Properties of Common Abrasives

Compound	Names	Source	Color	Hardness	Density	Commercial product names
aluminum oxide	alumina, corundum, sapphire, emery	Mineral (corundum); Synthetic first made in 1888	white	8.0-9.0	2.8-4.0	Alundum®, Aloxite, Bauxilite
boron carbide		Synthetic. Discovered in 19th c. Used industrially starting in the 1930s	black	9.0	2.6	
calcium carbonate	chalk, whiting, calcite	Naturally occurring world-wide as marble, limestone, and sea shells	white	3.0	1.8-2.9	
ceric oxide	cerium oxide, ceria, optician's rouge		yellow, white	6.0	6.1-7.2	Ceriorouge
chromic oxide	chromia, green rouge	Synthetic-first made in 1809	dull green	8.5	5.1-5.2	
diamond	ballas, bort, carbonado	Naturally occurring primarily in Africa, southeast Asia, South America and Australia; Synthetic-made in 1955	transparent to black	10.0	3.5-3.5	
diatomite	diatomaceous earth, fossil flour, siliceous earth, infusorial earth,	Mineral skeletons of water plants	gray	1.0-1.5	1.9-2.3	Snow Floss, Celite®, Sil-O-Cel, Super-Cel, Kenite®, Diactiv®, Primisil®
emery	corundum; emery flour, jeweler's emery, crocus cloth	Natural mixture of corundum and magnetite; used since ancient times	black	8.0-9.0	3.7-4.3	
garnet	pyrope, almandine, carbuncle	Mineral	red	6.5-7.5	3.5-4.3	
iron oxide	hematite, colcothar, crocus powder, ferric oxide, jeweler's rouge, optical rouge	Naturally occurring world-wide. Used since ancient times	red	5.5 - 6.5	4.2-5.3	
kaolin	kaolinite, China clay, Devonshire clay, bolus alba, argilla, fuller's earth	Naturally occurring world-wide	white	2.0 - 2.5	2.6-2.63	
pumice	potassium aluminum silicate, volcanic glass	Natural volcanic mineral-used since ancient times	gray	6.0-6.5	~ 0.25	
rottenstone	siliceous-argillaceous limestone, tripoli	Primarily mined in England	light gray	6.0	4.1-4.7	Bon Ami
silicon carbide	Carborundum	Synthetic-discovered in 1884	green to black	9.0-9.5	3.22-3.23	Micromesh, Carborundum, Unirundum, Carbofrax
silicon dioxide	sand, silica, quartz, glass, flint, chert	Naturally occurring world-wide	clear to opaque	5.5-7.0	2.2-2.6	Silex
stannic oxide	putty powder, jeweler's putty, tin dioxide	Mineral (cassiterite)	white	6.0-7.0	6.6-6.9	
talc	talcum powder, soapstone, steatite, asbestine, tailors chalk	Naturally occurring world-wide	white, gray or green	1.0	2.5-2.8	Mistron®; Vertal; Nicron®;
titanium dioxide	titania	Mineral (rutile); Synthetic-anatase made in 1906; rutile made in 1938	white	6.0-6.5	4.26	Titanox; Unitane
tungsten carbide	carbide	First used in mid 20th century	gray or silvery	9.5+	15.6	Dumomet; Carboloy; Wimet
whetstone	oilstone, snakestone, honestone, rubbing stone, coticule, Ayr stone	Naturally occurring world-wide including Belgian blue whetstone	variable	5.5-7.0	2.2-2.6	
zirconium oxide	zircon, zirconia	Mineral (baddeleyite); synthetic	white	6.5	5.85	
Other abrasives						
animal products (fish skin, horse tail, horse hair); metal (steel wool, bronze wool); plant products (walnut shells, rice husk, cellulose powder)						