B

MATERIALS
POWDERS

PURITY

Purity is based on spectrographic values of trace metals found, i. e. 99.999% pure indicates that 0.001% (10 ppm) total of trace metals have been observed. 99.9% pure implies a total metallic impurity content of 0.1% (1000 ppm). Gases, Carbon and Sulfur are not included in the analysis but can possibly be determined if needed.

PARTICLE SIZES

Particle sizes are listed as determined with sieves. "-100, +325 mesh" means that all of the particles pass through a 100 mesh screen and are completely retained on a 325 mesh screen. "Mesh" indicates the number of sieve openings per linear inch.

CERTIFICATE OF ANALYSIS AND MSDS

All items are shipped with an analysis certificate. The analysis is specific to the actual lot of material being sent and not a "typical analysis", unless specifically stated.

All dangerous materials are shipped attached by a Material Safety Data Sheet (MSDS).

CUSTOM MANUFACTURING

The particle sizes and purity listed are those most commonly used and called as. However Neyco can offer nearly any range of particle sizes desired, with purity needed on request.

Whether you require a product with only a minor variation from our standard material, a complete custom chemical synthesis, or a custom metal fabrication, Neyco is your source.

Particle Size Conversion Table

MESH SIZE	APPROXIMATE SIZE (µm)	APPROXIMATE SIZE (mm)
4	4760	4.760
6	3360	3.360
8	2380	2.380
10	2000	2.000
12	1680	1.680
14	1141	1.410
16	1190	1.190
18	1000	1.000
20	841	0.841
25	707	0.707
30	595	0.595
35	500	0.500
40	420	0.420
45	354	0.354
50	297	0.297
60	250	0.250
70	210	0.210
80	177	0.170
100	149	0.140
120	125	0.125
140	105	0.100
170	88	0.088
200	74	0.074
230	63	0.063
270	53	0.053
325	44	0.044
400	37	0.037
425	35	0.035
625	20	0.020
1250	10	0.010
2500	5	0.005

High Purity Inorganic Powders

Al 13

ALUMINUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Aluminum	Al	-200 mesh to 1 µm aver. or less	99 to 99.99
Aluminum Arsenide	AlAs	-20 mesh to -325 mesh	99.5
Aluminum Boride	AlB_2	-200 mesh	99 to 99.5
Aluminum Bromide	$AlBr_3$	-10 mesh	99.999
Aluminum Carbide	Al_4C_3	-325 mesh	99 to 99.9
Aluminum Chloride	$AlCl_3$	-10 mesh to -100 mesh	99.9 to 99.999
Aluminum Fluoride	AlF_3	-100 mesh	99.9 to 99.99
Aluminum Hydroxide	$Al(OH)_3$	-100 mesh	99.9
Aluminum Iodide	AlI_3	-10 mesh to -100 mesh	99.998
Aluminum Molybdate	$Al_2(MoO_4)_3$	-100 mesh	99.5 to 99.9
Aluminum Nickelide	AlNi	-10 mesh to -100 mesh	99.9 to 99.999
Aluminum Nitride	AlN	-100 mesh to -400 mesh	99.5 to 99.9
Aluminum Oxide	Al_2O_3	-40 mesh to 1µm aver. or less	99.2 to 99.999
Aluminum Oxide Chromium Oxide (98/2 wt%)	Al_2O_3-Cr_2O_3	-325 mesh, +10 µm	99
Aluminum Oxide Silicon Oxide	$3Al_2O_3$-$2SiO_2$	-140, +325 mesh to -325 mesh	98
Aluminum Telluride	Al_2Te_3	-160 mesh	99.999
Aluminum Oxide Titanium Oxide (97/3 wt%)	Al_2O_3-TiO_2	-325 mesh, +10 µm	99
Aluminum Silicon (88/12 wt%)	Al-Si	-170, +325 mesh to -325 mesh	99
Aluminum Sulfide	Al_2S_3	-100 mesh	99.9
Aluminum Silicon Copper	AlSiCu	-300 mesh	99.99

*Purity based on metallic impurities.

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Aluminum Titanate	Al_2TiO_5	-100 mesh to -400 mesh	99.5
Aluminum Tungstate	$Al_2(WO_4)_3$	-100 mesh	99.9
Aluminum Zirconate	Al_2O_3-$3ZrO_2$	-100 mesh	99

Sb 51 ANTIMONY Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Antimony	Sb	-100, +325 mesh to -325 mesh	99.5 to 99.995
Antimony Bromide	$SbBr_3$	-8 mesh to -100 mesh	99.5 to 99.999
Antimony Chloride	$SbCl_3$	-8 mesh to -100 mesh	99.999
Antimony Fluoride	SbF_3	-40 mesh	99.5
Antimony Iodide	SbI_3	-80 mesh to -100 mesh	99.999
Antimony Oxide	Sb_2O_3	-100 mesh to -425 mesh	99.9 to 99.999
Antimony Selenide	Sb_2Se_3	-325 mesh	99 to 99.999
Antimony Sulfide	Sb_2S_3	-325 mesh	99.9 to 99.995
Antimony Sulfoiodide	SbSI	-20 mesh	99.9
Antimony Telluride	SbTe	-100 mesh	99.999
Antimony Telluride	Sb_2Te_3	-100 mesh to -325 mesh	99 to 99.999

As 33 ARSENIC Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Arsenic	As	-20 mesh to 325 mesh	99 to 99.999
Arsenic Iodide	AsI_3	-80 mesh	99
Arsenic Oxide	As_2O_5	-100 mesh	99.9
Arsenic Selenide	As_2Se_3	-160 mesh to -325 mesh	99.999
Arsenic Sulfide	As_2S_3	-160 mesh	99.999
Arsenic Telluride	As_2Te_3	-160 to -325 mesh	99 to 99.999

*Purity based on metallic impurities.

Ba
56

BARIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Barium Aluminate	$BaAl_2O_4$	-100 mesh	99.5 to 99.9
Barium Boride	BaB_6	-100 mesh to +325 mesh	99.5 to 99.9
Barium Bromide	$BaBr_2$	-20 mesh to -100 mesh	99.9 to 99.998
Barium Carbide	BaC_2	-8 mesh	99.5
Barium Carbonate	$BaCO_3$	-20 mesh to -400 mesh	99.9 to 99.9999
Barium Chlorate	$Ba(ClO_3)_2$	-80 mesh	99.9
Barium Chromate	$BaCrO_4$	-100 mesh	99.5
Barium Copper Oxide	$BaCuO_2$	-100 mesh	99.9
Barium Ferrite	$BaFe_{12}O_{19}$	-325 mesh	98
Barium Fluoride	BaF_2	-40 mesh to -325 mesh	99.95 to 99.995
Barium Hydride	BaH_2	-60 mesh	99.7
Barium Iodate	$Ba(IO_3)_2$	-80 mesh	99.5
Barium Iodide	BaI_2	-10 mesh to -80 mesh	99.955 to 99.999
Barium Molybdate	$BaMoO_4$	-100 mesh	99.9
Barium Niobium Oxide	$BaNb_2O_6$	-60 mesh	99.9
Barium Nitride	Ba_3N_2	-20 mesh	99.7
Barium Oxide	BaO	-100 mesh	99.5
Barium Peroxide	BaO_2	-80 mesh	99
Barium Selenide	BaSe	-20 mesh	99.5
Barium Stannate	$BaSnO_3$	-325 mesh	99
Barium Sulfate	$BaSO_4$	-100 mesh	99 to 99.995
Barium Sulfide	BaS	-200 mesh	99.9
Barium Tantalate	$BaTa_2O_6$	-100 mesh	99
Barium Telluride	BaTe	-20 mesh	99.5
Barium Titanate	$BaTiO_3$	-325 mesh to ~ 5 µm	99 to 99.95
Barium Tungstate	$BaWO_4$	-200 mesh	99.9
Barium Vanadate	$Ba_3(VO_4)_2$	-200 mesh	99.9
Barium Zirconate	$BaZrO_3$	-100, +200 mesh to -325 mesh	99
Barium Zirconate Titanate	$BaTiZrO_5$	-100 mesh	99.9

*Purity based on metallic impurities.

Bi 83

BISMUTH Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Bismuth	Bi	-100, +325 mesh to -200 mesh	99.5 to 99.999
Bismuth Bromide	$BiBr_3$	-60 mesh	99 to 99.999
Bismuth Chloride	$BiCl_3$	-60 mesh	99.9 to 99.999
Bismuth Chromate	$Bi_2Cr_2O_9$	-100 mesh	99.9
Bismuth Fluoride	BiF_3	-60 mesh to -200 mesh	99.9 to 99.999
Bismuth Iodide	BiI_3	-40 mesh to -100 mesh	99.9 to 99.999
Bismuth Molybdate	Bi_2MoO_6	-325 mesh	99
Bismuth Molybdate	$Bi_2Mo_3O_{12}$	-200 mesh	99.5
Bismuth Oxide	Bi_2O_3	-300 mesh to -325 mesh	99.9 to 99.999
Bismuth Oxide	$Bi_2O_4 \cdot 2H_2O$	-200 mesh	99.8
Bismuth Selenide	Bi_2Se_3	-200 mesh to -325 mesh	99 to 99.999
Bismuth Stannate	$Bi_2Sn_2O_7$	-200 mesh	99.9
Bismuth Sulfide	Bi_2S_3	-160 mesh	99.999
Bismuth Telluride	Bi_2Te_3	-160 mesh to -325 mesh	99.99 to 99.999
Bismuth Telluride Selenide	$Bi_{0.5}Te_{2.7}Se_{0.3}$	-160 mesh	99.99
Bismuth Titanate	Bi_2TiO_3	-100 mesh	99.9
Bismuth Titanate	$Bi_4Ti_3O_{12}$	-325 mesh	99.9
Bismuth Titanate	$Bi_2Ti_4O_{11}$	-325 mesh to -625 mesh	99.9
Bismuth Titanate	$Bi_{12}TiO_{20}$	-325 mesh	99.9
Bismuth Tungstate	$Bi_2O_3 \cdot 3WO_3$	-100 mesh to -200 mesh	99.9
Bismuth Vanadate	$BiVO_4$	-200 mesh	99.9
Bismuth Zirconate	$2Bi_2O_3 \cdot 3ZrO_2$	-325 mesh	99

B 5

BORON Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Boron	B	-200 mesh	99 to 99.8
Boron	B	-8, +20 mesh to 5 µm or less	90 to 99.999
Boron Carbide	B_4C	-60 mesh to 1 µm or less	99.5 to 99.8
Boron Nitride	BN	-40 mesh to 1 µm or less	97.5 to 99.5
Boron Oxide	B_2O_3	-40 mesh to -200 mesh	99.9 to 99.99
Boron Silicide	B_3Si	-325 mesh	99.5
Boron Silicide	B_4Si	-200 mesh	98
Boron Silicide	B_6Si	-200 mesh	98

*Purity based on metallic impurities.

Cd 48

CADMIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Cadmium	Cd	-200 mesh to -325 mesh	99.5 to 99.99
Cadmium Antimonide	CdSb	-325 mesh	99.999
Cadmium Arsenide	Cd_3As_2	-325 mesh	99.999
Cadmium Carbonate	$CdCO_3$	-200 mesh	99 to 99.999
Cadmium Chloride	$CdCl_2$	-8 mesh to -10 mesh	99.9 to 99.995
Cadmium Fluoride	CdF_2	-18 mesh to -100 mesh	99.9 to 99.99
Cadmium Iodide	CdI_2	-40 mesh	99.5 to 99.998
Cadmium Molybdate	$CdMoO_4$	-200 mesh	99.9
Cadmium Niobate	$Cd_2Nb_2O_7$	-200 mesh	99.9
Cadmium Nitrate	$Cd(NO_3)_2$-$4H_2O$	-4 mesh	99.999
Cadmium Oxide	CdO	-200 mesh to -425 mesh	99.95 to 99.999
Cadmium Phosphide	Cd_3P_2	-100 mesh	99.5
Cadmium Phosphide	CdP_2	-100 mesh	99.9
Cadmium Selenide	CdSe	-40 mesh to -325 mesh	99.99 to 99.9955
Cadmium Selenite	$CdSeO_3$	-80 mesh	99.5
Cadmium Stannate	Cd_2SnO_4	-200 mesh	99.5
Cadmium Sulfide	CdS	-325 mesh to 10 µm aver. or less	99.5 to 99.999
Cadmium Tantalate	$Cd_2Ta_2O_7$	-200 mesh	99.9
Cadmium Telluride	CdTe	-80 mesh to -325 mesh	99 to 99.999
Cadmium Tungstate	$CdWO_4$	-325 mesh	99.95
Cadmium Vanadate	CdV_2O_6	-200 mesh	99.9
Cadmium Zirconate	CdO-ZrO_2	-200 mesh	99.5

Ca 20

CALCIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Calcium	Ca	-6 mesh	99.5
Calcium Aluminum Oxide	$CaAl_2O_4$	-200 mesh	99 to 99.5
Calcium Arsenate	$Ca_3(AsO_4)_2$	-80 mesh	99
Calcium Boride	CaB_6	-100 mesh to -325 mesh	99.5
Calcium Bromide	$CaBr_2$-xH_2O	-80 mesh	95
Calcium Carbonate	$CaCO_3$	-100 mesh to -400 mesh	99 to 99.999
Calcium Chloride	$CaCl_2$	-10 mesh	99.9
Calcium Copper Titanate, CCTO	$CaCu_3Ti_4O_{12}$	-325 mesh	99.95

*Purity based on metallic impurities.

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Calcium Fluoride	CaF_2	-325 mesh, +425 mesh	99 to 99.995
Calcium Iodide	CaI_2	-20 mesh	99.5
Calcium Lanthanum Sulfide	$CaLa_2S_4$	-200 mesh	99.9
Calcium Nitrate	$Ca(NO_3)_2$-$4H_2O$	-4 mesh	99.999
Calcium Nitride	Ca_3N_2	-200 mesh	99
Calcium Oxide	CaO	-50 mesh to -425 mesh	99.5 to 99.99
Calcium Selenide	CaSe	-20 mesh	99.5
Calcium Silicate	Ca_2SiO_4	-325 mesh	99
Calcium Silicate	$CaSiO_3$	-200 mesh	99
Calcium Silicide	$CaSi_2$	-325 mesh	99.5
Calcium Stannate	$CaSnO_3$	-325 mesh	99
Calcium Sulfate	$CaSO_4$	-10 mesh	99.99
Calcium Sulfide	CaS	-325 mesh	99 to 99.99
Calcium Titanate	$CaTiO_3$	-80 mesh to -425 mesh	99 to 99.9
Calcium Tungstate	$CaWO_4$	-325 mesh	99.9
Calcium Vanadate	CaV_2O_6	-325 mesh	99.9
Calcium Zirconate	$CaZrO_3$	-100 mesh to -325 mesh	99

Ce
58

CERIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Cerium	Ce	-40 mesh	99.9
Cerium Boride	CeB_6	-325 mesh	99.5
Cerium Bromide	$CeBr_3$	-20 mesh	99.9
Cerium Chloride	$CeCl_3$	-20 mesh	99.9
Cerium Fluoride	CeF_3	-60 mesh to -325 mesh	99.9 to 99.998
Cerium Hydride	CeH_{2-3}	-40 mesh	99.9
Cerium Iodide	CeI_3	-20 mesh	99.9
Cerium Oxide	CeO_2	-140, +325 mesh to -325 mesh, +10 µm	99.5 to 99.99
Cerium Silicide	$CeSi_2$	-20 mesh	99.5
Cerium Stannate	CeO_2-SnO_2	-325 mesh	99.9
Cerium Sulfide	Ce_2S_3	-325 mesh	99.9
Cerium Titanate	CeO_2-TiO_2	-325 mesh	99.9
Cerium Tungstate	$Ce_2(WO_4)_3$	-200 mesh	99.9
Cerium Vanadate	$CeVO_4$	-200 mesh	99.9
Cerium Zirconate	CeO_2-ZrO_2	-325 mesh	99.5

*Purity based on metallic impurities.

Cs 55

CESIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Cesium Acetate	$CsC_2H_3O_2$	-4 mesh	99.9
Cesium Bromide	CsBr	-4 mesh	99.9 to 99.999
Cesium Carbonate	Cs_2CO_3	-20 mesh	99.9 to 99.996
Cesium Chloride	CsCl	-100 mesh	99.99
Cesium Fluoride	CsF	-4 mesh	99.9
Cesium Hydroxide	$CsOH\text{-}xH_2O$	-4 mesh	99.9
Cesium Iodate	$CsIO_3$	-4 mesh	99.9
Cesium Iodide	CsI	-20 mesh to -100 mesh	99.9 to 99.999
Cesium Molybdate	Cs_2MoO_4	-200 mesh	99.9
Cesium Niobate	$CsNbO_3$	-200 mesh	99.9
Cesium Nitrate	$CsNO_3$	-4 mesh to -20 mesh	99.99 to 99.999
Cesium Perchlorate	$CsClO_4$	-4 mesh	99.9
Cesium Sulfate	Cs_2SO_4	-20 mesh to -100 mesh	99.9
Cesium Tantalate	$CsTaO_3$	-200 mesh	99.9
Cesium Titanate	Cs_2TiO_3	-200 mesh	99.9
Cesium Tungstate	Cs_2WO_4	-200 mesh	99.9
Cesium Vanadate	$CsVO_3$	-100 mesh	99.9
Cesium Zirconate	Cs_2ZrO_3	-200 mesh	99.9

Cr 24

CHROMIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Chromium	Cr	-100 mesh to 10 µm aver. or less	99.2 to 99.99
Chromium Antimonide	CrSb	-100 mesh	99
Chromium Arsenide	Cr_2As	-60 mesh	99
Chromium Boride	CrB	-140, +325 mesh to -325 mesh	99.5
Chromium Boride	CrB_2	-325 mesh	99.5
Chromium Boride	Cr_2B	-325 mesh to -400 mesh	99.5
Chromium Boride	Cr_5B_3	-325 mesh	99.5
Chromium Carbide	Cr_3C_2	-100, +325 mesh to -325 mesh	99 to 99.8
Chromium Carbide	Cr_7C_3	-325 mesh	99.5
Chromium Carbide	$Cr_{23}C_6$	-325 mesh	99.5
Chromium Chloride	$CrCl_2$	-80 mesh to -100 mesh	99.9 to 99.99
Chromium Chloride	$CrCl_3$	-325 mesh	99
Chromium Fluoride	CrF_3	-80 mesh	99.5
Chromium Nitride	CrN	-325 mesh	99.5 to 99.8
Chromium Nitride	Cr_2N	-325 mesh to -425 mesh	99 to 99.5

*Purity based on metallic impurities.

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Chromium Oxide	Cr_2O_3	-20 mesh to 5 µm aver. or less	99 to 99.98
Chromium Phosphide	CrP	-100 mesh	99.5
Chromium Selenide	CrSe	-325 mesh	99.5
Chromium Silicide	Cr_3Si	-140, +325 mesh to -325 mesh	99.5
Chromium Silicide	$CrSi_2$	-200, +325 mesh to -400 mesh	99.5 to 99.9
Chromium Silicide	Cr_5Si_3	-325 mesh	99.5
Chromium Sulfide	Cr_2S_3	-200 mesh	99
Chromium Telluride	Cr_2Te_3	-325 mesh	99.5

Co 27

COBALT Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Cobalt	Co	-500 mesh to 3 µm aver. or less	99.8 to 99.99
Cobalt Antimonide	CoSb	-100 mesh	99.99
Cobalt Arsenide	CoAs	-10 mesh	99.5
Cobalt Boride	Co_2B	-100 mesh to -325 mesh	99 to 99.9
Cobalt Boride	Co_3B	-325 mesh	99.9
Cobalt Bromide	$CoBr_2$	-80 mesh	99.9
Cobalt Carbonate	$CoCO_3$	-325 mesh	99.5
Cobalt Chloride	$CoCl_2$	-80 mesh	99.9
Cobalt Chromium Oxide	$CoCr_2O_4$	-200 mesh	99.5
Cobalt Fluoride	CoF_3	-80 mesh	99.5
Cobalt Fluoride	CoF_2	-80 mesh	99.5
Cobalt Iodide	CoI_2	-60 mesh	99.5
Cobalt Molybdate	$CoMoO_4$	-325 mesh	99.9
Cobalt Oxide	Co_3O_4	-325 mesh to -625 mesh	99.5 to 99.95
Cobalt Oxide	CoO	-425 mesh to -625 mesh	99.95
Cobalt Phosphide	Co_2P	-100 mesh	99
Cobalt Samarium	CoSm	-100 mesh	99.95
Cobalt Silicide	$CoSi_2$	-325 mesh	99 to 99.5
Cobalt Sulfide	CoS	-200 mesh	99.5
Cobalt Sulfide	CoS_2	-200 mesh	99.5
Cobalt Titanate	$CoTiO_3$	-325 mesh	99.9
Cobalt Tungstate	$CoWO_4$	-325 mesh	99.9
Cobalt Zirconate	$CoZrO_3$	-325 mesh	99.5

*Purity based on metallic impurities.

Cu 29

COPPER Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Copper	Cu	-20, +50 mesh to 2-5 µm aver. or less	99 to 99.999
Copper Acetate	$Cu(C_2H_3O_2)_2H_2O$	-4 mesh	99.9
Copper Aluminate	$CuAl_2O_4$	-325 mesh	99.5 to 99.95
Copper Bromide	CuBr	-80 mesh	99 to 99.999
Copper Bromide	$CuBr_2$	-80 mesh	99
Copper Chloride	CuCl	-80 mesh	99 to 99.999
Copper Chloride	$CuCl_2$	-20 mesh	99
Copper Fluoride	CuF_2	-100 mesh	99.5
Copper Gallium Selenide	$CuGaSe_2$	-325 mesh	99.999
Copper Gallium Telluride	$CuGaTe_2$	-325 mesh	99.999
Copper Germanium Selenide	CuGeSe	-100 mesh	99.99
Copper Indium (80/20 at%)	Cu-In	-325 mesh	99.99
Copper Indium Selenide	$CuInSe_2$	-325 mesh	99.9 to 99.999
Copper Indium Sulfide	$CuInS_2$	-325 mesh	99.999
Copper Indium Telluride	$CuInTe_2$	-325 mesh	99.999
Copper Iodide	CuI	-60 mesh to -80 mesh	99 to 99.999
Copper Nitride	Cu_3N	-200 mesh	99.5
Copper Oxide	CuO	-200 mesh to -425 mesh	99.7 to 99.999
Copper Oxide	Cu_2O	-200 mesh	99
Copper Phosphide	Cu_3P	-100 mesh	99.5
Copper Selenide	Cu_2Se	-425 mesh	99.999
Copper Sulfate	$CuSO_4\text{-}5H_2O$	-4 mesh	99.995
Copper Sulfide	CuS	-100 mesh to -325 mesh	99.5 to 99.999
Copper Sulfide	Cu_2S	-80 mesh to -200 mesh	99.5 to 99.99
Copper Telluride	Cu_2Te	-625 mesh	99.99
Copper Telluride	CuTe	-200 mesh	99.99
Copper Titanate	$CuO\text{-}TiO_2$	-325 mesh	99.5
Copper Titanium Selenide	$CuTiSe_2$	-325 mesh	99.999
Copper Titanium Telluride	$CuTiTe_2$	-325 mesh	99.999
Copper Tungstate	$CuWO_4$	-100 mesh to -200 mesh	99.5
Copper Vanadate	CuV_2O_6	-200 mesh	99.5
Copper Zirconate	$CuO\text{-}ZrO_2$	-200 mesh	99.5

*Purity based on metallic impurities.

Dy 66 DYSPROSIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Dysprosium	Dy	-40 mesh to -200 mesh	99.9 to 99.95
Dysprosium Boride	DyB_4 / DyB_6	-60 mesh	99.5
Dysprosium Bromide	$DyBr_3$	-20 mesh	99.9
Dysprosium Chloride	$DyCl_3$	-100 mesh	99.99
Dysprosium Chloride	$DyCl_3$-$6H_2O$	-4 mesh	99.9
Dysprosium Fluoride	DyF_3	-60 mesh to -325 mesh	99.9 to 99.998
Dysprosium Nitride	DyN	-60 mesh	99.9
Dysprosium Oxide	Dy_2O_3	-325 mesh to -425 mesh	99.9 to 99.999
Dysprosium Sulfide	Dy_2S_3	-200 mesh	99.9
Dysprosium Telluride	Dy_2Te_3	-20 mesh	99.9

Er 68 ERBIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Erbium	Er	-40 mesh to -325 mesh	99.9
Erbium Boride	ErB_4	-100 mesh	99.5
Erbium Bromide	$ErBr_3$	-20 mesh	99.9
Erbium Chloride	$ErCl_3$ / $ErCl_3$-$6H_2O$	-4 mesh to -20 mesh	99.9 to 99.99
Erbium Fluoride	ErF_3	-60 mesh to -325 mesh	99.9 to 99.995
Erbium Hydride	ErH_{2-3}	-60 mesh	99.9
Erbium Iodide	ErI_3	-20 mesh	99.9
Erbium Nitride	ErN	-60 mesh	99.9
Erbium Oxide	Er_2O_3	-325 mesh	99.9 to 99.999
Erbium Sulfide	Er_2S_3	-200 mesh	99.9

*Purity based on metallic impurities.

Eu 63

EUROPIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Europium	Eu	-40 mesh	99.9
Europium Boride	EuB_6	-60 mesh	99.5
Europium Chloride	$EuCl_3$ / $EuCl_3$-$6H_2O$	-4 mesh to -20 mesh	99.9
Europium Fluoride	EuF_2 / EuF_3	-60 mesh to -325 mesh	99.9
Europium Hydride	EuH_{2-3}	-60 mesh	99.9
Europium Nitride	EuN	-60 mesh	99.9
Europium Oxide	Eu_2O_3	-325 mesh	99.9 to 99.995
Europium Selenide	EuSe	-100 mesh	99.9
Europium Sulfate	$Eu_2(SO_4)_3$-$8H_2O$	-200 mesh	99.995
Europium Sulfide	EuS	-200 mesh	99.9
Europium Telluride	EuTe	-20 mesh	99.9

Gd 64

GADOLINIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Gadolinium	Gd	-40 mesh	99.9
Gadolinium Boride	GdB_6	-325 mesh	99.5
Gadolinium Chloride	$GdCl_3$ / $GdCl_3$-$6H_2O$	-4 mesh to -20 mesh	99.9
Gadolinium Fluoride	GdF_3	-60 mesh to -325 mesh	99.9
Gadolinium Gallium Oxide (GGG)	$Gd_3Ga_5O_{12}$	-100 mesh	99.9
Gadolinium Hydride	GdH_{2-3}	-60 mesh	99.9
Gadolinium Nitride	GdN	-60 mesh	99.9
Gadolinium Oxide	Gd_2O_3	-325 mesh	99.9 to 99.999
Gadolinium Sulfide	Gd_2S_3	-200 mesh	99.9
Gadolinium Titanate	$Gd_2Ti_2O_7$	-100 mesh	99.9

*Purity based on metallic impurities.

Ga 31 GALLIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Gallium Bromide	$GaBr_3$	-8 mesh	99.999
Gallium Fluoride	GaF_3 / GaF_3-$3H_2O$	-20 mesh to -60 mesh	99.5 to 99.998
Gallium Iodide	GaI_3	-20 mesh	99.999
Gallium Nitride	GaN	-100 mesh	99.9 to 99.995
Gallium Oxide	Ga_2O_3	-325 mesh to -625 mesh	99.995 to 99.9999
Gallium Phosphide	GaP	-100 mesh	99.999
Gallium Selenide	Ga_2Se_3	-160 mesh	99.999
Gallium Sulfide	Ga_2S_3	-100 mesh to -200 mesh	99.95 to 99.999
Gallium Telluride	GaTe	-160 mesh	99.999

Ge 32 GERMANIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Germanium	Ge	-625 mesh	99.999
Germanium Antimony Telluride (GST)	$Ge_2Sb_3Te_5$	-160 mesh to -325 mesh	99.999
Germanium Iodide	GeI_2	-10 mesh to -20 mesh	99.999
Germanium Oxide	GeO_2	-50 mesh to -325 mesh	99.99 to 99.999
Germanium Selenide	GeSe	-160 mesh	99.999
Germanium Sulfide	GeS	-20 mesh to -160 mesh	99.95 to 99.999
Germanium Telluride	GeTe	-200 mesh	99.99 / 99.999

Au 79 GOLD Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Gold	Au	-325 mesh	99.95 to B99.99
Gold Chloride	$AuCl_3$	-8 mesh	99
Gold Oxide	Au_2O_3	-100 mesh	99.5

*Purity based on metallic impurities.

C 6 GRAPHITE Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Graphite	C	-40, +100 mesh to -325 mesh	99.5 to 99.999
Graphite Bromide	C_8Br	-100 mesh	99.9
Graphite Fluoride	$CF_{1.1\text{-}1.5}$	-200 mesh	99.9

Hf 72 HAFNIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Hafnium	Hf	-60, +325 mesh to -325 mesh	99.8 to 99.95
Hafnium Boride	HfB_2	-140, +325 mesh to -425 mesh	99.5 to 99.9
Hafnium Bromide	$HfBr_4$	-20 mesh to -100 mesh	99 to 99.99
Hafnium Carbide	HfC	-325 mesh to -625 mesh	99.5 to 99.9
Hafnium Chloride	$HfCl_4$	-80 mesh to -100 mesh	98.5 to 99.9
Hafnium Fluoride	HfF_4	-60 mesh	99.9
Hafnium Hydride	HfH_2	-325 mesh	99.8
Hafnium Iodide	HfI_4	-60 mesh to -100 mesh	99.5 to 99.9
Hafnium Nitride	HfN	-325 mesh to -625 mesh	99.5 to 99.8
Hafnium Oxide	HfO_2	-325 mesh	99.9 to 99.995
Hafnium Oxide Calcium Oxide (90/10 wt%), (85/15 wt%)	HfO_2-CaO	-140, +325 mesh to -325 mesh, +10 µm	99
Hafnium Oxide Yttrium Oxide (90/10 wt%), (85/15 wt%)	HfO_2-Y_2O_3	-140, +325 mesh to -325 mesh, +10 µm	99
Hafnium Oxychloride	$HfOCl_2$-$8H_2O$	-6 mesh	99 to 99.99
Hafnium Selenide	$HfSe_2$	-325 mesh	99.5
Hafnium Silicide	$HfSi_2$	-100 mesh to -325 mesh	99.5 to 99.8
Hafnium Telluride	$HfTe_2$	-325 mesh	99.5
Hafnium Titanate	$HfTiO_4$	-325 mesh	99.5

*Purity based on metallic impurities.

Ho 67 HOLMIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Holmium	Ho	-40 mesh to -60 mesh	99.9 to 99.95
Holmium Boride	HoB_4	-100 mesh	99.5
Holmium Bromide	$HoBr_3$	-20 mesh	99.9
Holmium Chloride	$HoCl_3$ / $HoCl_3$-$6H_2O$	-4 mesh to -20 mesh	99.9 to 99.99
Holmium Fluoride	HoF_3	-60 mesh to -325 mesh	99.9 to 99.995
Holmium Hydride	HoH_{2-3}	-60 mesh	99.9
Holmium Nitride	HoN	-60 mesh	99.9
Holmium Oxide	Ho_2O_3	-325 mesh	99.9 to 99.999
Holmium Sulfide	Ho_2S_3	-200 mesh	99.9

In 49 INDIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Indium	In	-325 mesh	99.99 to 99.999
Indium Fluoride	InF_3	-40 mesh	99.99
Indium Hydroxide	$In(OH)_3$	-100 mesh	99.99
Indium Iodide	InI / InI_3	-8 mesh to -100 mesh	99.99 to 99.999
Indium Nitride	InN	-100 mesh	99.9 to 99.99
Indium Oxide	In_2O_3	-325 mesh to -1250 mesh	99.99 to 99.999
Indium Selenide	In_2Se_3	-160 mesh to -325 mesh	99.9 to 99.999
Indium Sulfate	$In_2(SO_4)_3$	-80 mesh	99.99
Indium Sulfide	InS / InS_2 / In_2S_3	-100 mesh to -200 mesh	99.9 to 99.999
Indium Telluride	In_2Te_3	-325 mesh	99.999
Indium Tin Oxide, ITO (90/10 w%)	In_2O_3-SnO_2	-325 mesh to -625 mesh	99.99 to 99.999

*Purity based on metallic impurities.

I 53 IODINE Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Iodine	I_2	-4 mesh	99.9 to 99.999
Iodine Oxide	I_2O_5	-80 mesh	99.9

Ir 77 IRIDIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Iridium	Ir	-325 mesh	99.9
Iridium Chloride	$IrCl_3$	-8 mesh	99.5
Iridium Oxide	IrO_2	-325 mesh	99.9

Fe 26 IRON Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Iron	Fe	-100, +200 mesh to 5 µm aver. or less	99.9
Iron Aluminide	$FeAl_3$ / Fe_3Al	-325 mesh	99 to 99.9
Iron Boride	FeB / Fe_2B	-35 mesh to -325 mesh	99 to 99.9
Iron Bromide	$FeBr_2$	-20 mesh to -100 mesh	99.5 to 99.98
Iron Carbide	Fe_3C	-325 mesh	99.5
Iron Chloride	$FeCl_2$	-80 mesh	99.5 to 99.99
Iron Chloride	$FeCl_3$ / $FeCl_3$	-10 mesh to -100 mesh	99.5 to 99.99
Iron Fluoride	FeF_2 / FeF_3	-80 mesh	99.5
Iron Iodide	FeI_2	-60 mesh	99.5
Iron Nitride	FeN	-325 mesh	99.9
Iron Oxide	FeO / Fe_2O_3 / Fe_3O_4	-10 mesh to 5 µm aver. or less	99.5 to 99.997
Iron Phosphide	FeP / Fe_2P / Fe_3P	-40 mesh to -200 mesh	99.5
Iron Selenide	FeSe	-40 mesh	99.9
Iron Silicide	FeSi / $FeSi_2$	-20 mesh to -100 mesh	99.95 to 99.99
Iron Sulfide	FeS / FeS_2	-100 mesh	99.9
Iron Titanate	Fe_2TiO_5 / $FeTiO_3$	-100 mesh	99.9
Iron Tungstate	$FeWO_4$	-200 mesh	99.5
Iron Zirconate	Fe_2O_3-ZrO_2	-200 mesh	99.7

*Purity based on metallic impurities.

La 57

LANTHANUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Lanthanum	La	-40 mesh to -200 mesh	99.9
Lathanum Aluminate	$LaAlO_3$	-50 mesh to -325 mesh	99.9
Lanthanum Boride	LaB_6	-325 mesh	99.5 to 99.9
Lanthanum Boride	LaB_6	-100 mesh	99.95
Lanthanum Bromide	$LaBr_3$	-10 mesh	99.9
Lanthanum Chloride	$LaCl_3$ / $LaCl_3$-$7H_2O$	-4 mesh to -20 mesh	99.9
Lanthanum Chromite	$LaCrO_3$	-200 mesh	99.9
Lanthanum Fluoride	LaF_3	-60 mesh to -325 mesh	99.9 to 99.995
Lanthanum Iodide	LaI_3	-10 mesh	99.9
Lanthanum Nickel	$LaNi_5$	-100 mesh to -200 mesh	99.5 to 99.9
Lanthanum Nitride	LaN	-60 mesh	99.5 to 99.9
Lanthanum Oxide	La_2O_3	-200 mesh to -400 mesh	99.99 to 99.999
Lanthanum Oxysulfide	La_2O_2S	-200 mesh	99.9
Lanthanum Sulfide	LaS_2 / La_2S_3	-200 mesh	99.9

Pb 82

LEAD Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Lead	Pb	-80, +140 mesh to 5 µm aver. or less	99.9 to 99.999
Lead Acetate	$Pb(C_2H_3O_2)_2$	-8 mesh	99.999
Lead Bromide	$PbBr_2$	-80 mesh	99.9 to 99.999
Lead Carbonate	$2PbCO_3$-$Pb(OH)_2$	-100 mesh	99.9
Lead Chloride	$PbCl_2$	-80 mesh	99.9 to 99.999
Lead Fluoride	PbF_2	-100 mesh to -325 mesh	99.99 to 99.995
Lead Iodate	$Pb(IO_3)_2$	-60 mesh	99.9
Lead Iodide	PbI_2	-100 mesh	99.9 to 99.999
Lead Molybdate	$PbMoO_4$	-100 mesh to -200 mesh	99 to 99.999
Lead Niobate	$PbNb_2O_6$	-200 mesh	99.9
Lead Nitrate	$Pb(NO_3)_2$	-50 mesh	99.999
Lead Oxide	PbO / PbO_2 / Pb_3O_4	-100 mesh to -425 mesh	99.9 to 99.999
Lead Selenide	PbSe	-180 mesh to -325 mesh	99.99 to 99.999
Lead Sulfide	PbS	-200 mesh	99.99
Lead Tantalate	$PbTa_2O_6$	-200 mesh	99.9
Lead Telluride	PbTe	-325 mesh	99 to 99.999
Lead Titanate	$PbTiO_3$	-325 mesh	99.9
Lead Tungstate	$PbWO_4$	-200 mesh	99.9
Lead Zirconate	$PbZrO_3$	-325 mesh	99.7

*Purity based on metallic impurities.

Li 3

LITHIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Lithium Aluminate	$LiAlO_2$	-100 mesh	99.95
Lithium Aluminum Hydride	$LiAlH_4$	-10 mesh	98
Lithium Borate	$Li_2B_4O_7$	-100 mesh	99.95
Lithium Borate	$LiBo_2$	-80 mesh to -100 mesh	99.9 to 99.95
Lithium Carbonate	Li_2CO_3	-100 mesh to -325 mesh	99.9 to 99.999
Lithium Chloride	LiCl	-20 mesh to -100 mesh	99.8 to 99.995
Lithium Cobalt Oxide	$LiCoO_2$	-325 mesh / -425 mesh	99.5
Lithium Fluoride	LiF	-325 mesh	99.9 to 99.99
Lithium Hydride	LiH	-8 mesh	99.9
Lithium Hydroxide	$LiOH\text{-}H_2O$	-100 mesh	99.9
Lithium Iodate	$LiIO_3$	-80 mesh	99.9
Lithium Iodide	LiI	-100 mesh	99.95
Lithium Manganese Oxide	$LiMn_2O_4$	-325 mesh	99.5
Lithium Molybdate	Li_2MoO_4	-200 mesh	99.9
Lithium Niobate	$LiNbO_3$	-200 mesh to -325 mesh	99.9 to 99.95
Lithium Nitrate	$LiNO_3$	-4 mesh to -40 mesh	99.9 to 99.995
Lithium Nitride	Li_3N	-60 mesh	99.5
Lithium Oxide	Li_2O	-100 mesh	99.5 to 99.9
Lithium Peroxide	Li_2O_2	-100 mesh	99.5
Lithium Phosphate	Li_3PO_4	-325 mesh	99 to 99.99
Lithium Selenide	Li_2Se	-100 mesh	99.5 to 99.9
Lithium Selenite	Li_2SeO_3	-100 mesh	99.5
Lithium Silicate	Li_2SiO_3 / Li_4SiO_4	-100 mesh	99.5
Lithium Sulfide	Li_2S	-200 mesh	99.9
Lithium Tantalate	$LiTaO_3$	-50 mesh to -200 mesh	99.9 to 99.99
Lithium Tellurite	Li_2TeO_3	-100 mesh	99.5
Lithium Tungstate	Li_2WO_4	-100 mesh	99.9
Lithium Vanadate	$LiVO_3$	-100 mesh	99.9
Lithium Zirconate	Li_2ZrO_3	-80 mesh	99

*Purity based on metallic impurities.

Lu 71 LUTETIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Lutetium	Lu	-40 mesh to -325 mesh	99.9 to 99.99
Lutetium Boride	LuB_4	-100 mesh	99.5
Lutetium Bromide	$LuBr_3$	-20 mesh	99.9
Lutetium Chloride	$LuCl_3$	-20 mesh	99.9 to 99.99
Lutetium Chloride	$LuCl_3$-$6H_2O$	-4 mesh	99.9
Lutetium Fluoride	LuF_3	-325 mesh	99.9 to 99.995
Lutetium Hydride	LuH_{2-3}	-60 mesh	99.9
Lutetium Nitride	LuN	-60 mesh	99.9
Lutetium Oxide	Lu_2O_3	-325 mesh to -425 mesh	99 to 99.999
Lutetium Sulfide	Lu_2S_3	-200 mesh	99.9 to 99.995
Lutetium Telluride	Lu_2Te_3	-20 mesh to -60 mesh	99.9 to 99.999

Mg 12 MAGNESIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Magnesium	Mg	-100, +200 mesh to -325 mesh	99.6
Magnesium Aluminum Oxide	$MgAl_2O_4$	-325 mesh to -425 mesh	99 to 99.995
Magnesium Boride	MgB_2	-100 mesh	99 to 99.9
Magnesium Bromide	$MgBr_2$	-40 mesh	99
Magnesium Chloride	$MgCl_2$	-100 mesh to -325 mesh	99 to 99.9
Magnesium Fluoride	MgF_2	-200 mesh to -325 mesh	99.5 to 99.995
Magnesium Germanide	Mg_2Ge	-325 mesh	99.99
Magnesium Iodide	MgI_2	-10 mesh	99.99
Magnesium Molybdate	$MgMoO_4$	-200 mesh	99.9
Magnesium Niobate	$MgNb_2O_6$	-200 mesh	99.9
Magnesium Nitride	Mg_3N_2	-325 mesh	99.5 to 99.9
Magnesium Oxide	MgO	-22 mesh to -425 mesh	95 to 99.998
Magnesium Silicate	Mg_2SiO_4	-325 mesh	99
Magnesium Silicide	Mg_2Si	-20 mesh to -325 mesh	99.5 to 99.999
Magnesium Stannate	$MgSnO_3$	-325 mesh	99.9
Magnesium Stannide	Mg_2Sn	-20 mesh	99.99
Magnesium Sulfate	$MgSO_4$	-20 mesh	99.9
Magnesium Tantalate	$MgTa_2O_6$	-200 mesh	99.9
Magnesium Titanate	$MgTiO_3$ / $MgTi_2O_5$	-325 mesh	99 to 99.9
Magnesium Tungstate	$MgWO_4$	-325 mesh	99.9
Magnesium Vanadate	MgV_2O_6	-325 mesh	99.9
Magnesium Zirconate	MgO-ZrO_2	-100, +200 mesh to -325 mesh, +10 µm	99

*Purity based on metallic impurities.

Mn 25

MANGANESE Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Manganese	Mn	-100, +200 mesh to -400 mesh	99.6 to 99.99
Manganese Antimonide	Mn_2Sb	-100 mesh	99.5
Manganese Boride	MnB / MnB_2	-80 mesh to -200 mesh	99
Manganese Bromide	$MnBr_2$	-80 mesh	99.5
Manganese Carbide	$Mn_{23}C_6$ / $Mn_{23}C_7$	-80 mesh to -180 mesh	99.5
Manganese Carbonate	$MnCO_3$	-200 mesh	99.95
Manganese Chloride	$MnCl_2$	-80 mesh to -325 mesh	99 to 99.9
Manganese Fluoride	MnF_2 / MnF_3	-60 mesh to -80 mesh	99.5
Manganese Iodide	MnI_2	-60 mesh	99.5
Manganese Molybdate	$MnMoO_4$	-200 mesh	99.9
Manganese Niobate	$MnNb_2O_6$	-200 mesh	99.9
Manganese Nitride	$Mn_{2-4}N$	-200 mesh	99.9
Manganese Oxide	MnO	-325 mesh	99.5
Manganese Oxide	MnO_2	-325 mesh	99.9
Manganese Oxide	Mn_2O_3	-325 mesh	99.9
Manganese Oxide	Mn_3O_4	10 µm aver. or less	99
Manganese Phosphide	Mn_3P_2	-100 mesh	99
Manganese Selenide	MnSe	-20 mesh	99.9
Manganese Silicide	$MnSi_2$	-325 mesh	99.5
Manganese Titanate	$MnTiO_3$	-100 mesh	99.9
Manganese Tungstate	$MnWO_4$	-200 mesh	99.9
Manganese Zirconate	MnO-ZrO_2	-200 mesh	99.5

Mo 42

MOLYBDENUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Molybdenum	Mo	-140, +325 mesh to 2-4 µm aver. or less	99.9 to 99.95
Molybdenum Aluminide	Mo_3Al	-140, +325 mesh to -325 mesh	99.5
Molybdenum Boride	MoB / Mo_2B / Mo_2B_5	-325 mesh to - 425 mesh	99 to 99.5
Molybdenum Carbide	Mo_2C	-325 mesh to -400 mesh	99.5
Molybdenum Chloride	$MoCl_2$ / $MoCl_3$ / $MoCl_5$	-8 mesh to -100 mesh	99.5
Molybdenum Oxide	MoO_2 / MoO_3	-40 mesh to -200 mesh	99.9 to 99.995
Molybdenum Phosphide	MoP	-200 mesh	99.5
Molybdenum Selenide	$MoSe_2$	-325 mesh	99.9
Molybdenum Silicide	$MoSi_2$	-200, +325 mesh to -325 mesh, +10 µm	99.5
Molybdenum Sulfide	MoS_2	-425 mesh to 1 µm aver. or less	99 to 99.9
Molybdenum Telluride	$MoTe_2$	10 µm aver. or less	99.9

*Purity based on metallic impurities.

Nd 60 NEODYMIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Neodymium	Nd	-40 mesh to -200 mesh	99.9
Neodymium Boride	NdB_6	-200 mesh to -325 mesh	99.5
Neodymium Bromide	$NdBr_3$	-20 mesh	99.9
Neodymium Chloride	$NdCl_3$	-4 mesh to -20 mesh	99.9 to 99.99
Neodymium Fluoride	NdF_3	-60 mesh to -325 mesh	99.9 to 99.995
Neodymium Gallate	$NdGaO_3$	-200 mesh	99.9
Neodymium Hydride	NdH_{2-3}	-60 mesh	99.9
Neodymium Iodide	NdI_3	-10 mesh	99.9
Neodymium Nitride	NdN	-60 mesh	99.9
Neodymium Oxide	Nd_2O_3	-325 mesh to -425 mesh	99.9 to 99.999
Neodymium Silicide	$NdSi_2$	-325 mesh	99.5
Neodymium Sulfide	Nd_2S_3	-200 mesh	99.9
Neodymium Telluride	Nd_2Te_3	-20 mesh	99.9

Ni 28 NICKEL Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Nickel	Ni	-20, +50 mesh to 1 µm aver. or less	99.9 to 99.95
Nickel Aluminide	$NiAl_3$	-20 mesh to -325 mesh	99.9
Nickel Aluminide	NiAl	-100 mesh	99.9
Nickel Aluminum (95/5 wt%)	Ni-Al	-170, +325 mesh	99.5
Nickel Boride	NiB / Ni_2B / Ni_3B	-35 mesh to -325 mesh	99 to 99.5
Nickel Bromide	$NiBr_2$	-60 mesh	99.5 to 99.9
Nickel Carbonate	$NiCO_3$	-325 mesh	99.5
Nickel Chloride	$NiCl_2$	-10 mesh to -60 mesh	99.5 to 99.999
Nickel Chromium Oxide	$NiCr_2O_4$	-100 mesh	99 to 99.9
Nickel Cobalt Oxide	$NiCoO_2$	-325 mesh	99.5
Nickel Chromium (80/20 wt%)	Ni-Cr	-140, +325 mesh to -325 mesh	97 to 99.98
Nickel Fluoride	NiF_2	-100 mesh	99.5
Nickel Iodide	NiI_2	-60 mesh	99.5
Nickel Molybdate	$NiMoO_4$	-325 mesh	99
Nickel Oxide	NiO	-100 mesh to -325 mesh	99 to 99.995
Nickel Phosphide	Ni_2P	-100 mesh	99.5
Nickel Selenide	NiSe	-200 mesh	99.95
Nickel Silicide	$NiSi_2$ / Ni_2Si	-20 mesh to -325 mesh	99 to 99.5
Nickel Silicon (62/38 wt%)	Ni-Si	-325 mesh	99.5
Nickel Sulfide	NiS	-200 mesh	99.9
Nickel Titanate	$NiTiO_3$	-325 mesh	99.9
Nickel Tungstate	$NiWO_4$	-325 mesh	99.9 to 99.95

*Purity based on metallic impurities.

Nb 41 NIOBIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Niobium	Nb	-80, +200 mesh to 10 µm aver. or less	99.8 to 99.99
Niobium Aluminide	$NbAl_3$ / Nb_3Al	-100 mesh to -325 mesh	99.5
Niobium Boride	NbB / NbB_2	-100 mesh to -400 mesh	99.5 to 99.8
Niobium Bromide	$NbBr_5$	-100 mesh	99.9
Niobium Carbide	NbC / Nb_2C	-325 mesh to -400 mesh	99.5
Niobium Chloride	$NbCl_5$	-100 mesh	99.95 to 99.99
Niobium Chromide	$NbCr_2$	-325 mesh	99.5
Niobium Fluoride	NbF_5	-80 mesh	99.5
Niobium Gallide	$NbGa_3$	-100 mesh	99.5
Niobium Germanide	Nb_3Ge	-100 mesh	99.5
Niobim Hydride	NbH_x	-325 mesh	99.5
Niobium Nitride	NbN	-325 mesh to -400 mesh	99.5
Niobium Oxide	NbO / Nb_2O_5	-100 mesh to 10 µm aver. or less	99.9 to 99.998
Niobium Phosphide	NbP	-200 mesh	99.5
Niobium Selenide	$NbSe_2$	5 µm aver. or less	99.8
Niobium Silicide	$NbSi_2$ / Nb_5Si_3	-325 mesh to -400 mesh	99.5 to 99.9
Niobium Stannide	$NbSn_2$ / Nb_3Sn	-100 mesh	99.5
Niobium Telluride	$NbTe_2$	-325 mesh	99.8

Pd 46 PALLADIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Palladium	Pd	-325 mesh	99.95
Palladium Chloride	$PdCl_2$	-8 mesh	99.9
Palladium Oxide	PdO	-20 mesh	99.95

P 15 PHOSPHORUS Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Phosphorus	P	-100 mesh	99.5
Phosphorus Bromide	PBr_5	-60 mesh	99.9
Phosphorus Chloride	PCl_5	-60 mesh	99.9
Phosphorus Oxide	P_2O_5	-100 mesh	99.9 to 99.995

*Purity based on metallic impurities.

Pt 78

PLATINUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Platinum	Pt	-325 mesh	99.9
Platinum Chloride	$PtCl_2$	-8 mesh / -10 mesh	99.9
Platinum Oxide	PtO_2-H_2O	-100 mesh	99.9

K 19

POTASSIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Potassium Borate	$K_2B_4O_7$-H_2O	-6 mesh	99.9
Potassium Borohydride	KBH_4	-80 mesh	98
Potassium Bromide	KBr	-10 mesh	99.9
Potassium Carbonate	K_2CO_3	-10 mesh to -20 mesh	99.9 to 99.999
Potassium Chloride	KCl	-10 mesh to -20 mesh	99.999
Potassium Fluoride	KF	-60 mesh	99.9
Potassium Hexafluoroantimonate	$KSbF_6$	-6 mesh	99.9
Potassium Iodate	KIO_3 / KIO_4	-80 mesh to -40 mesh	99.9
Potassium Iodide	KI	-10 mesh to -20 mesh	99.9 to 99.999
Potassium Molybdate	K_2MoO_4	-200 mesh to -325 mesh	99 to 99.9
Potassium Niobate	$KNbO_3$	-100 mesh	99.9
Potassium Perrhenate	$KReO_4$	-40 mesh	99.9
Potassium Persulfate	$K_2S_2O_8$	-100 mesh	99.9
Potassium Selenate	K_2SeO_4	-100 mesh	99.5
Potassium Selenite	K_2SeO_3	-100 mesh	99.5
Potassium Tantalate	$KTaO_3$	-100 mesh	99.9
Potassium Tellurite	K_2TeO_3	-100 mesh	99.5
Potassium Tungstate	K_2WO_4	-100 mesh	99.5
Potassium Vanadate	KVO_3 / K_3VO_4 / $K_4V_2O_7$	-200 mesh	99.9
Potassium Zirconate	K_2ZrO_3	-200 mesh	99.5

*Purity based on metallic impurities.

Pr 59

PRASEODYMIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Praseodymium	Pr	-40 mesh to -60 mesh	99.9
Praseodymium Boride	PrB_6	-325 mesh	99.5
Praseodymium Bromide	$PrBr_3$	-20 mesh	99.9
Praseodymium Chloride	$PrCl_3$	-10 mesh to -100 mesh	99.9
Praseodymium Fluoride	PrF_3	-60 mesh to -325 mesh	99.9
Praseodymium Hydride	PrH_{2-3}	-60 mesh	99.9
Praseodymium Nitride	PrN	-60 mesh	99.9
Praseodymium Oxide	Pr_2O_3 / Pr_6O_{11}	-325 mesh	99.9 to 99.999
Praseodymium Silicide	$PrSi_2$	-100 mesh to -325 mesh	99.5 to 99.9
Praseodymium Telluride	PrTe	-20 mesh	99.9

Re 75

RHENIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Rhenium	Re	-325 mesh	99.95 to 99.99
Rhenium Boride	ReB	-100 mesh	99.5
Rhenium Chloride	$ReCl_3$ / $ReCl_4$ / $ReCl_5$	-40 mesh to -80 mesh	99.9
Rhenium Iodide	ReI_3	-80 mesh	99.9
Rhenium Oxide	ReO_2 / Re_2O_7	-6 mesh to -100 mesh	99.95 to 99.99
Rhenium Selenide	$ReSe_2$	-100 mesh	99.9
Rhenium Silicide	$ReSi_2$	-80 mesh	99.9
Rhenium Sulfide	ReS_2	-80 mesh	99.9
Rhenium Telluride	$ReTe_2$	-60 mesh	99.9

Rh 45

RHODIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Rhodium	Rh	-325 mesh	99.8 / 99.95

*Purity based on metallic impurities.

Rb 37

RUBIDIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Rubidium Bromide	RbBr	-4 mesh	99.9
Rubidium Carbonate	Rb_2CO_3	-20 mesh to -100 mesh	99.8 to 99.99
Rubidium Chloride	RbCl	-4 mesh to -20 mesh	99.9 to 99.99
Rubidium Chromate	Rb_2CrO_4	-20 mesh	99.9
Rubidium Fluoride	RbF	-4 mesh to -325 mesh	99.9 to 99.99
Rubidium Hydroxide	$RbOH-H_2O$	-4 mesh	99.7
Rubidium Iodate	$RbIO_3$	-4 mesh	99.9
Rubidium Iodide	RbI	-4 mesh to -20 mesh	99.9 to 99.99
Rubidium Molybdate	Rb_2MoO_4	-200 mesh	99.5 to 99.9
Rubidium Niobate	$RbNbO_3$	-200 mesh	99.5
Rubidium Nitrate	$RbNO_3$	-10 mesh to -20 mesh	99.9 to 99.95
Rubidium Perchlorate	$RbClO_4$	-4 mesh	99.9
Rubidium Phosphate	$RbPO_3$	-325 mesh	99.9 to 99.95
Rubidium Selenide	Rb_2Se	-60 mesh to -100 mesh	99.5 to 99.995
Rubidium Sulfate	Rb_2SO_4	-20 mesh	99.9
Rubidium Tantalate	$RbTaO_3$	-200 mesh	99.5
Rubidium Tungstate	Rb_2WO_4	-200 mesh	99.5
Rubidium Vanadate	$RbVO_3$ / $Rb_4V_2O_7$	-100 mesh to -325 mesh	99.5

Ru 44

RUTHENIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Ruthenium	Ru	-325 mesh	99.95 to 99.99
Ruthenium Bromide	$RuBr_3$	-325 mesh	99.99
Ruthenium Chloride	$RuCl_3$	-100 mesh	99.9 to 99.95
Ruthenium Oxide	RuO_2	-100 mesh to -325 mesh	99.9 to 99.99

*Purity based on metallic impurities.

Sm 62

SAMARIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Samarium	Sm	-200 mesh	99.9
Samarium Boride	SmB_6	-325 mesh	99.5
Samarium Bromide	$SmBr_3$	-20 mesh	99.9
Samarium Chloride	$SmCl_3$	-4 mesh to -20 mesh	99.9 to 99.99
Samarium Fluoride	SmF_3	-60 mesh to -325 mesh	99.9 to 99.995
Samarium Iodide	SmI_2	-20 mesh	99.9
Samarium Nitride	SmN	-60 mesh	99.9
Samarium Oxide	Sm_2O_3	-325 mesh, -400 mesh	99.9 to 99.995
Samarium Sulfide	Sm_2S_3	-200 mesh	99.9
Samarium Telluride	Sm_2Te_3	-20 mesh	99.9
Samarium Cobalt	Sm_2Co_5 / Sm_2Co_7	-100 mesh to -400 mesh	99.5 to 99.95

Sc 21

SCANDIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Scandium	Sc	-40 mesh to -325 mesh	99.9 to 99.95
Scandium Boride	ScB_2	-200 mesh	99.5
Scandium Chloride	$ScCl_3$	-20 mesh	99.9
Scandium Fluoride	ScF_3	-200 mesh	99.9
Scandium Iodide	ScI_3	-20 mesh	99.9
Scandium Oxide	Sc_2O_3	-325 mesh	99.99
Scandium Sulfide	Sc_2S_3	-200 mesh	99.9

Se 34

SELENIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Selenium	Se	-20 mesh to -200 mesh	99.6 to 99.999
Selenium Bromide	$SeBr_4$	-8 mesh	99.5
Selenium Chloride	$SeCl_4$	-8 mesh	99.8
Selenium Oxide	SeO_2	-20 mesh to -425 mesh	99.5 to 99.999

*Purity based on metallic impurities.

Si 14 SILICON Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Silicon	Si	-20 mesh to 10 µm aver. or less	98 to 99.999
Silicon Boride	SiB_4 / SiB_6	-325 mesh	99.5
Silicon Carbide	SiC	-325 mesh to 1 µm aver. or less	99.5 to 99.9
Silicon Dioxide	SiO_2	-10 mesh to -400 mesh	99.5 to 99.999
Silicon Iodide	SiI_4	-8 mesh	99.9
Silicon Monoxide	SiO	-325 mesh to -400 mesh	99.9 to 99.99
Silicon Nitride	Si_3N_4 (90% alpha phase)	-325 mesh to -400 mesh	98 to 99.9

Ag 47 SILVER Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Silver	Ag	-20 mesh to 1 µm aver. or less	99.99 to 99.999
Silver Bromide	AgBr	-20 mesh	99.9 to 99.999
Silver Chloride	AgCl	-20 mesh to -100 mesh	99.9 to 99.999
Silver Fluoride	AgF_2	-40 mesh	99.5
Silver Gallium Selenide	$AgGaSe_2$	-325 mesh	99.999
Silver Gallium Telluride	$AgGaTe_2$	-325 mesh	99.999
Silver Hexafluoroantimonate	$AgSbF_6$	-6 mesh	99.9
Silver Hexafluorophosphate	$AgPF_6$	-6 mesh	99.9
Silver Indium Selenide	$AgInSe_2$	-325 mesh	99.999
Silver Indium Sulfide	$AgInS_2$	-180 mesh	99.999
Silver Iodide	AgI	-20 mesh	99.9 to 99.999
Silver Nitrate	$AgNO_3$	-10 mesh	99.9 to 99.999
Silver Oxide	Ag_2O	-80 mesh	99.5
Silver Sulfide	Ag_2S	-100 mesh	99.9 to 99.999
Silver Titanium Selenide	$AgTiSe_2$	-325 mesh	99.999
Silver Titanium Telluride	$AgTiTe_2$	-325 mesh	99.999

*Purity based on metallic impurities.

Na 11

SODIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Sodium Aluminum Fluoride	$Na_5Al_3F_{14}$	-325 mesh	99.5
Sodium Antimonate	$NaSb(OH)_6$	-200 mesh	99.9
Sodium Borohydride	$NaBH_4$	-80 mesh	98
Sodium Carbonate	Na_2CO_3	-20 mesh	99.9 to 99.999
Sodium Chloride	NaCl	-30 mesh to -40 mesh	99.995 to 99.998
Sodium Fluoride	NaF	-200 mesh to -425 mesh	99 to 99.99
Sodium Iodide	NaI	-20 mesh	99.9
Sodium Molybdate	Na_2MoO_4	-200 mesh	99.9
Sodium Niobate	$NaNbO_3$	-100 mesh	99.9
Sodium Selenate	Na_2SeO_4	-100 mesh	99.5
Sodium Selenide	Na_2Se	-60 mesh	99.9 to 99.99
Sodium Selenite	Na_2SeO_3	-100 mesh	99.5
Sodium Stannate	$Na_2Sn(OH)_6$	-100 mesh	99.9
Sodium Sulfide	Na_2S	-100 mesh	99.9
Sodium Tantalate	$NaTaO_3$	-100 mesh	99.9
Sodium Tellurate	$Na_2H_4TeO_6$	-100 mesh	99.5
Sodium Telluride	Na_2Te	-60 mesh	99.9
Sodium Tellurite	Na_2TeO_3	-100 mesh	99.5
Sodium Titanate	$Na_2Ti_3O_7$	-200 mesh	99.9
Sodium Tungstate	Na_2WO_4	-200 mesh	99.9
Sodium Vanadate	$NaVO_3$ / Na_3VO_4	-200 mesh	99.9
Sodium Zirconate	Na_2ZrO_3	-200 mesh	99.5

Sr 38

STRONTIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Strontium Aluminate	$SrAl_2O_4$	-100 mesh	99.5
Strontium Boride	SrB_6	-325 mesh	99.5
Strontium Bromide	$SrBr_2$	-20 mesh	99.5
Strontium Carbide	SrC_2	-8 mesh	99
Strontium Carbonate	$SrCO_3$	-10 mesh to -200 mesh	99.5 to 99.995
Strontium Chloride	$SrCl_2$	-40 mesh	99.5

*Purity based on metallic impurities.

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Strontium Ferrite	$SrFe_{12}O_{19}$	-325 mesh	99.5
Strontium Fluoride	SrF_2	-100 mesh to -325 mesh	99.9 to 99.99
Strontium Hydride	SrH_2	-60 mesh	99.5
Strontium Molybdate	$SrMoO_4$	-200 mesh to -325 mesh	99.9 to 99.99
Strontium Niobate	$SrNb_2O_6$	-200 mesh	99.9
Strontium Nitrate	$Sr(NO_3)_2$	-8 mesh	99.995
Strontium Oxide	SrO	-100 mesh	99.5
Strontium Selenide	SrSe	-20 mesh	99.5
Strontium Stannate	$SrSnO_3$	-200 mesh	99.5
Strontium Sulfide	SrS	-100 mesh to -200 mesh	99.9 to 99.995
Strontium Tantalate	$SrTa_2O_6$	-200 mesh	99.9
Strontium Telluride	SrTe	-20 mesh	99.5
Strontium Titanate	$SrTiO_3$	-200 mesh to -325 mesh	99.9 to 99.95
Strontium Tungstate	$SrWO_4$	-200 mesh	99.9
Strontium Zirconate	$SrZrO_3$	-100, +200 mesh to -325 mesh, +10 µm	99.5

Ta 73 TANTALUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Tantalum	Ta	-140, +325 mesh to 2 µm aver. or less	99.9 to 99.995
Tantalum Aluminide	$TaAl_3$ / Ta_3Al	-80 mesh to -400 mesh	99.5 to 99.95
Tantalum Boride	TaB / TaB_2	-325 mesh	99.5
Tantalum Bromide	$TaBr_5$	-8 mesh to -10 mesh	99.9 to 99.99
Tantalum Carbide	TaC / Ta_2C	-20, +325 mesh to -425 mesh	99.5
Tantalum Chloride	$TaCl_5$	-4 mesh / -20 mesh	99.99
Tantalum Fluoride	TaF_5	-4 mesh	99.9
Tantalum Nitride	TaN	-400 mesh	99.9
Tantalum Oxide	Ta_2O_5	-325 mesh to 5 µm aver. or less	99.5 to 99.995
Tantalum Phosphide	TaP	-100 mesh	99.5 to 99.95
Tantalum Selenide	$TaSe_2$	-325 mesh	99.8
Tantalum Silicide	TaSi / $TaSi_2$ / Ta_5Si_3	-100 mesh to -325 mesh	99.5 to 99.99
Tantalum Sulfide	TaS_2	-325 mesh	99.9 to 99.99
Tantalum Telluride	$TaTe_2$	-325 mesh	99.8 to 99.99

*Purity based on metallic impurities.

Te 52

TELLURIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Tellurium	Te	-18, +60 mesh to -200 mesh	99.5 to 99.99
Tellurium Bromide	$TeBr_4$	-4 mesh	99.9
Tellurium Chloride	$TeCl_4$	-8 mesh	99.9
Tellurium Iodide	TeI_4	-4 mesh	99.9
Tellurium Oxide	TeO_2 / TeO_3	-60 mesh to -325 mesh	99.9 to 99.999

Tb 65

TERBIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Terbium	Tb	-40 mesh to -325 mesh	99.9
Terbium Boride	TbB_6	-325 mesh	99.5
Terbium Chloride	$TbCl_3$	-4 mesh to -20 mesh	99.9 to 99.99
Terbium Fluoride	TbF_3	-325 mesh	99.9
Terbium Hydride	TbH_{2-3}	-60 mesh	99.9
Terbium Nitride	TbN	-40 mesh / -60 mesh	99.9
Terbium Oxide	Tb_4O_7	-325 mesh to -425 mesh	99.9 to 99.999
Terbium Sulfide	Tb_2S_3	-200 mesh	99.9

Tm 69

THULIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Thulium	Tm	-40 mesh to -325 mesh	99.5 to 99.9
Thulium Bromide	$TmBr_3$	-20 mesh	99.9
Thulium Chloride	$TmCl_3$	-20 mesh	99.9 to 99.99
Thulium Fluoride	TmF_3	-200 mesh	99.9
Thulium Hydride	TmH_{2-3}	-60 mesh	99.9
Thulium Iodide	TmI_3	-20 mesh	99.9
Thulium Nitride	TmN	-60 mesh	99.5 to 99.9
Thulium Oxide	Tm_2O_3	-325 mesh	99.9 to 99.95
Thulium Sulfide	Tm_2S_3	-200 mesh	99.9

*Purity based on metallic impurities.

Sn 50

TIN Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Tin	Sn	-100, +325 mesh to -400 mesh	99.8 to 99.999
Tin Antimonide	SnSb	-180 mesh	99.99
Tin Bromide	$SnBr_2$	-4 mesh	99.5
Tin Chloride	$SnCl_2$ / $SnCl_4$	-8 mesh / -40 mesh	99.999
Tin Fluoride	SnF_2 / SnF_4	-4 mesh to -20 mesh	99 to 99.99
Tin Iodide	SnI_2 / SnI_4	-6 mesh	99.5 to 99.999
Tin Monoxide	SnO / SnO_2	-100 mesh to 1 µm aver. or less	99.9 to 99.999
Tin Oxide Antimony Oxide (90/10 wt%)	SnO_2-Sb_2O_3	-425 mesh	99.999
Tin Oxide Tin Fluoride (FTO) (90/10 wt %)	SnO_2-SnF_2	-425 mesh	99.999
Tin Phosphide	SnP	-100 mesh	99.5
Tin Selenide	SnSe	-160 mesh	99.99
Tin Sulfide	SnS / SnS_2	-8 mesh to -180 mesh	99.5 to 99.999
Tin Telluride	SnTe	-160 mesh	99.999

Ti 22

TITANIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Titanium	Ti	-40, +325 mesh to 1-3 µm	95 to 99.995
Titanium Aluminide	Ti_3Al / TiAl	-325 mesh to -400 mesh	99.5 to 99.95
Titanium Aluminum Vanadium (90/6/4 wt%)	Ti-Al-V	-200 mesh	99.5
Titanium Boride	TiB_2	-325 mesh to -400 mesh	99.5 to 99.8
Titanium Carbide	TiC	-140, +325 mesh to 2 µm aver. or less	99.5 to 99.9
Titanium Carbonitride	TiCN	-325 mesh / -400 mesh	99.5
Titanium Fluoride	TiF_3 / TiF_4	-325 mesh	99
Titanium Hydride	TiH_2	-325 mesh	99
Titanium Iodide	TiI_4	-20 mesh	99.99
Titanium Nitride	TiN	-100, +325 mesh to -400 mesh	99.5 to 99.9
Titanium Oxide	TiO / TiO_2 / Ti_2O_3	-100 mesh to -400 mesh	99 to 99.999
Titanium Phosphide	TiP	-100 mesh	97
Titanium Selenide	$TiSe_2$	-325 mesh	99.5
Titanium Silicide	$TiSi_2$ / Ti_5Si_3	-100, +325 mesh to -400 mesh	99.5
Titanium Sulfide	TiS_2	-200 mesh	99.8
Titanium Telluride	$TiTe_2$	-325 mesh	99.5

*Purity based on metallic impurities.

W 74

TUNGSTEN Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Tungsten	W	-10, +60 mesh to 1-2 µm aver. or less	99.8 to 99.999
Tungsten Boride	WB / W_2B / W_2B_5	-325 mesh	99.5
Tungsten Carbide	WC / W_2C	-325 mesh, +10 µm to 1 µm aver. or less	99.5 to 99.9
Tungsten Carbide Cobalt (94/6 w%)	WC-Co	-325 mesh	99
Tungsten Carbide Cobalt (88/12 wt%)	(WC,W_2C)-Co	-325 mesh, +5 µm	99
Tungsten DiSulfide	WS_2	-425 mesh	99.9
Tungsten Oxide	WO_2 / WO_3	-100 mesh to 5 µm aver. or less	99.9
Tungsten Phosphide	WP	-100 mesh	99.5
Tungsten Rhenium (95/5 wt%)	W-Re	-325 mesh	99.95
Tungsten Selenide	WSe_2	-325 mesh to 5 µm aver. or less	99.8 to 99.9
Tungsten Silicide	WSi_2 / W_5Si_3	-100 mesh to -400 mesh	99.5 to 99.995
Tungsten Sulfide	WS_2	1 µm aver. or less	99.8
Tungsten Telluride	WTe_2	-325 mesh	99.85

V 23

VANADIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Vanadium	V	-325 mesh	99.9
Vanadium Boride	VB / VB_2	-325 mesh to -425 mesh	99.5
Vanadium Bromide	VBr_3	-20 mesh	99.7
Vanadium Carbide	VC	-325 mesh	99.5
Vanadium Chloride	VCl_3	-4 mesh to -425 mesh	99 to 99.9
Vanadium Fluoride	VF_4	-100 mesh	99
Vanadium Gallide	V_3Ga	-100 mesh	99.5
Vanadium Germanide	V_3Ge	-100 mesh	99.5
Vanadium Iodide	VI_2	-6 mesh	99.5
Vanadium Nitride	VN	-325 mesh to -400 mesh	99.5 to 99.9
Vanadium Oxide	VO/VO_2/V_2O_3/V_2O_5/V_6O_{13}	-80 mesh to -325 mesh	99.5 to 99.99
Vanadium Selenide	VSe_2	-325 mesh	99.5
Vanadium Silicide	VSi / VSi_2 / V_3Si	-200 mesh to -425 mesh	99.5
Vanadium Stannide	V_3Sn	-100 mesh	99.5
Vanadium Sulfide	V_2S_3	-325 mesh	99.8
Vanadium Telluride	VTe_2	-325 mesh	99.5

*Purity based on metallic impurities.

Yb 70

YTTERBIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Ytterbium	Yb	-40 mesh to -200 mesh	99.9 to 99.95
Ytterbium Boride	YbB_6	-325 mesh	99.5
Ytterbium Bromide	$YbBr_3$	-20 mesh	99.9
Ytterbium Chloride	$YbCl_3$	-20 mesh	99.9 to 99.99
Ytterbium Fluoride	YbF_3	-60 mesh to -325 mesh	99.9 to 99.995
Ytterbium Hydride	YbH_{2-3}	-60 mesh	99.9
Ytterbium Nitride	YbN	-60 mesh	99.9
Ytterbium Oxide	Yb_2O_3	-325 mesh to -425 mesh	99.9 to 99.995

Y 39

YTTRIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Yttrium	Y	-40 mesh to -425 mesh	99.9 to 99.95
Yttrium Aluminum Oxide (YAG)	$Y_3Al_5O_{12}$	-100 mesh to -325 mesh	99.9 to 99.99
Yttrium Bromide	YBr_3	-10 mesh	99.9
Yttrium Chloride	YCl_2 / YCl_3	-20 mesh to -325 mesh	99 to 99.99
Yttrium Ferrite	$Y_3Fe_5O_{12}$	-200 mesh	99.9
Yttrium Fluoride	YF_3	-60 mesh / -325 mesh	99.9
Yttrium Iodide	YI_3	-20 mesh	99.9
Yttrium Manganate	$YMnO_3$	-100 mesh	99.9
Yttrium Nitrate	$Y(NO_3)_3$-$5H_2O$	-20 mesh	99.9
Yttrium Nitride	YN	-60 mesh	99.9
Yttrium Oxide	Y_2O_3	-140, +325 mesh to -325 mesh	99.9 to 99.9999
Yttrium Silicate	Y_2SiO_5	-400 mesh	99.9
Yttrium Silicide	YSi_2	-325 mesh	99.9
Yttrium Sulfide	Y_2S_3	-200 mesh	99.9
Yttrium Telluride	Y_2Te_3	-20 mesh to -40 mesh	99.9 to 99.995

*Purity based on metallic impurities.

Zn 30

ZINC Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Zinc	Zn	-20 mesh to -400 mesh	99.9 to 99.95
Zinc Aluminum (98/2 wt%)	Zn-Al	-325 mesh	99.999
Zinc Antimonide (98/2 wt%)	Zn-Sb	-200 mesh	99.99
Zinc Arsenide	Zn_3As_2 / $ZnAs_2$	-20 mesh to -325 mesh	99 to 99.999
Zinc Bromide	$ZnBr_2$	-40 mesh	99.5
Zinc Chloride	$ZnCl_2$	-8 mesh to -10 mesh	99.5 to 99.99
Zinc Fluoride	ZnF_2	-4 mesh to -100 mesh	99 to 99.99
Zinc Iodide	ZnI_2	-8 mesh	99.9
Zinc Nitride	Zn_3N_2	-200 mesh	99.9
Zinc Oxide	ZnO	-200 mesh to -325 mesh	99.9 to 99.999
Zinc Phosphide	Zn_3P_2	-180 mesh	99.999
Zinc Selenide	ZnSe	-200 mesh to -325 mesh	99 to 99.999
Zinc Sulfide	ZnS	-200 mesh to 1 µm aver. or less	99 to 99.999
Zinc Telluride	ZnTe	-200 mesh to -325 mesh	99.99 to 99.999
Zinc Titanate	$ZnTiO_3$	-200 mesh	99.9
Zinc Tungstate	$ZnWO_4$	-200 mesh	99.9

Zr 40

ZIRCONIUM Base

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Zirconium	Zr	-50 mesh to 2-5 µm	94 to 99.8
Zirconium Boride	ZrB_2 / ZrB_{12}	-200 mesh to -400 mesh	99.5
Zirconium Boride Molybdenum Silicide (90/10 wt%)	ZrB_2-$MoSi_2$	-100 mesh	99.5
Zirconium Bromide	$ZrBr_4$	-40 mesh	99.8
Zirconium Carbide	ZrC	-140, +325 mesh to -400 mesh	99.5
Zirconium Chloride	$ZrCl_4$	-10 mesh	99.9
Zirconium Disilicide	$ZrSi_2$	-325 mesh	99.9
Zirconium Fluoride	ZrF_4	-4 mesh	99.9 to 99.997
Zirconium Hydride	ZrH_2	-325 mesh	99.7
Zirconium Iodide	ZrI_4	-6 mesh	99.5
Zirconium Nitride	ZrN	-325 mesh to -425 mesh	99.5
Zirconium Oxide	ZrO_2	-325 mesh to 3 µm aver. or less	99 to 99.995
Zirconium Oxide Yttrium Oxide, YSZ (94.8/5.2 at%), (90/10 at%), (87/13 at%), (85/15 at%)	ZrO_2-Y_2O_3	-325 mesh to 3 µm aver. or less	99 to 99.95
Zirconium Phosphide	ZrP	-100 mesh	99.5

*Purity based on metallic impurities.

CHEMICAL	FORMULA	DESCRIPTION	PURITY*
Zirconium Selenide	$ZrSe_2$	-325 mesh	99.5
Zirconium Silicate	$ZrSiO_4$	-200 mesh, +10 µm to -325 mesh	99
Zirconium Silicide	$ZrSi_2$	-325 mesh, -400 mesh	99.5
Zirconium Sulfate	$Zr(SO_4)_2$	-325 mesh	99.9
Zirconium Sulfide	ZrS_2	-200 mesh	99
Zirconium Telluride	$ZrTe_2$	-325 mesh	99.5
Zirconium Titanate	$ZrTiO_4$	-325 mesh	99.5 to 99.9
Zirconium Tungstate	$Zr(WO_4)_2$	-200 mesh	99.7

*Purity based on metallic impurities.

Nanopowders

Nanostructured materials have dimensions typically ranging from 1 to 100 nm. Nanoparticle research is currently an area of intense scientific interest due to a wide variety of potential applications in biomedical, optical and electronic fields.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Aluminum	Al	80	-	99.9
Aluminum	Al	18	40 - 60	99+/99.9
Aluminum Hydroxide	$Al(OH)_3$	50	-	99.5
Aluminum Nitride	AlN	< 50	75/78	99
Aluminum Oxide	Al_2O_3 (alpha phase)	80	< 10	99+
Aluminum Oxide	Al_2O_3 (alpha phase)	200	3.9	99.9
Aluminum Oxide	Al_2O_3 (alpha phase)	150	5 - 15	99.8/99.85/99.97
Aluminum Oxide	Al_2O_3 (alpha phase - contains 5 - 10% gamma phase)	27 - 43	35	99.5
Aluminum Oxide	Al_2O_3 (alpha phase)	~ 100	13 - 15	99.99
Aluminium Oxide	Al_2O_3 (gamma phase)	20	-	99+
Aluminum Oxide	Al_2O_3 (gamma phase)	20 - 30	180	99.97
Aluminum Oxide	Al_2O_3 (gamma phase)	10 - 20	> 160	99
Aluminum Oxide	Al_2O_3 (gamma phase)	20 - 50	> 200	99.9/99.99
Antimony Oxide	Sb_2O_3	90 - 210	15.6	99.9
Antimony Oxide	Sb_2O_3	80	-	99.9
Antimony Tin Oxide, ATO (90/10 wt%)	SnO_2-Sb_2O_3	~ 100	-	99.95

*Purity based on metallic impurities.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Antimony Tin Oxide, ATO (90/10 wt%)	SnO_2-Sb_2O_3	10 - 20	40 - 50	99.95
Barium Ferrite	$BaFe_9O_{12}$	60/500	-	99.5
Barium Titanate	$BaTiO_3$	~ 50	~ 20	99.95
Barium Titanate	$BaTiO_3$	~ 100	> 10	99.9/99.95
Barium Titanate	$BaTiO_3$	500	2.0 - 2.2	99.9
Barium Titanate	$BaTiO_3$	400	2.6 - 2.8	99.9
Barium Titanate	$BaTiO_3$	300	3.5 - 3.7	99.9
Barium Titanate	$BaTiO_3$	200	5.0 - 5.6	99.9
Bismuth Oxide	Bi_2O_3	90 - 210	~ 3.5	99.8+
Bismuth Oxide	Bi_2O_3	200	-	99.9
Boron	B	< 80	-	99.9
Boron Carbide	B_4C	50	> 42	99
Boron Nitride	BN	137	19.4	99
Boron Oxide	B_2O_3	30	-	99.5
Calcium Carbonate	$CaCO_3$	15 - 40	-	97.5
Cerium Oxide	CeO_2	50 - 80	11 - 17	99.97
Cerium Oxide	CeO_2	50 - 105	8 - 15	99.9
Cerium Oxide	CeO_2	15 - 30	30 - 50	99.9
Cesium Dihydrogenphosphate	CsH_2PO_4	45	~ 80	99.5
Chromium	Cr	50	-	99/99.5
Chromium Oxide	Cr_2O_3	60	-	99+/99.9+
Cobalt	Co	28	40 - 60	99.8/99.9
Cobalt Oxide	CoO	50	> 30	99.5
Cobalt Oxide	Co_3O_4	~ 30	> 40	99.8+
Cobalt Oxide	Co_3O_4	50 - 80	~ 10	99
Cobalt Iron Oxide	$CoFe_2O_4$	20 - 50	-	99.9
Cobalt Iron Oxide	$CoFe_2O_4$	35 - 55	-	98
Cobalt Nickel Iron Oxide	$Co_{0.5}Ni_{0.5}Fe_2O_4$	20 - 50	-	99.9
Cobalt Zinc Iron Oxide	$Co_{0.5}Zn_{0.5}Fe_2O_4$	20 - 50	-	99.9
Cobalt Zinc Iron Oxide	$Co_{0.5}Zn_{0.5}Fe_2O_4$	30 - 50	-	99.5
Copper	Cu	25	30 - 50	99.8/99.9
Copper	Cu	50	-	99.8
Copper	Cu	100	6.8	99.9+
Copper	Cu	500	-	99
Copper	Cu	78	8.46	99.8
Copper Oxide	CuO	40 - 80	-	99.9
Copper Oxide	CuO	12	-	99.5
Copper Oxide	CuO	30 - 50	13.1	99+
Carbon (Diamond)	C	4 - 25	360 - 420	52 - 65
Carbon (Diamond)	C	3 - 6	200 - 450	97
Carbon (Diamond)	C	3 - 5	278 - 335	95+
Carbon (Diamond)	C	6	282.83	98+
Carbon (Graphite)	C	400/1 µm	-	99.9

*Purity based on metallic impurities.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Dysprosium Oxide	Dy_2O_3	55	~ 20	99.9
Dysprosium Oxide	Dy_2O_3	30	-	99.9
Erbium Oxide	Er_2O_3	41 - 53	13 - 17	99.9
Erbium Oxide	Er_2O_3	20 - 30	-	99.9
Europium Oxide	Eu_2O_3	45 - 58	14 - 18	99.99 / 99.995
Europium Oxide	Eu_2O_3	30 - 50	36	99.99
Gadolinium Oxide	Gd_2O_3	20 - 80	10 - 40	99.9+
Gadolinium Oxide	Gd_2O_3	15 - 30	30 - 50	99.9
Gold	Au	50 - 100	3.3	99.99+
Gold	Au	< 100	1.3 - 2.2	99.5+
Hafnium Oxide	HfO_2	100 - 200	-	99.99
Indium Hydroxide	$In(OH)_3$	20 - 70	12.8	99.99
Indium Oxide	In_2O_3	30 - 70	15	99.99
Indium Tin Oxide, ITO (90/10 wt%)	In_2O_3-SnO_2	20 - 70	24	99.99
Indium Tin Oxide, ITO (95/5 wt%)	In_2O_3-SnO_2	30 - 50	20	99.99
Iron	Fe	100 - 250	3 - 7	98+
Iron	Fe	60 - 80	7	99.9
Iron	Fe	25	40 - 60	99.5
Iron Oxide	Fe_2O_3	20 - 50	-	99.9
Iron Oxide	Fe_2O_3	9	-	99.5
Iron Oxide	Fe_2O_3 (alpha phase)	20 - 60	20 - 60	98
Iron Oxide	Fe_2O_3 (gamma phase)	20 - 30	> 40	98
Iron Oxide	Fe_3O_4	20 - 50	-	99.9
Iron Oxide	Fe_3O_4	20 - 30	> = 40	98+
Iron Oxide	Fe_3O_4	15 - 20	81.98	99.5+
Lanthanum Boride	LaB_6	50 - 80	-	99+
Lanthanum Oxide	La_2O_3	~ 80	-	99.995
Lanthanum Oxide	La_2O_3	15 - 30	20 - 40	99.99
Lanthanum Strontium Manganese Oxide	$La_{0.15}Sr_{0.85}MnO_3$	35	-	99.5
Magnesium Oxide	MgO	~ 30	> 50	99.9
Magnesium Oxide	MgO	100	-	99
Magnesium Oxide	MgO	20	~ 50	99
Manganese Iron Oxide	$MnFe_2O_4$	20 - 50	-	99.9
Manganese Oxide	Mn_2O_3	40 - 60	-	98+
Molybdenum	Mo	70	-	99.5
Molybdenum	Mo	100	-	99+
Molybdenum Oxide	MoO_3	100	-	99.5
Neodymium Oxide	Nd_2O_3	~ 80	8 - 12	99.9+
Neodymium Oxide	Nd_2O_3	49 - 64	13 - 17	99.9
Neodymium Oxide	Nd_2O_3	15 - 30	30 - 50	99.9
Nickel	Ni	30 - 50	12	99.7

*Purity based on metallic impurities.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Nickel	Ni	20	8 - 10 / 40 - 60	99.8 / 99.9+
Nickel Iron Oxide	$NiFe_2O_4$	20 - 50	-	99.9
Nickel Iron Oxide	$NiFe_2O_4$	20 - 30	59	98
Nickel Oxide	NiO	~ 20	> 50	99.9
Nickel Oxide	NiO	100	~ 6	99
Nickel Zinc Iron Oxide	$Ni_{0.5}Zn_{0.5}Fe_2O_4$	20 - 50	-	99.9
Nickel Zinc Iron Oxide	$Ni_{0.5}Zn_{0.5}Fe_2O_4$	10 - 30	-	98.5
Niobium Oxide	Nb_2O_5	~ 500	-	99.9
Praseodymium Oxide	Pr_6O_{11}	15 - 30	30 - 50	99.9
Samarium Oxide	Sm_2O_3	30 - 50	12 - 20	99.9
Samarium Oxide	Sm_2O_3	42 - 55	18 - 22	99.9
Samarium Oxide	Sm_2O_3	15 - 30	30 - 50	99.9
Silicon	Si	50 - 70	30 - 50	98+
Silicon	Si	130	-	99.5
Silicon	Si	30 - 50	70 - 80	98+
Silicon	Si	20 - 30	-	98+
Silicon	Si	60	80	99
Silicon Carbide	SiC (beta phase)	50 - 60	80	95 / 99
Silicon Carbide	SiC (beta phase)	45 - 55	-	97.5
Silicon Carbide	SiC (beta phase)	10	150 - 200	97+
Silicon Carbide (97/8 wt%),(98/2 wt%)	Si-C	15	~ 90	99+
Silicon Nitride	Si_3N_4	20	110	99
Silicon Nitride	Si_3N_4	15 - 30	103 - 123	98.5+
Silicon Oxide	SiO_2	80	440	99+
Silicon Oxide	SiO_2	20 - 60	400 - 600	99.9
Silicon Oxide	SiO_x (x=1.2-1.6)	20	160	99.5
Silicon Oxide	SiO_x (x=1.2-1.6)	15	~ 640	99.5
Silver	Ag	~ 150	-	99.95
Silver	Ag	100 - 500	2 - 8.5	99.95
Silver	Ag	40 - 90	-	99.95
Silver	Ag	500 - 1200	-	99.95
Silver	Ag	90 - 210	2.40 - 4.42	99
Silver	Ag	35	30 - 50	99.5 / 99.9
Strontium Hexaluminate	$SrAl_{12}O_{19}$	20 - 40	~ 60	99.5
Strontium Titanate	$SrTiO_3$	~ 100	> 10	99.8 / 99.95
Terbium Oxide	Tb_4O_7	46 - 60	13 - 17	99.95
Tin	Sn	100	-	99.8
Tin Oxide	SnO_2	10 - 20	-	99.5
Tin Oxide	SnO_2	~ 80	~ 11	99.9
Tin Oxide	SnO_2	61	14.2	99.5
Titanium	Ti	30 - 50	12	99
Titanium	Ti	60 - 80	13.8	99
Titanium Boride	TiB_2	20 - 30	-	80 - 90
Titanium Carbide	TiC	80 - 130	~ 35	98+

*Purity based on metallic impurities.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Titanium Carbide	TiC	40	-	99
Titanium Carbide	TiC	20 - 30	> 50	99
Titanium Nitride	TiN	10 - 20	80 / 40 - 55	97
Titanium Oxide	TiO_2	~ 40	> 40	99.9
Titanium Oxide	TiO_2	200	-	99
Titanium Oxide	TiO_2	30 - 40	~ 30	99
Titanium Oxide	TiO_2	15	~ 240	99
Titanium Oxide	TiO_2	10 - 30	200 - 220	99
Tungsten	W	40 - 60	-	99.9+
Tungsten Carbide	WC	150 - 200	-	99.95
Tungsten Carbide	WC	500	-	99.5
Tungsten Carbide Cobalt (85/15 at%), (95/5 at%)	WC-Co	40 - 80	-	99.9
Tungsten Carbide Cobalt (92/8 wt%)	WC-Co	60 - 250	1.5	99.5
Tungsten Oxide	WO_3	~ 40 / 60 / 80	-	99.9
Tungsten Oxide	WO_3	30 - 70	-	99+
Tungsten Oxide	WO_3	60 - 120	-	99.5
Ytterbium Fluoride	YbF_3	40 - 80	~ 100	99
Yttrium Aluminum Oxide	$Y_3Al_5O_{12}$	40	-	99
Yttrium Cerium Aluminum Oxide	$(Y_{2.98}Ce_{0.02})Al_5O_{12}$	15 - 40	-	99.5
Yttrium Neodymium Aluminum Oxide	$(Y_{2.98}Nd_{0.02})Al_5O_{12}$	40 / 300	-	99.5
Yttrium Oxide	Y_2O_3	30 - 50	30 - 50	99.95
Yttrium Oxide	Y_2O_3	32 - 36	33 - 37	99.9
Yttrium Oxide	Y_2O_3	20 - 40	30 - 50 / ~ 42	99.99 / 99.995
Zinc	Zn	~ 120	6 - 8	99.8
Zinc	Zn	130	5 - 7 / 6.4	99.5
Zinc	Zn	100	30 - 50	99.9+
Zinc	Zn	80	-	99.5
Zinc	Zn	35	30- 50	99.9
Zinc Iron Oxide	$ZnFe_2O_4$	15 - 30	-	98.5
Zinc Iron Oxide	$ZnFe_2O_4$	20 - 50	-	99.9
Zinc Oxide	ZnO	~ 30	~ 35	99.7
Zinc Oxide	ZnO	90 - 210	4.9 - 6.8	99.9+
Zinc Oxide	ZnO	20	50	99.5
Zirconium Carbide	ZrC	30 - 60	70	97+
Zirconium Oxide	ZrO_2	30 - 60	15 - 40	> 99.9
Zirconium Oxide	ZrO_2	50	-	99.5
Zirconium Oxide	ZrO_2	20	-	99
Zirconium Oxide Calcium Oxide (92/8 at%)	ZrO_2-CaO	20 - 30	30 - 60	99.9

*Purity based on metallic impurities.

CHEMICAL	FORMULA	AVERAGE PARTICLE SIZE (nm)	SPECIFIC SURFACE AREA (m^2/g)	PURITY*
Zirconium Oxide Yttrium Oxide, YSZ (97/3 at%), (92/8 at%)	ZrO_2-Y_2O_3	30 - 60	15 - 40	> 99.9
Zirconium Oxide Yttrium Oxide, YSZ (97/3 at%)	ZrO_2-Y_2O_3	65	15	99.95
Zirconium Oxide Yttrium Oxide, YSZ (97/3 at%), (92/8 at%)	ZrO_2-Y_2O_3	20 - 30	30 - 60	99.9
Zirconium Oxide Yttrium Oxide, YSZ (92/8 at%)	ZrO_2-Y_2O_3	200 - 300	-	99.9

*Purity based on metallic impurities.

Thermal Spray Powders

THERMAL SPRAY PROCESSES

- Plasma spray
- Flame spray
- High velocity oxy-fuel coating spray (HVOF)
- Electric arc spray
- Cold spray

HARDNESS MEASUREMENT METHODS

Rockwell Hardness (HRB or HRC) is a method of measuring the hardness of materials. Hardness, in this sense, means resistance to penetration. The test gets its name from Stanley P. Rockwell who devised the test and original machines, later selling the rights. The test measures the hardness by pressing an indentor into the surface of the steel with a specific load and then measuring how far the indentor was able to penetrate.

The Vickers (HV) test was developed in England is 1925 and was formally known as the Diamond Pyramid Hardness (DPH) test. The Vickers test has two distinct force ranges, micro (10 g to 1000 g) and macro (1 kg to 100 kg), to cover all testing requirements. The indenter is the same for both ranges therefore Vickers hardness values are continuous over the total range of hardness for metals (typically HV100 to HV1000).

*Purity based on metallic impurities.

CERAMIC POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Aluminum Oxide	Al_2O_3	Fused	-70,+30	99	2040	HRC70
Aluminum Oxide Titanium Oxide (87/13 wt%)	Al_2O_3-TiO_2	Fused	-70,+30	99.9	1900	HRC70
Aluminum Oxide Titanium Oxide (80/20 wt%)	Al_2O_3-TiO_2	Sintered	-70,+30	99.9	1890	HRC70
Aluminum Oxide Titanium Oxide (60/40 wt%)	Al_2O_3-TiO_2	Sintered	-70,+30	99.9	1850	HRC60
Titanium Oxide	TiO_2	Fused	-70,+30	98	1930	HRC60
Chromium Oxide	Cr_2O_3	Fused	-70,+30	98	2440	HRC70
Chromium Oxide Titanium Oxide Silicon Oxide (92/3/5 wt%)	Cr_2O_3-TiO_2-SiO_2	Sintered	-70,+30	99.9	2400	HRC70
Zirconium Oxide Yttrium Oxide, YSZ (87/13 wt%)	ZrO_2-Y_2O_3	Sintered	-70,+30	99.9	2500	HRC40

CARBIDE POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Tungsten Carbide	WC	Agglomerated and sintered	-100,+40/ -70,+40	99.9	2730	HV1200
Chromium Carbide	Cr_3C_2	Agglomerated and sintered	-100,+40/ -70,+40	99	2530	HV2500
Titanium Carbide	TiC	Agglomerated and sintered	-100,+40/ -70,+40	99.5	3100	HV2800
Molybdenum Carbide	Mo_2C	Agglomerated and sintered	-100,+40/ -70,+40	99.5	2410	HV1500

CHROMIUM CARBIDE COMPOSITE POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Nickel Chromium Chromium Carbide (16/4/80 wt%)	Ni-Cr-Cr_3C_2	Blend	-100,+40/ -80,+40/-70,+40	99.9	1410	HRC40
Nickel Chromium Chromium Carbide (50/20/5/25 wt%)	Ni-Cr-Cr_3C_2	Dense Covered	-100,+40/ -80,+40/-70,+40	99.9	1410	HRC40
Nickel Chromium Carbide (25/75 wt%)	Ni-Cr_3C_2	Dense Covered	-100,+40/ -80,+40/-70,+40	99.9	1470	HRC40
Nickel Chromium Aluminum Chromium Carbide (64/19/4/8/5 wt%)	Ni-Cr-Al-Cr_3C_2	Porous Covered	-100,+40/ -80,+40	99.9	670	HRC50

*Purity based on metallic impurities.

MOLYBDENUM COMPOSITE POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Molybdenum	Mo	Agglomerated and sintered, spherical	-100,+44 / -90,+44 / -70,+44	99.9	2611	HRA60~70
Molybdenum Nickel Chromium Boron Silicon (75/25 wt%)	Mo-NiCrBSi	Blended	-100,+44 / -90,+44 / -70,+44	99.9	1030	HRC40~50
Molybdenum Nickel Chromium Boron Silicon (70/30 wt%)	Mo-NiCrBSi	Blended	-100,+44 / -90,+44 / -70,+44	99.9	1030	HRC40~50
Molybdenum Nickel Chromium Boron Silicon (30/70 wt%)	Mo-NiCrBSi	Blended	-100,+44 / -90,+44 / -70,+44	99.9	1030	HRC50~60
Molybdenum Nickel Chromium Boron Silicon (75/25 wt%)	Mo-NiCrBSi	Agglomerated and sintered, spherical	-100,+44 / -90,+44 / -70,+44	99.9	1030	HRC40~50
Molybdenum Nickel Chromium Boron Silicon (70/30 wt%)	Mo-NiCrBSi	Agglomerated and sintered, spherical	-100,+44 / -90,+44 / -70,+44	99.9	1030	HRC40~50
Molybdenum Chromium Carbide Nickel Chromium (50/15/35 wt%),(50/10/40 wt%), (40/10/50 wt%)	Mo-Cr_3C_2-NiCr	Blended	-100,+44 / -90,+44 / -70,+44	99.9	1410	HRC40~50
Molybdenum Aluminum Silicon (50/50 wt%)	Mo-AlSi	Blended	-100+44 / -90+44 / -70+44	99.9	1410	HRC40~50

ALLOY POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Nickel Chromium Boron Silicon (85/8-10/1.5-2.5/2-3 wt%)	Ni-Cr-B-Si	Atomized, spherical	-100,+40	99.9	1060	HRB35
Nickel Chromium Boron Silicon Carbon (70/15-20/3-4.5/3.5-5/0.5-1 wt%)	Ni-Cr-B-Si-C	Atomized, spherical	-100,+40	99.9	1035	HRB60
Nickel Chromium (20/80 wt%)	Ni-Cr	Atomized, spherical	-100,+40	99.9	1400	HRB90
Aluminum Silicon (88/12 wt%)	Al-Si	Atomized	-100,+40	99.9	660	HRB90

*Purity based on metallic impurities.

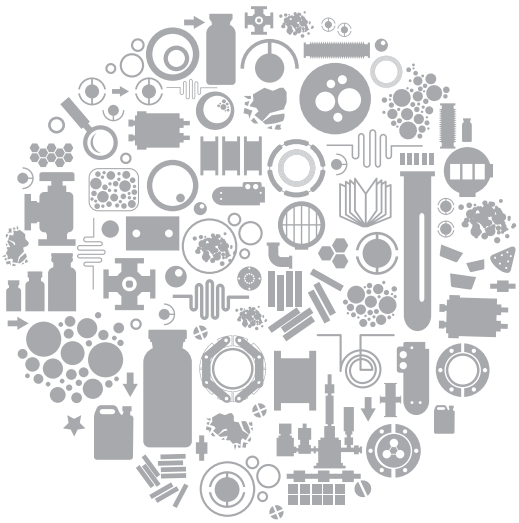
SELF-BONDING COMPOSITE POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Nickel Aluminum (90/10 wt%)	Ni-Al	Dense Covered	-100,+40 / -70,+40	99.9	660	HRB80
Nickel Aluminum (5/95 wt%)	Ni-Al	Porous Covered	-100,+40 / -70,+40	99.9	660	HRB80
Nickel Molybdenum Aluminum (90/5/5 wt%)	Ni-Mo-Al	Porous Covered	-100,+40	99.9	660	HRB80
Nickel Chromium Aluminum (76/19/5 wt%)	Ni-Cr-Al	Porous Covered	-100,+40	99.9	660	HRB80
Nickel Chromium Aluminum Cobalt (72/18/5/5 wt%)	Ni-Cr-Al-Co	Porous Covered	-100,+40	99.9	660	HRB70
Nickel Chromium Aluminum Yttrium Oxide (74.5/18.6/2/5 wt%)	Ni-Cr-Al-Y_2O_3	Porous Covered	-100,+40	99.9	660	HRB70

TUNGSTEN CARBIDE COMPOSITE POWDERS

CHEMICAL	FORMULA	POWDER FEATURE	PARTICLE SIZE (µm)	PURITY* (%)	MELTING POINT (°C)	HARDNESS
Cobalt Tungsten Carbide (12/88 wt%)	Co-WC	Dense Covered	-100,+40 / -70,+40	99.9	1280	HRC50
Nickel Tungsten Carbide (12/88 wt%)	Ni-WC	Dense Covered	-100,+40 / -70,+40	99.9	1460	HRC50

*Purity based on metallic impurities.



neyco

30 avenue de la Paix
92170 Vanves - France
Tel: +33(0)1 41 90 50 50
Fax: +33(0)1 41 90 50 51

www.neyco.fr

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