



**Product Catalog**

# Deposition Material

*Including but not limited to*

## **Oxide**

*IZO, ITO, VO<sub>2</sub>, Nd<sub>2</sub>O<sub>3</sub>, BaCeO<sub>3</sub>, BaTiO<sub>3</sub>, LiCoO<sub>2</sub>*

## **Metal and alloy**

*Sc, Re, Hf, Mo, Gd, Dy, V-Ni, Cu-W, Al-Nd*

## **Carbide, Nitride,**

*SiC, TaC, HfC, B<sub>4</sub>C, TiN, CrN, AlN, MgF<sub>2</sub>*

## **Sulfide, Selenide, Telluride**

*CuS, MoS<sub>2</sub>, GeSe<sub>2</sub>, In<sub>2</sub>Se<sub>3</sub>, WSe<sub>2</sub>, Bi<sub>2</sub>Te<sub>3</sub>, Sb<sub>2</sub>Te<sub>3</sub>*

## **Other**

*HfB<sub>2</sub>, NdB<sub>6</sub>, MgF<sub>2</sub>*



# Advanced Ceramics

## **Boron Nitride (BN)** hot pressed and PBN

*Rod /Tube/Plate*

*Crucible/Nozzles*

*Custom manufacturing*



## **Zirconia (ZrO<sub>2</sub>), Y<sub>2</sub>O<sub>3</sub>, MgO or CaO Stabilized**

*Grinding jar and ball*

*Crucible/Nozzle/Tube/Rod*

*Custom parts*

## **Lanthanum Hexaboride (LaB<sub>6</sub>)**

*Rod/Tube/Plate*

*Crucible/Electrode*



# Refractory Metal Products

## Material

*Niobium (Nb)*

*Tantalum (Ta)*

*Tungsten (W)*

*Molybdenum (Mo)*

*And alloys,*

*W-Ni-Fe*

*Ta-W and more*

## Product

*Capillary/Tube/Ring*

*Rod/Bar*

*Plate/Sheet/Foil*

*Crucible/Heat shield*

*Simple shape custom parts*





## Raw Material

### Pure Elements

*B, Si Mg,  
Sc, Y and lanthanides  
Ti, Zr, Hf,  
Ta, Nb,  
W, Mo, Re,  
99.9%~99.999% Pure metal in  
powder grits or ingots form*

### Rare earth master alloys

*Rare earth modified Al, Mg, Fe based  
master alloy  
Sc-Al, Nd-Al  
Mg-Y, Mg-La, Mg-Gd, Mg-Sc...*

### Special Inorganics

*Rare earth compounds  
Mixed oxides  
Carbides and nitrides  
Sulfides, selenides and tellurides  
99.9%~99.99% Pure in powder form*

# Sample Products

6" Scandium sputter target, indium bonding to custom manufactured copper backing plate →



14" 99.5% pure  $Y_2O_3$  Plate, hot pressed →



High purity titanium crystal ↓



Custom made hot pressed boron nitride reactor with cap and accessory ↗



## Reference Price List for Regular Products (Sputter Targets)

Target Material	Purity	2" x 0.125"	3" x 0.125"	*Note	Target Material	Purity	2" x 0.125"	3" x 0.125"	*Note
AIB	99.99%	\$612	\$714		Se	99.99%	\$374	\$487	
CeB6	99.99%	\$952	\$1,169		Ta	99.95%	\$578	\$1,039	
CrB	99.99%	\$646	\$779		SnZn	99.9%	\$578	\$682	
CrB2	99.99%	\$612	\$747		WTi 90: 10wt%	99.9%	\$510	\$617	
Cr2B4	99.99%	\$612	\$747		ZnSn	99.9%	\$578	\$682	
CoB	99.99%	\$544	\$649		CoFeB	99.90%	\$544	\$649	
HfB2	99.99%	\$1,429	\$1,818		Sb	99.99%	\$646	\$714	
FeB	99.99%	\$544	\$649		B	99.99%	\$442	\$552	
MgB2	99.99%	\$612	\$747		Ge	99.999%	\$1,020	\$1,396	
MoB2	99.99%	\$680	\$812		Mn	99.9%	\$374	\$422	
NiB	99.99%	\$544	\$649		Te	99.999%	\$510	\$649	
TaB2	99.99%	\$748	\$909		AlN	99.9%	\$340	\$487	
TiB2	99.99%	\$374	\$455		BN	99.9%	\$374	\$455	
ZrB2	99.99%	\$578	\$714		CrN	99.5%	\$408	\$487	
LaB6	99.9%	\$480	\$520		HfN	99.5%	\$1,565	\$2,468	
B4C	99.9%	\$374	\$487		NbN	99.5%	\$646	\$812	
Cr3C2	99.9%	\$544	\$649		Si3N4	99.9%	\$306	\$390	
HfC	99.9%	\$2,095	\$3,050		TaN	99.9%	\$680	\$909	
Fe3C	99.9%	\$544	\$649		TiN	99.5%	\$340	\$455	
Mo2C	99.9%	\$544	\$649		VN	99.5%	\$1,190	\$1,526	
NbC	99.9%	\$612	\$714		ZrN	99.5%	\$510	\$617	
SiC	99.9%	\$272	\$325		Al2O3	99.9%	\$306	\$390	
TaC	99.9%	\$680	\$844		Sb2O3	99.9%	\$680	\$844	
TiC	99.9%	\$340	\$455		ATO (Sb2O3/SnO2)	99.99%	\$578	\$747	Ratio could be customized
WC	99.9%	\$408	\$519		AZO (ZnO/Al2O3)	99.99%	\$272	\$390	Ratio could be customized
VC	99.9%	\$646	\$779		Ba0.55Sr0.5TiO3	99.99%	\$514	\$607	Ratio could be customized
ZrC	99.9%	\$442	\$487		BaTiO3	99.99%	\$421	\$507	
AlF	99.99%	\$578	\$682		BaZrO3	99.9%	\$680	\$974	
CaF2	99.99%	\$510	\$552		BiFeO3	99.9%	\$476	\$584	
YF3	99.99%	\$442	\$552		Bi3Fe5O12	99.9%	\$544	\$649	
LaF3	99.99%	\$442	\$552		Bi2O3	99.9%	\$408	\$519	
CeF3	99.99%	\$544	\$617		Bi4Ti3O12	99.9%	\$544	\$649	
YbF3	99.99%	\$646	\$747		Cr-SiO	99.9%	\$544	\$584	
LiF	99.99%	\$408	\$487		Cr2O3	99.9%	\$340	\$487	
MgF2	99.99%	\$408	\$487		CoO	99.9%	\$408	\$487	
NaF	99.99%	\$374	\$455		Co2O3	99.9%	\$510	\$552	
ZnF2	99.99%	\$612	\$714		Co3O4	99.9%	\$374	\$455	
AlCu	99.99%	\$408	\$519		CuAlO2	99.9%	\$476	\$519	
AlSc	99.9%	\$1,361	\$1,591	Ratio could be customized	CuO	99.9%	\$408	\$487	
CoAl	99.9%	\$612	\$844		GZO (ZnO/Ga2O3)	99.9%	\$476	\$552	
CoFe	99.9%	\$544	\$649		HfO2	99.9%	\$476	\$747	
CuGa	99.99%	/	/	Ratio could be customized	Ho2O3	99.9%	\$476	\$714	
CuGe	99.99%	/	/	Ratio could be customized	IGZO	99.99%	\$510	\$714	
CuIn	99.99%	/	/	Ratio could be customized	In2O3	99.99%	\$476	\$649	
CuInGa	99.99%	/	/	Ratio could be customized	Fe2O3	99.9%	\$340	\$487	
SmCo5	99.9%	\$952	\$1,104		Fe3O4	99.9%	\$340	\$487	
MoCr	99.9%	\$578	\$682	Ratio could be customized	IZO	99.99%	\$544	\$714	
MoNb	99.90%	\$476	\$682	Ratio could be customized	PbO	99.99%	\$544	\$649	
MoTi	99.90%	\$578	\$682	Ratio could be customized					
NiCr 80/20 wt%	99.9%	\$544	\$649						

\*List above present the reference for target material only. Backing plate is not included but an option. Other thickness or diameters are available. Please contact us for details and formal quote.

\*Lead time for sputter targets are usually 4 weeks for ceramics, and 2-3 weeks for pure or alloyed material.



Website: [www.QSAdvancedMaterials.com](http://www.QSAdvancedMaterials.com)  
E-mail: [sales@qsadvancedmaterials.com](mailto:sales@qsadvancedmaterials.com)

## Reference Price List for Regular Products (Sputter Targets)

Target Material	Purity	2" x 0.125"	3" x 0.125"	*Note	Target Material	Purity	2" x 0.125"	3" x 0.125"	*Note
PbTiO3	99.99%	\$544	\$649		Er2O3	99.9%	\$510	\$617	
PbZrO3	99.99%	\$578	\$682		Tm2O3	99.9%	\$680	\$909	
PbZr0.52Ti0.48O3	99.9%	\$408	\$519		Yb2O3	99.9%	\$476	\$617	
LiCoO2	99.9%	\$408	\$519		Lu2O3	99.9%	\$646	\$812	
LiNbO3	99.9%	\$612	\$714		ZrO2	99.9%	\$374	\$519	
Li3PO4	99.9%	\$408	\$519		Bi2Se3	99.9%	\$714	\$942	
MgO	99.9%	\$340	\$422		CdSe	99.9%	\$680	\$877	
MnO	99.9%	\$374	\$455		CIGS	99.9%	\$748	\$909	
MoO3	99.9%	\$408	\$487		CIS	99.9%	\$748	\$877	
Sc2O3	99.9%	\$1,190	\$1,786		Cu2Se	99.9%	\$680	\$877	
NiO	99.9%	\$340	\$390		Ga2Se3	99.99%	\$748	\$942	
Nb2O5	99.9%	\$340	\$390		GeSe2	99.99%	\$884	\$1,169	
Y2O3	99.9%	\$340	\$455		In2Se3	99.99%	\$748	\$974	
YSZ = ZrO2/Y2O3	99.9%	\$408	\$519		PbSe	99.99%	\$816	\$974	
LaAlO3	99.9%	\$680	\$844		MoSe2	99.99%	\$884	\$1,169	
LaMnO3	99.9%	\$680	\$844		NbSe2	99.99%	\$884	\$1,169	
LaNiO3	99.9%	\$680	\$844		TaSe2	99.99%	\$1,020	\$1,299	
LaNbO3	99.9%	\$680	\$844		TiSe2	99.99%	\$884	\$1,169	
La2O3	99.9%	\$680	\$844		WSe2	99.99%	\$884	\$1,169	
LaTiO3	99.9%	\$680	\$844		ZnSe	99.99%	\$680	\$714	
LaVO3	99.9%	\$680	\$844		Sb2S3	99.99%	\$680	\$844	
SiO	99.9%	\$306	\$422		CdS	99.9%	\$340	\$455	
SrRuO3	99.9%	\$3,741	\$6,494		Cu2S	99.9%	\$680	\$844	
SrTiO3	99.9%	\$414	\$493		CuS	99.9%	\$680	\$844	
SrZrO3	99.9%	\$816	\$1,071		GeS	99.9%	\$1,088	\$1,688	
Ta2O5	99.9%	\$476	\$649		In2S3	99.9%	\$680	\$909	
CeO2	99.9%	\$408	\$519		FeS	99.9%	\$476	\$584	
Pr6O11	99.9%	\$544	\$714		PbS	99.9%	\$612	\$747	
Nd2O3	99.9%	\$476	\$649		MoS2	99.9%	\$390	\$460	
Sm2O3	99.9%	\$442	\$519		SnS	99.9%	\$680	\$877	
Eu2O3	99.9%	\$578	\$747		SnS2	99.9%	\$680	\$877	
SnO2	99.99%	\$510	\$649		WS2	99.9%	\$340	\$390	
TiO2	99.99%	\$340	\$422		ZnS	99.9%	\$340	\$390	
TiO	99.99%	\$612	\$714		AlSi	99.9%	\$578	\$682	
Ti2O3	99.99%	\$510	\$617		AlSiCu	99.9%	\$612	\$714	
Ti3O5	99.99%	\$680	\$844		CrSi	99.9%	\$612	\$714	
WO3	99.9%	\$374	\$519		CrSi2	99.9%	\$612	\$714	
V2O5	99.9%	\$374	\$487		CoSi2	99.9%	\$612	\$714	
Gd2O3	99.9%	\$374	\$487		HfSi2	99.9%	\$986	\$1,234	
Tb4O7	99.9%	\$680	\$942		FeSi2	99.9%	\$544	\$649	
Dy2O3	99.9%	\$408	\$584		Mg2Si	99.9%	\$612	\$779	
					MoSi2	99.9%	\$408	\$519	
					MoSi	99.9%	\$612	\$714	
					NiSi2	99.9%	\$578	\$682	
					NbSi2	99.9%	\$612	\$714	
					TaSi2	99.9%	\$680	\$909	
					TiSi2	99.9%	\$510	\$649	

\*List above present the reference for target material only. Backing plate is not included but an option. Other thickness or diameters are available. Please contact us for details and formal quote.

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Target Material	Purity	2" x 0.125"	3" x 0.125"	*Note
WSi2	99.9%	\$408	\$519	
ZrSi2	99.9%	\$612	\$714	
Al2Te3	99.99%	\$578	\$747	
Cu2Te	99.99%	\$578	\$747	
Sb2Te3	99.99%	\$680	\$877	
Bi2Te3	99.99%	\$680	\$877	
CdTe	99.99%	\$435	\$519	
Ga2Te3	99.99%	\$599	\$831	
GeTe	99.99%	\$599	\$727	
In2Te3	99.99%	\$599	\$727	
PbTe	99.99%	\$463	\$649	
MnTe	99.99%	\$680	\$831	
MoTe2	99.99%	\$599	\$805	
NiTe	99.99%	\$544	\$675	
NbTe2	99.99%	\$599	\$779	
TaTe2	99.99%	\$871	\$1,169	
SnTe	99.99%	\$599	\$779	
WTe2	99.99%	\$599	\$779	
ZnTe	99.99%	\$544	\$623	
VO2	99.9%	\$565	\$652	
Mg	99.99%	\$80	\$100	
Al	99.99%	\$80	\$100	
Sc	99.5%	\$1,014	\$1,338	
Y	99.5%	\$300	\$386	
La	99.5%	\$326	\$446	
Ce	99.5%	\$317	\$437	
Pr	99.5%	\$317	\$437	
Nd	99.5%	\$317	\$437	
Sm	99.5%	\$257	\$386	
Eu	99.5%	\$257	\$386	
Gd	99.5%	\$395	\$531	
Tb	99.5%	\$344	\$471	
Dy	99.5%	\$506	\$669	
Ho	99.5%	\$506	\$669	
Er	99.5%	\$351	\$489	
Tm	99.5%	\$351	\$489	
Yb	99.5%	\$351	\$489	
Lu	99.5%	\$815	\$1,371	
Ta	99.95%	\$180	\$257	
W	99.95%	\$109	\$166	
Re	99.99%	\$1,257	\$2,800	Forged, high density
Zr	99.95%	\$171	\$229	Hf<500ppm
Nb	99.95%	\$160	\$194	
Hf	99.95%	\$257	\$331	Zr<1%

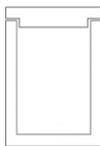
Rare earth impurity<0.01% (REM 99.9%)  
Higher purity is possible for some elements

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\*Lead time for sputter targets are usually 4 weeks for ceramics, and 2-3 weeks for pure or alloyed material.



## Reference Price List for Regular Products (Crucibles)



### Boron Nitride Cylindrical Crucibles

Item No.	Crucible ID (mm)	Crucible H (mm)	Wall Thickness(mm)	Volume (cc)	Price per pck	Pack of
BN-CCR6090	60	90	5	250	\$360	1 ea
BN-CCR4570	45	70	4	100	\$270	1 ea
BN-CCR3555	35	55	3	50	\$270	2 ea
BN-CCR2540	25	40	3	20	\$260	4 ea
BN-CCR1625	16	25	3	5	\$210	6 ea
BN-CCR20100	20	100	3	30	\$352	4 ea
BN-CCR1375	13	75	3	10	\$270	6 ea
BN-CCR7560	75	60	5	250	\$590	1 ea
BN-CCR5545	55	45	4	100	\$300	2 ea
BN-CCR4535	45	35	3	50	\$300	4 ea
BN-CCR3525	35	25	3	20	\$210	6 ea



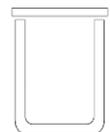
### Boron Nitride Tapered Cylindrical Crucibles

Item No.	Crucible ID (mm)	Crucible H (mm)	Wall Thickness(mm)	Volume (cc)	Price per pck	Pack of
BN-TCR68115	68	115	5	250	\$900	1 ea
BN-TCR5080	50	80	4	100	\$390	1 ea
BN-TCR4065	40	65	3	50	\$198	1 ea
BN-TCR3050	30	50	3	20	\$190	2 ea
BN-TCR1930	19	30	3	5	\$210	6 ea
BN-TCR8050	80	50	4	200	\$540	1 ea
BN-TCR6440	64	40	3	100	\$295	1 ea
BN-TCR5032	50	32	3	50	\$310	2 ea
BN-TCR4025	40	25	3	25	\$380	4 ea
BN-TCR3220	32	20	3	10	\$200	4 ea



### Boron Nitride Rectangle Crucibles

Item No.	Length (mm)	Width (mm)	Height (mm)	Wall Thickness	Price per pck	Pack of
BN-RCR2025	25	20	10	3	\$228	6 ea
BN-RCR3545	45	35	20	3	\$288	4 ea
BN-RCR4055	55	40	25	3	\$250	2 ea
BN-RCR6060	60	60	30	4	\$350	2 ea
BN-RCR9090	90	90	40	5	\$380	1 ea
BN-RCR120	120	120	55	5	\$200	1 ea



### Yttria Stabilized Zirconia (YSZ) Cylindrical Crucible

Item No.	Crucible ID (mm)	Crucible H (mm)	Wall Thickness(mm)	Volume (cc)	Price per pck	Pack of
YSZ-200	50	90	5	200	\$345	2 ea
YSZ-100	40	70	5	100	\$330	4 ea
YSZ-50	30	30	4	20	\$320	10 ea
YSZ-25	20	50	3	15	\$280	10 ea

Reference Price List for Regular Products (Pyrolytic Boron Nitride Crucibles)

Catalog No.	Diagram	Unit Price
PBN C60-54/415-00-005		\$1,110.00
PBN 10-22/415-00-006		\$450.00
PBN 35-34/415-00-007		\$610.00
PBN 200-102/415-00-008		\$2,300.00
PBN 125 54/415-00-011		\$1,110.00
PBN 200-58/415-00-012		\$1,190.00
PBN C5-29/415-00-013		\$490.00
PBN C16-36/415-00-014		\$650.00

Catalog No.	Diagram	Price
PBN 85-41/415-00-018		\$890.00
PBN C5-27/415-00-020		\$450.00
PBN C80-54/415-00-021		\$1,110.00
PBN 60-37/415-00-032		\$730.00
PBN 35-37/415-00-034		\$690.00
PBN C25-51/415-00-035		\$960.00
PBN C40-51/415-00-036		\$960.00
PBN c200-84/415-00-038		\$1,600.00



Reference Price List for Regular Products (Ceramic material)

Catalog No.		Price
PBN 25-33/415-00-041		\$590.00
PBN 40-36/415-00-042		\$680.00
PBN C80-54/415-00-043		\$1,110.00
PBN 155-60/415-00-045		\$1,200.00
PBN C75-77/415-00-046		\$1,580.00
PBN 420-84/415-00-047		\$1,600.00
PBN C12-36/415-00-057		\$650.00
PBN 1-14/415-00-065		\$360.00

Catalog No.		Price
PBN 130-54/415-00-075		\$1,110.00
PBN 1-12/415-00-084		\$390.00
PBN 160-60/415-00-100		\$1,210.00
PBN C12-37/415-00-112		\$690.00
PBN C8-27/415-00-140		\$450.00
PBN 1-20/415-00-148		\$420.00
PBN c82 71/418-00-170		\$1,380.00
PBN 25-50/420-00-014		\$940.00
PBN 10-32/430-00-002		\$490.00



## Boron Nitride Rod/Disc

Diameter	Length	Price
0.5"	12"	\$95
1"	12"	\$215
1.5"	12"	\$450
2"	12"	\$790
3"	12"	\$1950
4"	12"	\$3100
2"	6"	\$370
3"	6"	\$960
4"	6"	\$1510
4"	0.25"	\$140
6"	0.25"	\$230
8"	0.25"	\$410
10"	0.25"	\$360
12"	0.25"	\$520
14"	0.25"	\$1250
4"	0.5"	\$130
6"	0.5"	\$260
8"	0.5"	\$560
10"	0.5"	\$960
12"	0.5"	\$1150
14"	0.5"	\$1600

## Boron Nitride Plate

Length	Width	Thickness	Price
2"	4"	0.5"	\$90
4"	4"	0.5"	\$130
8"	4"	0.5"	\$260
12"	4"	0.5"	\$390
8"	8"	0.5"	\$510
12"	8"	0.5"	\$768
12"	12"	0.5"	\$1150
2"	4"	1"	\$130
4"	4"	1"	\$260
8"	4"	1"	\$515
12"	4"	1"	\$765
8"	8"	1"	\$1010
12"	8"	1"	\$1430
12"	12"	1"	\$2350
4"	4"	2"	\$515
8"	4"	2"	\$1020
12"	4"	2"	\$1530
8"	8"	2"	\$1960
12"	8"	2"	\$3880
12"	12"	2"	\$5700

\*Any dimension within 14" x 14" x 8" blank is possible to make.

\*Listed price for reference only. Please contact us for availability, latest cost and possible discounts.



**Tantalum**

Disc	Price/lb	Plate/Sheet	Price/lb	Rod	Price/lb
2mm thick	\$920	2mm thick	\$1,000	1~5mm Dia.	\$1,000
5mm thick	\$790	5mm thick	\$690	5~10mm Dia	\$640
>10mm thick	\$640	>10mm thick	\$580	>10mm Dia	\$580

**Niobium**

Disc	Price/lb	Plate/Sheet	Price/lb	Rod	Price/lb
2mm thick	\$450	2mm thick	\$350	1~5mm Dia.	\$450
5mm thick	\$230	5mm thick	\$215	5~10mm Dia	\$215
>10mm thick	\$195	>10mm thick	\$170	>10mm Dia	\$170

**Zirconium (702)**

Disc	Price/lb	Plate/Sheet	Price/lb	Rod	Price/lb
2mm thick	\$210	2mm thick	\$175	1~5mm Dia.	\$250
5mm thick	\$125	5mm thick	\$98	5~10mm Dia	\$98
>10mm thick	\$100	>10mm thick	\$80	>10mm Dia	\$80

\*Listed price for reference only. Please contact us for availability, latest cost and possible discounts.



**QS Advanced Materials Inc**

*(former QS Rare Elements LLC)*

**2023**