



### GENERAL PROPERTIES

Symbol:	Y
Atomic Number:	39
Atomic Weight:	88.9059
Density:	4.469 gm/cc
Melting Point:	1522 °C
Boiling Point:	3338 °C
Thermal Conductivity:	0.172 W/cm <sup>°</sup> K @ 298.2 °K
Electrical Resistivity:	57.0 microhm-cm @ 25 °C
Electronegativity:	1.3 Paulings
Specific Heat:	0.068 Cal/g <sup>°</sup> K @ 25 °C
Heat of Vaporization:	93 K-Cal/gm atom at 3338 °C
Heat of Fusion:	4.10 Cal/gm mole
Thermal Neutron Cross Section:	1.38 Barns per Atom
Magnetic Susceptibility:	Slightly Positive 10 <sup>-6</sup> Emu @ Room Temp
Magnetic Moment:	0 Bohr Magnetons
Temperature Coefficient of Resistance:	0.00271 @ 0 °C to Room Temp

### MATERIAL OVERVIEW

Characteristics: Dark grey metal. Soluble in dilute acids and potassium hydroxide solution  
Decomposes in water. Known only in the tri-positive state. Low neutron capture cross-section.

Hazards: Tolerance, 1 mg/m<sup>3</sup> of air. Flammable in finely divided form.

For more informatin visit the reference library at our web site: <http://www.espi-metals.com>

**TEL: 800-638-2581    E-MAIL: sales@espi-metals.com    FAX: 800-488-0060**

<b>TYPICAL ANALYSES</b>					
<b>Impurities in ppm</b>					
3N					
Al	<100	Ca	<100	Nd	<100
Lu	<100	Fe	100	Ho	<100
Si	100	Gd	<100	Sm	<100
Yb	<100	Er	<100	Dy	<100
Mg	<100	Ni	<100		

**ROD**

**Item Description**

**Grades**

Yttrium Rod .250"	3N
Yttrium Rod .500"	3N

**Rod is cut to order and sold by the inch or foot.**

**FOIL**

**Item Description**

**Grades**

Yttrium Foil .001" to .009"	3N
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**Foil is cut to order and sold by the square inch or square foot.**

**SHEET**

**Item Description**

**Grades**

Yttrium Sheet .010"	3N
Yttrium Sheet .015"	3N
Yttrium Sheet .020"	3N
Yttrium Sheet .030"	3N
Yttrium Sheet .040"	3N

**Sheet stock is cut to order and sold by the square inch or square foot.**

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## SPUTTERING TARGETS

<u>Item Description</u>	<u>Grades</u>
Yttrium Sputtering Target 2"D X .125"T	3N
Yttrium Sputtering Target 2"D X .250"T	3N
Yttrium Sputtering Target 4"D X .125"T	3N
Yttrium Sputtering Target 4"D X .250"T	3N
Yttrium Sputtering Target 5"D X .125"T	3N
Yttrium Sputtering Target 5"D X .250"T	3N
Yttrium Sputtering Target 6"D X .125"T	3N
Yttrium Sputtering Target 6"D X .250"T	3N

For additional sizes and compounds see catalog section 'Sputtering Targets'.

## POWDER, SHOT, PELLETS, & INGOT

<u>Item Description</u>	<u>Grades</u>
Yttrium Chips or Ingot	3N
Yttrium Powder -40 Mesh	3N

**Powder, shot, pellets, and ingots are packaged to order and sold by the gram or kilogram.**

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## COMPOUNDS

### Item Description

### Grades

Yttrium Aluminide, YAl <sub>2</sub> , 1/4" Pieces by Down	2N5	
Yttrium Aluminum Oxide, Y <sub>3</sub> Al <sub>5</sub> O <sub>12</sub> , 1/2" to 1/8" Pieces		4N
Yttrium Antimonide, YSb, 1/4" Pieces by Down	2N5	
Yttrium Arsenide, YAs, 1/4" Pieces by Down	2N5	
Yttrium Bismuthide, YBi, 1/4" Pieces by Down	2N5	
Yttrium Boride, YB <sub>6</sub> , -325 Mesh		3N
Yttrium Bromide, YBr <sub>3</sub> -xH <sub>2</sub> O, -60 Mesh		3N
Yttrium Bromide, YBr <sub>3</sub> , -60 Mesh		3N
Yttrium Carbide, YC <sub>2</sub> , 1/2" Pieces by Down	2N5	
Yttrium Chloride, YCl <sub>3</sub> -xH <sub>2</sub> O, -60 Mesh		3N
Yttrium Chloride, YCl <sub>3</sub> , -60 Mesh		3N
Yttrium Fluoride, YF <sub>3</sub> , 1/4" to 1/8" Pieces		3N
Yttrium Fluoride, YF <sub>3</sub> , -60 Mesh		3N

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## COMPOUNDS

<u>Item Description</u>	<u>Grades</u>	
Yttrium Fluoride, YF <sub>3</sub> , -325 Mesh	3N	
Yttrium Hydride, YH <sub>2-3</sub> , -60 Mesh	3N	
Yttrium Iodide, YI <sub>3-x</sub> H <sub>2</sub> O, -60 Mesh	3N	
Yttrium Iodide, YI <sub>3</sub> , -60 Mesh	3N	
Yttrium Nitride, YN, -60 Mesh	3N	
Yttrium Oxide, Y <sub>2</sub> O <sub>3</sub> , -325 Mesh	3N	6N
Yttrium Oxide, Y <sub>2</sub> O <sub>3</sub> , 1/2" to 1/8" Pieces	3N	
Yttrium Oxide, Y <sub>2</sub> O <sub>3</sub> , Tablets	3N	
Yttrium Oxide, Y <sub>2</sub> O <sub>3</sub> , -150, +325 Mesh	3N	
Yttrium Oxide, Y <sub>2</sub> O <sub>3</sub> , -325 Mesh, +10 Microns	3N	
Yttrium Phosphide, YP, -60 Mesh	2N5	
Yttrium Selenide, Y <sub>2</sub> Se <sub>3</sub> , -100 Mesh	3N	
Yttrium Silicide, YSi <sub>2</sub> , 1/4" Pieces by Down	3N	

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## COMPOUNDS

### Item Description

### Grades

Yttrium Sulfide,  
 $Y_2S_3$ , -200 Mesh 3N

Yttrium Telluride,  
 $Y_2Te_3$ , -20 Mesh 3N

**Compounds are packaged to order and sold by the gram or kilogram.**