiAlSi	99.9
Titanium Aluminide	Ti_3Al	99.9
Titanium Boride	TiB_2	99.5
Titanium Carbide	TiC	99.5
Titanium Niobium	TiNb	99.9
Titanium Nitride	TiN	99.95
Titanium Oxide	TiO_2	99.9-99.998
Titanium Oxide	Ti_2O_3	99.9/99.95
Titanium Silicide	$TiSi_2$	99.5/99.95
Titanium Silicide Carbide	Ti_3SiC_2	99.95
Titanium Tantalum	TiTa	99.9
Titanium Zirconium	TiZr	99.9

V Vanadium-Base

CHEMICAL NAME	FORMULA	PURITY %
Vanadium	V	99.9
Vanadium Boride	VB_2	99.5
Vanadium Carbide	VC	99.5
Vanadium Dioxide	VO_2	99.9
Vanadium Nitride	VN	99.5/99.9
Vanadium Oxide	V_2O_5	99.5/99.9
Vanadium Silicide	VSi_2	99.5
Vanadium Titanium	VTi	99.9
Vanadium Tungsten	VW	99.9

Yb Ytterbium-Base

CHEMICAL NAME	FORMULA	PURITY %
Ytterbium	Yb	99.95
Ytterbium Fluoride	YbF_3	99.95
Ytterbium Oxide	Yb_2O_3	99.95

W Tungsten-Base

CHEMICAL NAME	FORMULA	PURITY %
Tungsten	W	99.95
Tungsten Boride	W_2B	99.5
Tungsten Carbide	WC	99.5
Tungsten Disulfide	WS_2	99.9
Tungsten Molybdenum	WMo	99.95
Tungsten Oxide	WO_3	99.99
Tungsten Oxide-Rhenium Oxide	WO_3-ReO_2	99.99
Tungsten Selenide	WSe_2	99.8
Tungsten Silicide	WSi_2	99.5
Tungsten Sulfide	WS_2	99.8
Tungsten Telluride	WTe_2	99.5-99.995
Tungsten Tantalum	WTa	99.95
Tungsten Titanium	WTi	99.95
Tungsten Rhenium	WRe	99.95

Y Yttrium-Base

CHEMICAL NAME	FORMULA	PURITY %
Yttrium	Y	99.9-99.99
Yttrium Barium Cuprate(YBCO)	$YBa_2Cu_3O_7$	99.9
Yttrium Fluoride	YF_3	99.9
Yttrium Iron Garnet(YIG)	YFe_2O_4	99.9
Yttrium Manganate	$YMnO_3$	99.9
Yttrium Oxide	Y_2O_3	99.9-99.99
Yttria-stabilized Zirconia(YSZ)	Y_2O_3-ZrO_2	99.9
Yttrium Silicide	YSi_2	99.9

Zn

Zinc-Base

CHEMICAL NAME	FORMULA	PURITY %
Zinc	Zn	99.5-99.999
Zinc Aluminum	ZnAl	99.99
Zinc Antimony	Zn_4Sb_3	99.99
Zinc Copper	ZnCu	99.99
Zinc Oxide	ZnO	99.95
Zinc Oxide Aluminum Oxide(AZO)	ZnO-Al_2O_3	99.99/99.999
Zinc Oxide Gallium Oxide	ZnO-Ga_2O_3	99.99
Zinc Oxide Magnesium Oxide	ZnO-MgO	99.9
Zinc Oxide Molybdenum Oxide	ZnO-MoO_3	99.9
Zinc Oxide Tin	ZnO-Sn	99.99
Zinc Selenide	ZnSe	99.99/99.995
Zinc Sulfide	ZnS	99.99
Zinc Telluride	ZnTe	99.99
Zinc Tin	ZnSn	99.99
Zinc Tin Oxide(ZTO)	Zn_2SnO_4	99.95

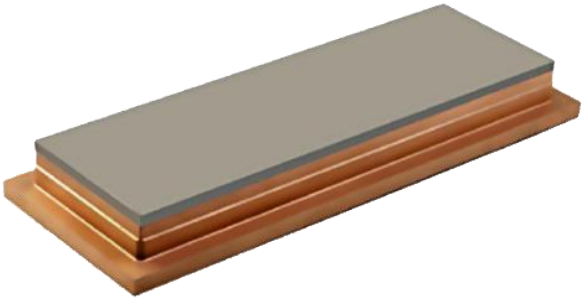
Zr

Zirconium-Base

CHEMICAL NAME	FORMULA	PURITY %
Zirconium	Zr	99.5-99.99
Zirconium Boride	ZrB_2	99.5
Zirconium Carbide	ZrC	99.5
Zirconium Chrominum	ZrCr	99.9
Zirconium Copper Aluminum	ZrCuAl	99.5
Zirconium Molybdenum	ZrMo	99.9
Zirconium Nitride	ZrN	99.5
Zirconium Oxide	ZrO_2	99.9-99.995
Zirconium Silicide	$ZrSi_2$	99.5
Zirconium Vanadium Titanium	ZrVTi	99.5
Zirconium Yttrium	ZrY	99.95

*All purities indicated in the tables are based on metallic impurities.

Backing Plates



The perfect bonding of the target and backing plate is a key part of the sputtering process. The backing plate is mainly used to hold the sputtering target material and needs to have good electrical and thermal conductivity. In the magnetron sputtering coating process, the target must withstand both the cooling water pressure on the back side and the negative vacuum pressure on the front side, so the target backing plate is especially important. Depending on the material, the sputtering target backing plate also varies. The proper selection and bonding of target backing plates can improve the life of the target and the efficiency of the coating, and also improve the film coefficient achievement rate. At present, the common sputtering target backplane materials are mainly oxygen-free copper, molybdenum, stainless steel tube, indium and other backplane materials.

Backing Plate Materials We Can Offer

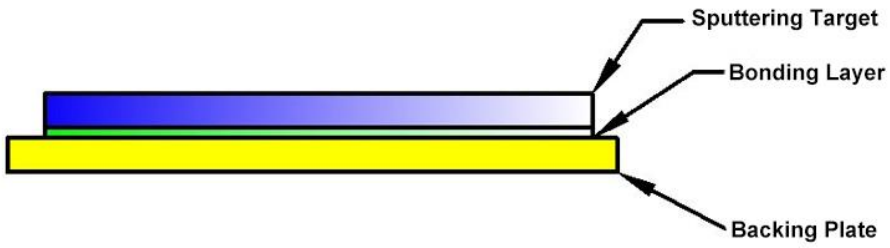
Oxygen-Free Copper (OFC)	**The most common material used for backplanes today is OFC because it has good electrical and thermal conductivity and is easy to work with. If properly maintained, OFC backplanes can be reused more than ten times.**
Molybdenum (Mo)	Used for special conditions, such as high temperature bonding. Copper backsheets are more likely to oxidize or warp at high temperatures, so when copper backsheets do not match the coefficient of thermal expansion of the target, molybdenum backsheets can be matched with some targets that have a low coefficient of thermal expansion.
Stainless steel tube (SST)	Currently, stainless steel tube is most commonly used as the backing tube for rotating targets. Stainless steel tube has good strength and thermal conductivity and is very economical.

Most backing plate are reusable, especially those with indium, which are easy to clean and reuse. If other coating agents (including epoxy) are used, the backing plate surface may need to be mechanically treated before it can be reused.

Funcmater process target backing plate of different specifications according to different machine requirements, materials include copper, titanium, molybdenum, aluminum, etc. We can also provide bonding services for targets and backing plates.

Sputtering Target Bonding Service

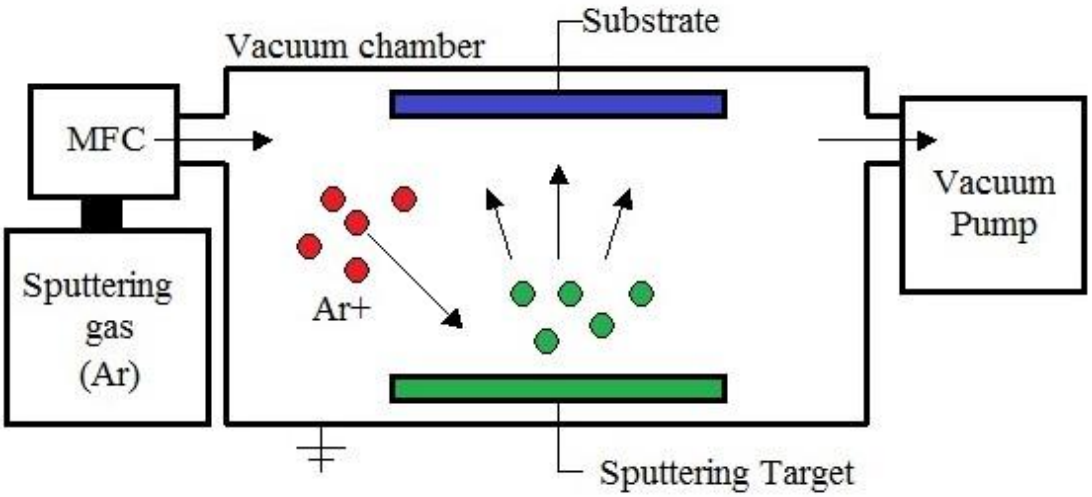
The three commonly used target bonding methods are adhesive, solder and high temperature welding (including brazing and diffusion welding). With these three bonding techniques, we can provide the best target bonding solutions for our customers' applications.



Target Bonding Diagram

Types	Advantage	Disadvantage
Adhesive bonding	Low cost, easy rework	Relatively high thermal resistance
Solder Bonding(Indium)	Low thermal resistance, low cost	
High Temperature Soldering	Very low thermal resistance, allowing the highest possible power density	Higher cost, Can't rework

Vacuum coating



Funcmater offers you sputtering targets of high purity, low impurities, uniform grain size, less grain defects.

Sputtering targets are mainly used in electronic and information industries, such as integrated circuits, information storage, liquid crystal displays, laser memory, electronic control devices, etc.; they can also be used in the field of glass coating; they can also be applied to wear-resistant materials, high-temperature corrosion resistance, high-grade decorative supplies and other industries.