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# Sputtering Targets

No.CRM-P-01

Last modified in 2007/3/20 by china rare metal material Co.,ltd

# Sputtering targets

Inculding :

- Single Metal sputtering targets
- Alloys sputtering targets
- Ceramic sputtering targets

# Single Metal sputtering targets

- Aluminum (Al)
- Antimony (Sb)
- Arsenic  (As)
- Bismuth (Bi)
- Boron (B)
- Cadmium (Cd)
- Carbon (C)
- Cerium (Ce)
- Chromium (Cr)
- Cobalt (Co)
- Copper (Cu)
- Dysprosium (Dy)
- Erbium (Er)
- Europium (Eu)
- Gadolinium (Gd)
- Germanium (Ge)
- Gold (Au)
- Graphite (C)
- Hafnium (Hf)
- Holmium (Ho)
- Indium (In)
- Iridium (Ir)
- Iron (Fe)
- Lanthanum (La)
- Lead (Pb)
- Lutetium (Lu)
- Magnesium (Mg)
- Manganese (Mn)
- Molybdenum (Mo)
- Neodymium (Nd)
- Nickel (Ni)
- Niobium ( Nb)
- Palladium (Pd)
- Platinum (Pt)
- Praseodymium (Pr)
- Rhenium (Re)
- Ruthenium (Ru)
- Samarium (Sm)
- Scandium (Sc)
- Selenium (Se)
- Silicon (Si)
- Silver (Ag)
- Tantalum (Ta)
- Tellurium (Te)
- Terbium (Tb)
- Thulium (Tm)
- Tin (Sn)
- Titanium (Ti)
- Tungsten (W)
- Vanadium (V)
- Ytterbium (Yb)
- Yttrium (Y)
- Zinc (Zn)
- Zirconium (Zr)

BACK

# Alloys sputtering targets (1)

- Aluminum Copper (Al-Cu)
- Aluminum Chromium (Al-Cr)
- Aluminum Magnesium(Al-Mg)
- Aluminum Silicon (Al-Si)
- Aluminum Silicon Copper (AlSiCu)
- Aluminum Silver (Al-Ag)
- Cerium Gadolinium (Ce-Gd)
- Cerium Samarium (Ce-Sm)
- Chromium Silicon (Cr-Si)
- Chromium- Silicon Monoxide (Cr-SiO)
- Cobalt Chromium (Co-Cr)
- Cobalt Iron (Co-Fe)
- Cobalt Nickel (Co-Ni)
- Cobalt Iron Boron (Co-Fe-B)
- Copper Cobalt (Cu-Co)
- Copper Gallium (Cu-Ga)
- Copper Indium (CuIn)
- Copper Nickel (Cu-Ni)

Nickel Aluminum (Ni-Al)
Nickel-Chromium (Ni-Cr)
Nickel-Chromium Silicon (Ni-Cr-Si)
Nickel-Iron (Ni-Fe)
Nickel Niobium Titanium (NiNbTi)
Nickel-Titanium (Ni-Ti)
Nickel-Vanadium (Ni-V)
Samarium Cobalt (Sm-Co)
Silver Copper (Ag-Cu)
Silver Tin (Ag-Sn)
Tantalum Aluminum (Ta-Al)
Terbium Dysprosium Iron (TbDyFe)
Terbium Iron Alloy (TbFe)
Titanium Aluminum (Ti-Al)
Titanium Nickel (Ti-Ni)
Titanium Chromium (Ti-Cr)
Tungsten-Rhenium (W-Re)
Tungsten Titanium (W-Ti)

# Alloys sputtering targets (2)

- Copper Zirconium (Cu-Zr)
- Hafnium Iron (Hf-Fe)
- Iron Boron (Fe-B)
- Iron Carbon (Fe-C)
- Iron Manganese (Fe-Mn)
- Iridium Manganese (Ir-Mn)
- Iridium Rhenium (Ir-Re)
- Indium Tin (In-Sn)
- Molybdenum Silicon (Mo-Si)

Zirconium Aluminum (Zr-Al)
Zirconium Iron (Zr-Fe)
Zirconium Nickel (Zr-Ni)
Zirconium Niobium (Zr-Nb)
Zirconium Titanium (Zr-Ti)
Zirconium Yttrium (Zr-Y)
Zinc Aluminum (Zn-Al)
Zinc Magnesium (Zn-Mg)
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# Ceramic sputtering targets(1)

- **Aluminum Oxide (Al2O3)**
- **Aluminum Nitride (AlN)**
- **Antimony Oxide (Sb2O3)**
- **Antimony:Tin Dioxide (Sb:SnO2)(ATO)**
- **Barium Fluoride (BaF2)**
- **Bismuth Oxide (Bi2O3)**
- **Boron Nitride(BN)**
- **Boron Carbide(B4C)**
- **Calcium Fluoride(CaF2)**
- **Cadmium Sulfide (CdS )**
- **Cerium oxide (CeO2 )**
- **Cerium fluoride (CeF3)**
- **Chromium Oxide (Cr2O3)**
- **Copper Oxide (CuO)**
- **Dysprosium Oxide(Dy2O3)**
- **Erbium Oxide(Er2O3)**
- **Gallium Arsenide (Crystal)(GaAs)**
- **Gallium Phosphide (GaP)**

**Niobium Pentoxide(Nb2O5)**<br>
**Praseodymium Oxide (Pr6O11)**<br>
**Lead Titanate (PbTiO3)**<br>
**PbZrO3-PbTiO3 (PZT)**<br>
**Samarium Oxide(Sm2O3)**<br>
**Silicon Monoxide(SiO)**<br>
**Silicon Oxide(SiO2)**<br>
**Silicom Carbide (SiC)**<br>
**Silicom Nitride (Si3N4 )**<br>
**Strontium Fluoride (SrF3)**<br>
**Strontium Titanate (SrTiO3)**<br>
**Tantalum Pentoxide(Ta2O5)**<br>
**Tantalum Carbide (TaC)**<br>
**Tantalum Nitride (TaN)**<br>
**Titanium Carbonitride (TiCN)**<br>
**Titanium Boride(TiB2)**<br>
**Titanium Carbide(TiC)**<br>
**Titanium silicide(TiSi)**

# Ceramic sputtering targets**(2)**

- **Gadolinium Oxide (Gd2O3)**
- **Hafnium Oxide (HfO2 )**
- **Hafnium Carbide(HfC)**
- **Hafnium Nitride(HfN)**
- **Indium Oxide(In2O3)**
- **Indium Tin Oxide(ITO)**
- **Iron Sulfide(FeS)**
- **Iron Oxide(Fe2O3)**
- **Lanthanum Boride (LaB6)**
- **Lead Zirconate (PbZrO3)**
- **Lanthanum fluoride(LaF3)**
- **Lutetium Oxide (Lu2O3)**
- **Magnesium fluoride (MgF2)**
- **Magnesium Oxide (MgO)**
- **Molybdenum (MoO)**
- **Molybdenum Silicide(MoSi2)**
- **Neodymium Oxide (Nd2O3)**
- **Nickel Oxide(NiO)**

- **Titanium Nitride(TiN)**
- **Titanium Monoxide (TiO )**
- **Titanium Dioxide (TiO2)**
- **Titanium Rioxide (Ti2O3)**
- **Titanium Pentoxide (Ti3O5)**
- **Vanadium Pentoxide (V2O5)**
- **Tungsten Oxide (WO3)**
- **Tungsten Carbide (WC)**
- **Yttrium oxide (Y2O3)**
- **Ytterbium Fluoride (YbF3)**
- **Zinc oxide (ZnO)**
- **Zinc Aluminum Oxide (ZnO:Al)(AZO)**
- **Zinc Selenium (ZnSe)**
- **Zinc Sulfide (ZnS)**
- **Zinc:aluminium oxide (ZnO:Al)**
- **Zirconium Carbide(ZrC)**
- **Zirconium oxide (ZrO2)**

# For example(1)---- Metal sputtering targets

**Cr target**

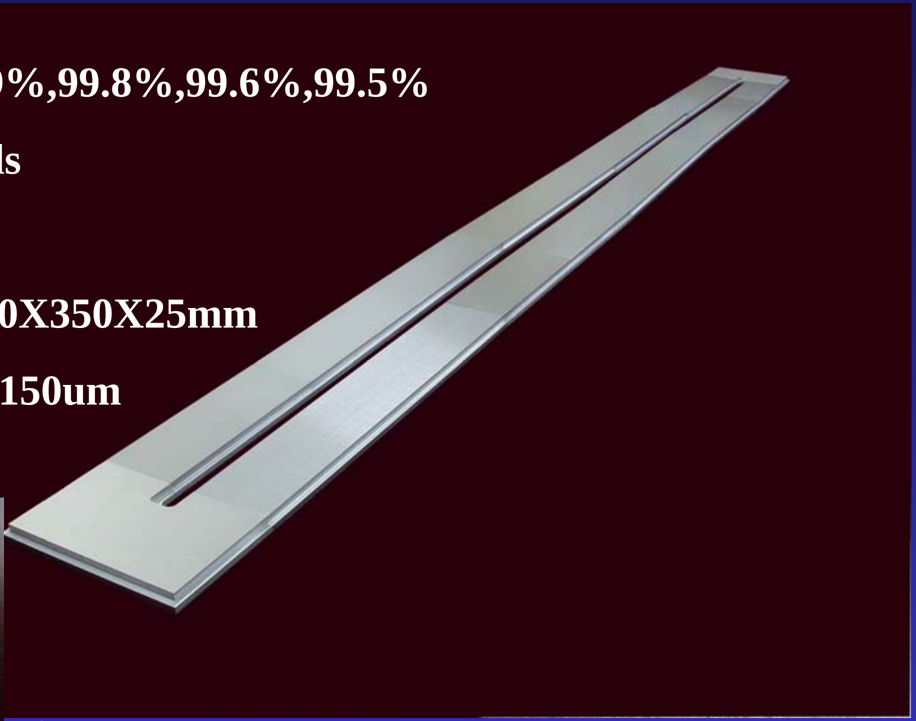
**99.95%,99.9%,99.8%,99.6%,99.5%**

**HIP methods**

**RD>99.8%**

**Max size:780X350X25mm**

**Grain Size<150um**



**Hf target**

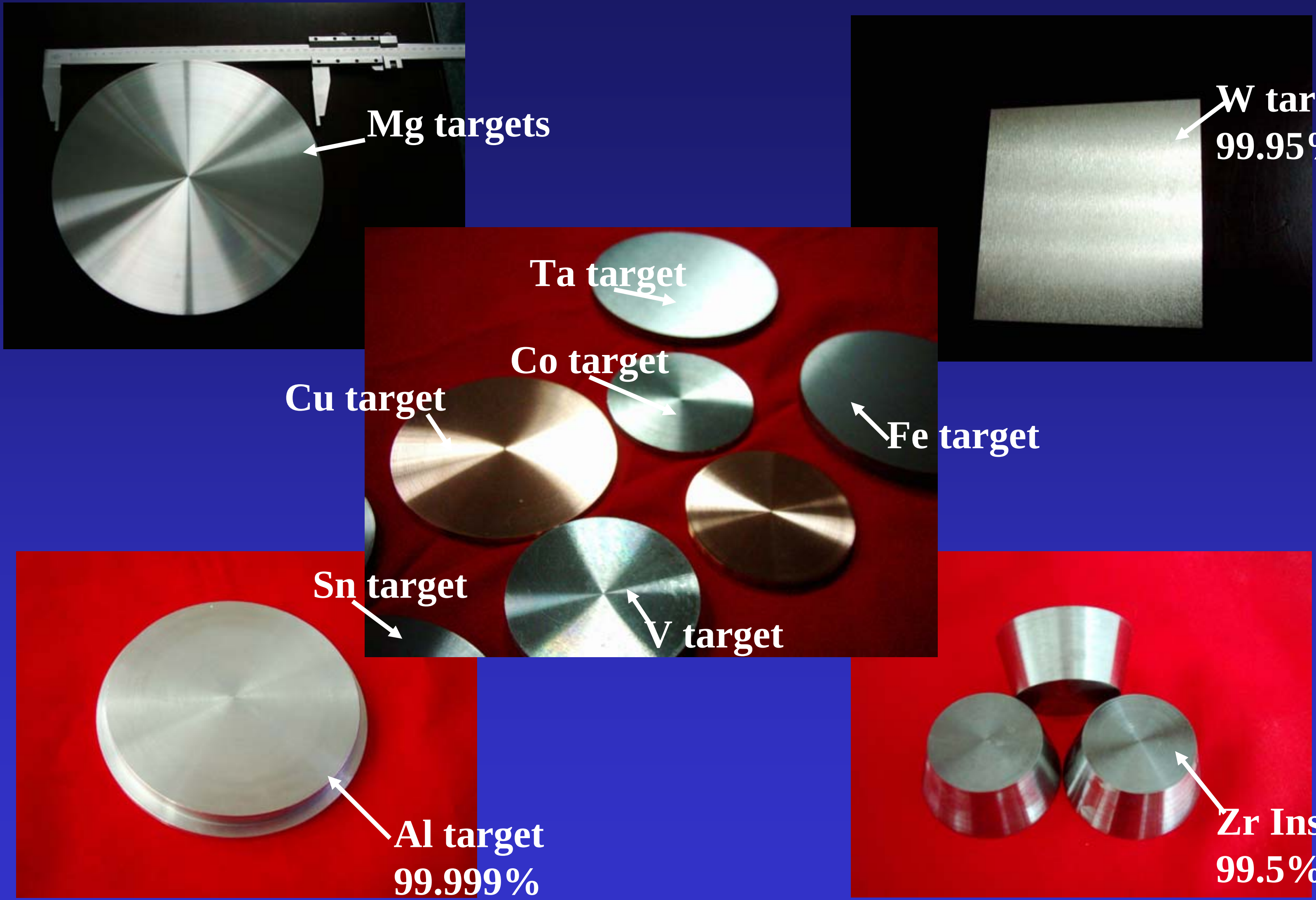
**Hf+Zr 99.9%, Zr<0.5% or Zr<1%**

**Melting methods**

**Max Size:14″ dia X 20mm**

**Grain Size<100um**

# For example(2)---- Metal sputtering targets



**Mg targets**

**W target**
**99.95%**

**Ta target**

**Co target**

**Cu target**

**Fe target**

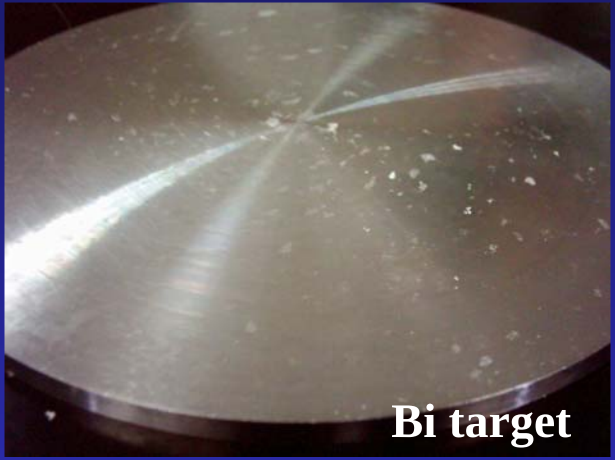
**Sn target**

**V target**

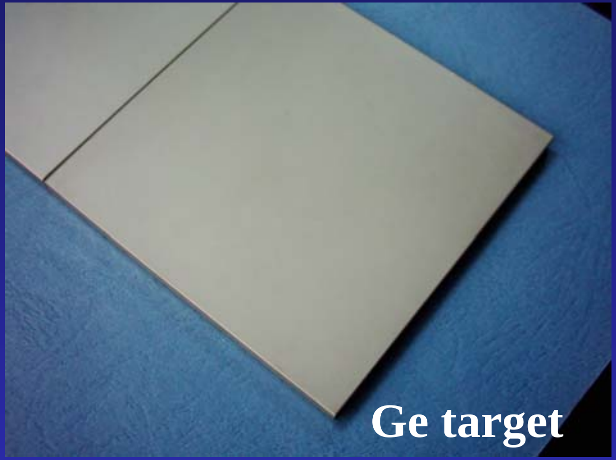
**Al target**
**99.999%**

**Zr Inserts**
**99.5%**

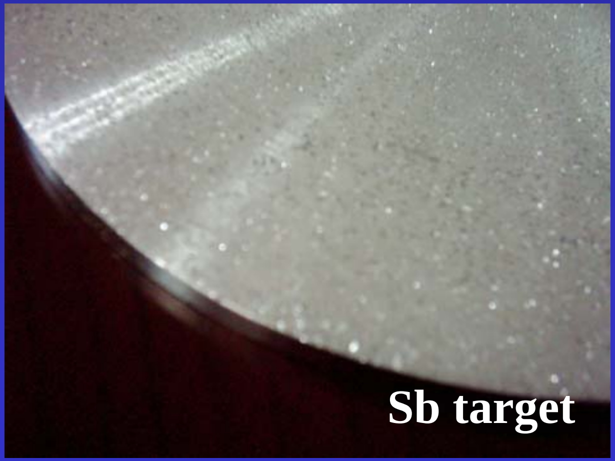
# For example(3)----Metal sputtering targets



Bi target



Ge target



Sb target

Te target

# Fox example(4)---- Alloys sputtering targets

**TiAl target**

**Ti-40Al, Ti-5oAl, Ti-67Al,Ti-70Al at%**

**99.6%,99.8%**

**HIP methods, melting methods**

**Max size:750X250X25mm**

**Grain Size<100um**

**WTi target**

**W-10Ti, W-20Ti**

**99.9%**

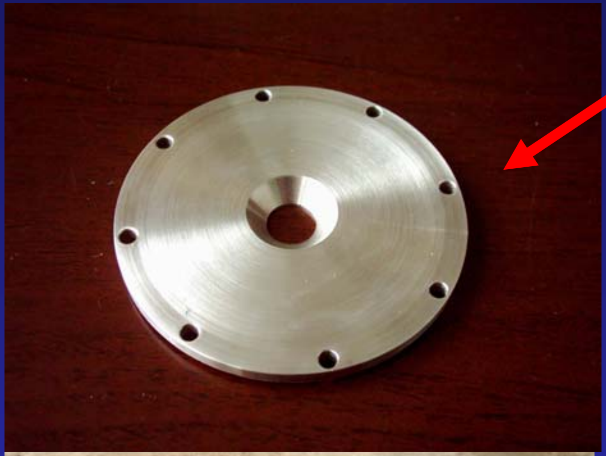
**HIP methods**

**Max size:750X250X25mm**

**Grain Size<100um**

**NiFe rings**

# For example(5)---- Alloys sputtering targets



**NiCr target**

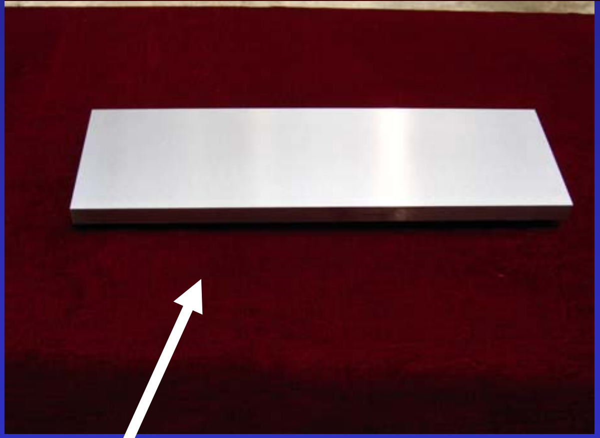
**Ni-20Cr,Ni-30Cr,Ni-40Cr,Ni-44Cr,Ni-50Cr**

**99.5%,99.9%,99.95%**

**Melting methods**

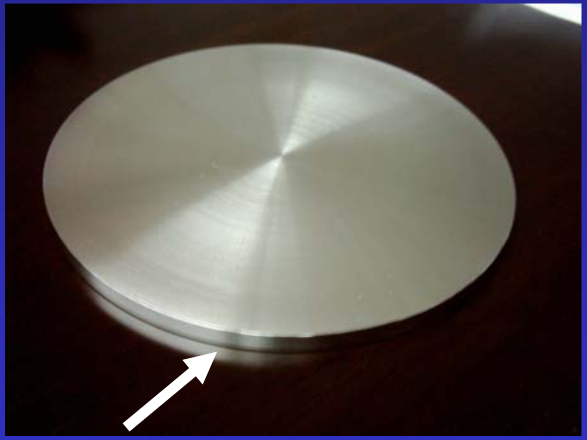
**Max size:900X250X30mm**

**Grain Size<100um**



**NiV 93/7wt%**

**NiFe 80/20wt%**



**FeMn 5050wt%**

# For example(6)---- bonding service

**Bonding service with Indium**

**Backing plate could be Copper or other metal**

# For example(7)---- Noble metals


Ag rings


Re discs


**AgCu 72-28wt %**


Ru target


Au target

# For example(8)---- Rare earth metal & alloy sputteri

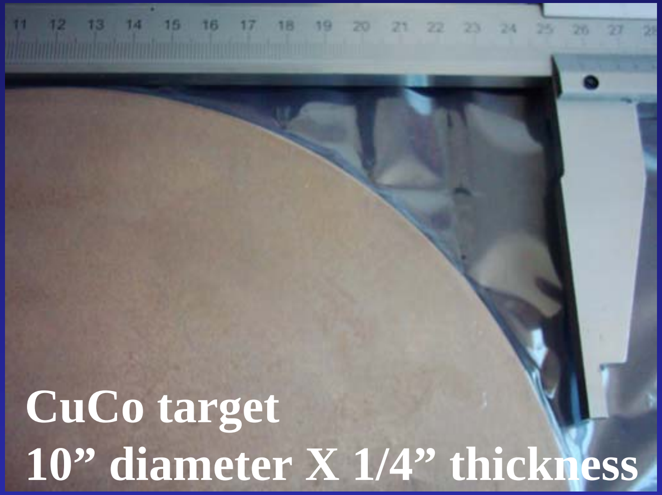
**La target**
**La/TREM 99.9%min**
**TREM 99%min**

**Er target**
**Er/TREM 99.95%min**
**TREM 99.5%min**

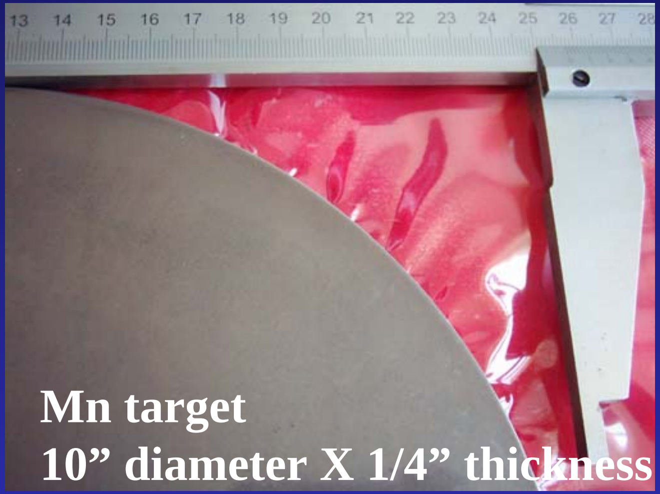
**ZrY alloy target**
**99.9% purity**

**Y foils**
**Y/TREM 99.9%min**
**TREM 99.5%min**

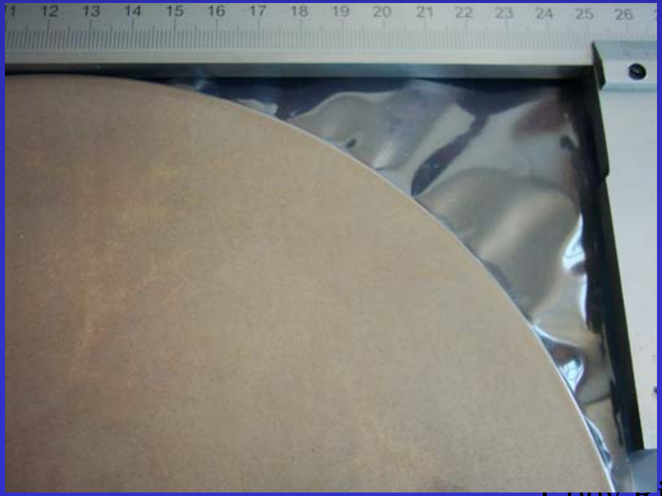
# For example(9)----Ceramic sputtering targets



**CuCo target**
**10” diameter X 1/4” thickness**
**Hot press methods**

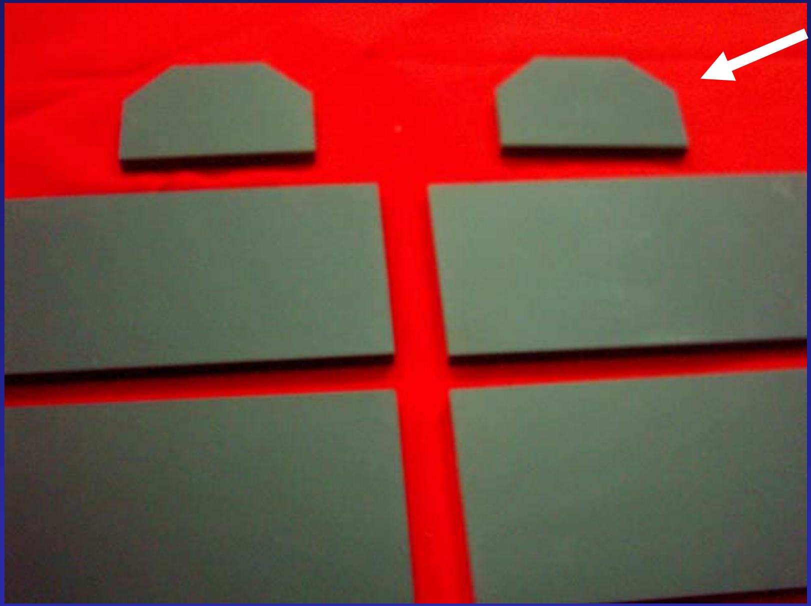


**Mn target**
**10” diameter X 1/4” thickness**
**Hot press methods**



**MnCo target**
**10” diameter X 1/4” thickness**
**Hot press methods**

# For example(10)----Ceramic sputtering targets



**ITO targets，tablets**

**In2O3:SnO2=90:10; 95:5**

**99.99%**

**HIP methods, RD>95%**

**Ta2O5 targets (white and black)**

**99.99%**

**HP and HIP methods, RD>90%**

# For example(11)---Ceramic sputtering targets (big size)

**TiN target**

**99.9%**

**8” diameter X 1/4” thickness**

**Hot press methods**

**ZrO2+Y2O3 target**

**99.99%**

**8” diameter X 1/4” thickness**

**Hot press methods**

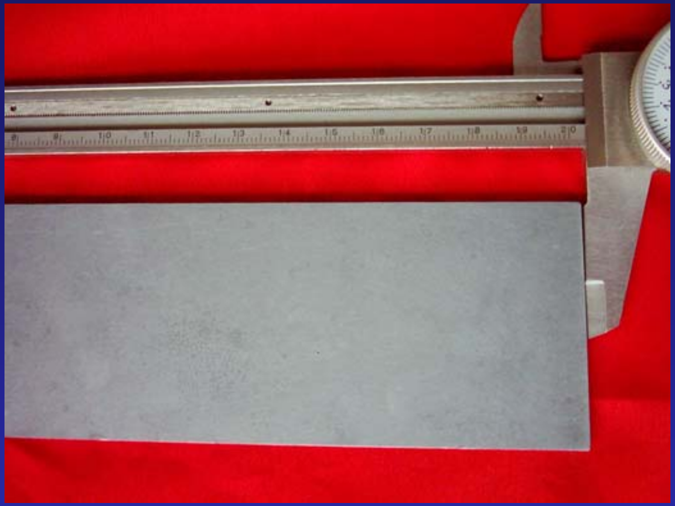
# For example(12)----Ceramic sputtering targets

**LaB6 products**

**As drawing**

**HT methods**

# For example(13) ----Ceramic sputtering targets



**WS2 target**

**99.9%**

**5”X10”X1/4”thick**

**Hot press methods**

**CuInGaSe2**
**Bonded to Cu plate**

**ZrB2 target**

**99.5%**

**Hot press methods**

**SiGe target**

# For example(14)----Ceramic sputtering targets

**Er2O3 target**
**Er2O3 rod**

**Y2O3 target**

**In2O3 target**

**CeO2 target**

**LaAlO3 target**

# For example(15)----Ceramic sputtering targets

**MgO+ZnO target**

**ZnO+SnO2 target**

**ZnO+Al2O3 target**

**In2O3+ZnO target**

**In2O3+MoO3 target**

**ZnO+Ga2O3 target**

**ZnO+MnO target**

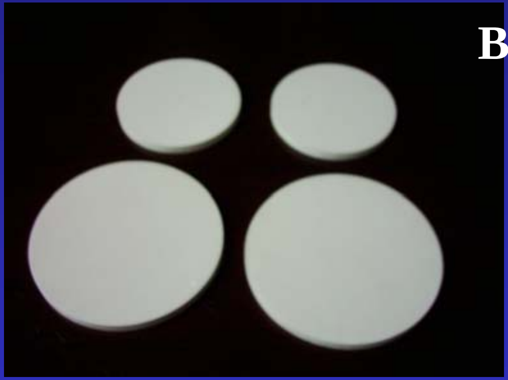
**TiO2+Ta2O5 target**

**ZnO+P2O5 target**

## For example(16)----Ceramic sputtering targets

**TaN , TiN target**

**WC target**



**BN target**

**NiO target**

**AlN target**

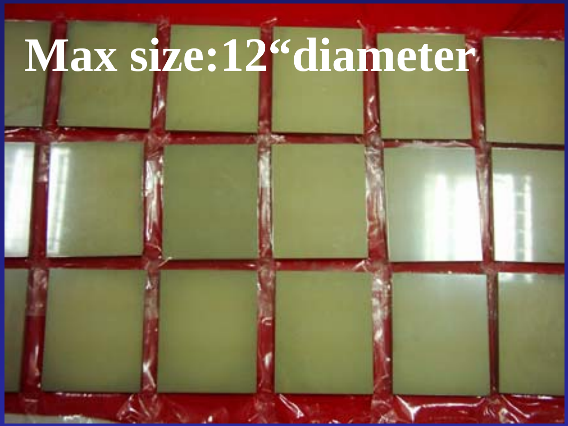
**SiO target**

## For example(17)----Ceramic sputtering targets

**TiO2 Targets**

**Max size:12“diameter**

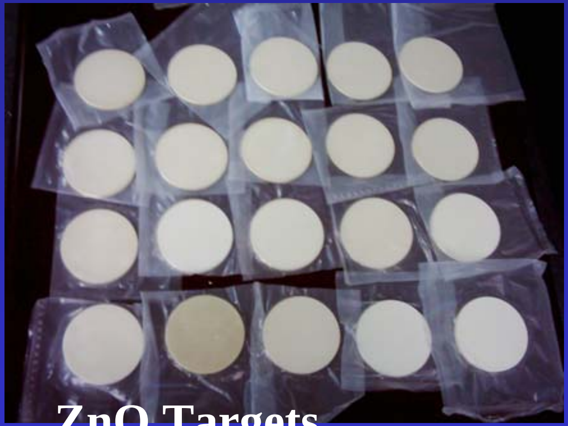
**AZO Targets**



**Max size:12“diameter**

**MgO Targets**

**Max size:12“diameter**



**ZnO Targets**

**Max size:12“diameter**

**HfO2 Targets**

**Max size:12“diameter**

**Al2O3 Targets**

**Max size:12“diameter**

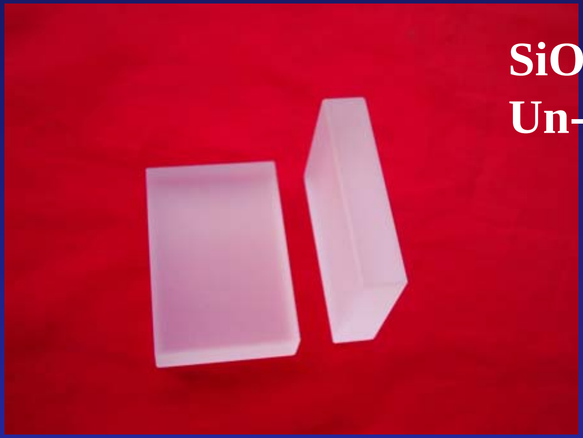
# For example(18)----Ceramic sputtering targets

**Kinds of Targets**

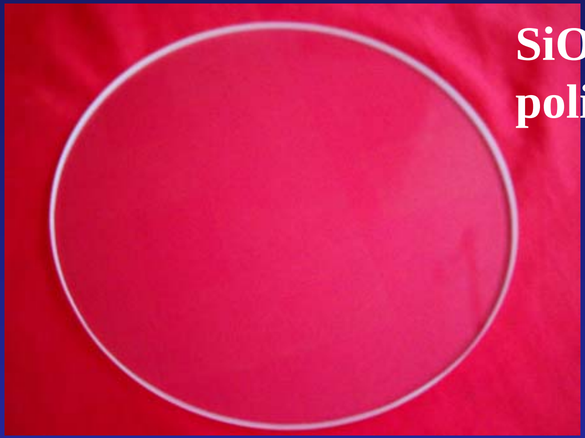
# For example(19)----Ceramic sputtering

## Bulks of targets

# For example(20)----Wafers



**SiO2 targets**
**Un-polished**



**SiO2 targets**
**polished**

**Si targets**
**Un-polished**

**Si targets**
**polished**