

Moh Hardness by Mineral Name

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

Mineral	Value	Mineral	Value	Mineral	Value
Abenakiite-(Ce)	4.0	Ginorite	3.5	Paramelaconite	4.5
Abernathyite	2.0-3.0	Girvasite	3.5	Paramendozavilite	1.0
Abhurite	2.0	Gismondine	4.0-5.0	Paranatisite	5.0
Acanthite	2.0	Giuseppettite	6.0-7.0	Paranatriolite	5.0-5.5
Actinolite	5.5	Gjerdingenite-Fe	5.0	Paraotwayite	4.0
Acuminite	3.5	Gladiusite	4.0-4.5	Pararealgar	1.0-1.5
Adamite	3.5	Glass	5.0	Pararobertsite	2.0
Adamsite-(Y)	3.0	Glauberite	2.5-3.0	Parascholzite	4.0
Adelite	5.0	Glaucozerinite	1.0	Parascorodite	1.0-2.0
Aegirine	6.0-6.5	Glaucochroite	6.0	Parasibirskite	3.0
Aegirine-augite	6.0	Glauconite	2.0	Parasymplesite	2.0
Aenigmatite	5.0-6.0	Glaucochroite	6.0-6.5	Paratacamite	3.0
Aerinite	3.0	Glaukosphaerite	3.0-4.0	Paratellurite	1.0
Aeschynite-(Ce)	5.0-6.0	Gmelinite	4.5	Paraumbite	4.5
Aeschynite-(Nd)	5.0-6.0	Gmelinite-Ca	4.5	Paravauxite	3.0
Aeschynite-(Y)	5.0-6.5	Gmelinite-K	4.0	Pargasite	6.0
Afghanite	5.5-6.0	Gmelinite-Na	4.5	Parisite-(Ce)	4.5
Afwillite	3.0	Gobbinsite	4.0	Parisite-(Nd)	4.0-5.0
Agardite-(Ca)	3.0-4.0	Godovikovite	2.0	Parkinsonite	2.0-2.5
Agardite-(Ce)	3.0-4.0	Goedkenite	5.0	Parsettensite	1.5
Agardite-(Dy)	3.0-4.0	Goethite	5.0-5.5	Parsonsite	2.5-3.0
Agardite-(La)	3.0-4.0	Goldmanite	6.0-7.0	Parwelite	5.5
Agardite-(Nd)	3.0-4.0	Goldquarryite	3.0-4.0	Pascoite	2.5
Agardite-(Y)	3.0-4.0	Gonnardite	4.0-5.0	Paulingite	5.0
Agate	6.5-7.0	Gonyerite	2.5	Paulingite-Ca	5.0
Agrellite	5.5	Goosecreekite	4.5	Paulingite-K	5.0
Aguilarite	2.0-3.0	Gorceixite	6.0	Paulingite-Na	5.0

Aheylite	5.0-6.0	Gordaite	2.5	Paulkellerite	4.0
Ahlfeldite	2.0-2.5	Gordonite	3.5	Paulkerrite	3.0
Akatoreite	6.0	Gorgeyite	3.5	Paulmooreite	3.0
Akdalaite	7.0	Gormanite	4.0-5.0	Pearl	3.0-3.5
Akermanite	5.0-6.0	Goslarite	2.0-2.5	Pectolite	5.0
Alabaster	2.0	Gottlobite	4.5	Peisleyite	3.0
Alacranite	1.5	Gotzenite	5.5-6.0	Pellyite	6.0
Alamosite	4.5	Goudeyite	3.0-4.0	Penfieldite	3.0-4.0
Alarsite	3.0	Gowerite	3.0	Penikisite	4.0
Albite	7.0	Goyazite	4.0-5.0	Penkvilksite	5.0
Albrechtschraufite	2.0-3.0	Graftonite	5.0	Pennantite	2.0-3.0
Aldermanite	2.0	Grandidierite	7.5	Penobsquisite	3.0
Alexandrite	8.5	Grandreefite	2.5	Pentagonite	3.0-4.0
Alforsite	5.0	Grantsite	1.0-2.0	Pentahydrate	2.5
Aliettite	1.0-2.0	Graphite	1.0-2.0	Pentahydroborite	2.5
Allactite	4.5	Grayite	3.0-4.0	Peprossiite-(Ce)	2.0
Allanite-(Ce)	5.5	Grechishchevite	2.5	Peretaite	3.5-4.0
Allanite-(La)	5.5	Greenalite	2.5	Perhamite	5.0
Allanite-(Y)	5.5	Greenockite	3.5-4.5	Periclase	6.0
Alleghanyite	6.0-6.5	Greifensteinite	4.5	Peridot	6.5-7.0
Allophane	3.0	Griceite	4.5	Perite	3.0
Alluaivite	5.0-6.0	Griffithite	1.0	Perlialite	4.0-5.0
Almandine	7.0-8.0	Griphite	5.5	Perloffite	5.0
Alstonite	4.0-4.5	Grischunite	5.0	Perraultite	4.0
Althausite	3.5	Grossular	6.5-8.5	Perrierite	5.5
Althupite	3.5-4.0	Groutite	5.5	Perrouditite	2.0
Altisite	6.0	Grumantite	4.0-5.0	Petalite	6.0-6.5
Aluminite	1.0	Grunerite	5.0-6.0	Petarasite	5.0-5.5
Aluminobarroisite	5.0-6.0	Guarinoite	1.5-2.0	Petedunnite	6.0
Aluminocopiapite	2.5-	Guerinite	1.5	Petersenite-(Ce)	3.0

	3.0				
Alumino-winchite	5.5	Gugiaite	3.0-4.0	Petersite-(Y)	3.0-4.0
Aluminum	1.5	Guildite	2.5	Petitjeanite	4.5
Alumohydrocalcite	2.5	Gunningite	2.5	Petrovskaita	2.0-2.5
Alumoklyuchevskite	2.0	Gutkovaite-Mn	5.0	Petterdite	2.0
Alumotantite	7.5	Gutsevichite	2.5	Pharmacolite	2.0-2.5
Alunite	3.5-4.0	Gwihabaite	5.0	Pharmacosiderite	2.5
Alunogen	1.5-2.0	Gypsum	2.0	Phenacite	7.5
Alvanite	3.0-3.5	Gyrolite	2.5	Phenakite	7.5-8.0
Amakinite	3.5-4.0	Gysinite-(Nd) ^{^top}	4.0-4.5	Philipsbornite	4.5
Amarantite	2.5	Hafnon	7.5-8.0	Philipsburgite	3.0-4.0
Amarillite	2.5-3.0	Haidingerite	2.0-2.5	Phillipsite	4.0-5.0
Amazonite	6.0-6.5	Haigerachite	2.0	Phillipsite-Ca	4.0-5.0
Amber	2.0-2.5	Hainite	5.0	Phillipsite-K	4.0-5.0
Amblygonite	6.0	Haiweeite	3.5	Phillipsite-Na	4.0-5.0
Amblygonite	5.5-6.0	Halite	2.5	Philolithite	3.0-4.0
Ameghinite	2.0-3.0	Hallimondite	2.5-3.0	Phlogopite	2.0-2.5
Amesite	2.5-3.0	Halloysite	2.0	Phoenicochroite	2.5
Amethyst	7.0	Halotrichite	1.5-2.0	Phosgenite	2.5-3.0
Amicite	5.0-5.5	Hambergite	7.5	Phosinaite-(Ce)	3.5
Aminoffite	5.5	Hancockite	6.0-7.0	Phosphoellenbergerite	6.5
Ammonioalunite	2.0-3.0	Hanksite	3.0	Phosphoferrite	3.0-3.5
Ammoniojarosite	3.5-4.5	Hannayite	2.0-3.0	Phosphofibrite	4.0
Ammonioleucite	5.5-6.0	Hannebachite	3.5	Phosphogartrellite	4.5
Amstallite	4.0	Haradaite	4.5	Phosphophyllite	3.0-3.5
Analcime	5.0	Hardystonite	3.0-4.0	Phosphorrosslerite	2.5
Anandite	3.0-4.0	Harmotome	4.0-5.0	Phosphosiderite	3.5-4.0
Anapaite	3.0-4.0	Harrisonite	4.0-5.0	Phosphuranylite	2.5

Anatase	5.5-6.0	Harstigit	5.5	Phurcalite	3.0
Ancylite-(Ce)	4.5	Hartite	1.0	Phyllotungstite	2.0
Ancylite-(La)	4.0-4.5	Hashemite	3.5	Pianlinite	6.0-7.0
Andalusite	6.5-7.0	Hastingsite	6.0	Pickeringite	1.5-2.0
Andersonite	2.5	Hauckite	2.0-3.0	Picromerite	2.5
Andesine	7.0	Hauyne	5.0-6.0	Picropharmacolite	1.0-2.0
Andradite	6.5-7.0	Hauynite	5.5-6.0	Piemontite	6.0-7.0
Andyrobertsite	3.0	Haynesite	1.5-2.0	Pigeonite	6.0
Angelellite	5.5	Hechtsbergite	4.5	Pimelite	2.5
Anglesite	2.5-3.0	Hectorite	1.0-2.0	Pinakiolite	6.0
Anhydrite	3.5	Hedenbergite	5.0-6.0	Pingguite	5.5-6.0
Ankangite	6.5	Hedyphane	4.0-5.0	Pinnoite	3.5
Ankerite	3.5-4.0	Heidornite	4.0-5.0	Piretite	2.5
Annabergite	2.0	Heinrichite	2.5	Pirssonite	3.0
Anorthite	6.0	Hejtmanite	4.5	Pitchblende	5.0-6.0
Anorthoclase	6.0	Heliophyllite	2.0	Pitiglianoite	5.0
Antarcticite	2.0-3.0	Heliotrope	6.5-7.0	Pitticite	2.0-3.0
Anthoinite	1.0	Hellandite-(Ce)	5.5-6.0	Plagioclase	6.0-6.5
Anthophyllite	5.0-6.0	Hellandite-(Y)	5.5-6.0	Plancheite	5.5
Antigorite	3.5-4.0	Hellyerite	2.5	Planerite	5.0
Antlerite	3.0	Helmutwinklerite	4.5	Plumalsite	5.0-6.0
Apatite	5.0	Helvite	6.0-6.5	Plumbobetafite	4.5-5.5
Aphthitalite	3.0	Hematite	5.5-6.5	Plumbogummite	4.0-5.0
Apjohnite	1.5-2.0	Hematolite	3.5	Plumbojarosite	1.5-2.0
Aplowite	3.0	Hemihedrite	3.0	Plumbomicrolite	5.0
Apophyllite	4.0-5.0	Hemimorphite	5.0	Plumbonacrite	3.5
Aquamarine	7.5-8.0	Hemimorphite	5.0	Plumbopyrochlore	4.5-5.5
Aragonite	3.5-4.0	Hendersonite	2.5	Plumbotsumite	2.0
Arakiite	3.0-4.0	Heneuite	5.0	Poitevinite	3.0-3.5

Aravaipaite	2.0	Henmilite	1.5-2.0	Pokrovskite	3.0
Arcanite	2.0	Hennomartinite	4.0	Poldervaartite	5.0
Arctite	5.0	Henrymeyerite	5.0-6.0	Polhemusite	4.5
Ardealite	1.0-1.5	Hentschelite	3.5	Pollucite	6.5
Ardennite	6.0-7.0	Hercynite	7.5	Polyakovite-(Ce)	5.5-6.0
Arfvedsonite	5.5-6.0	Herderite	5.0	Polycrase-(Y)	5.0-6.0
Argentojarosite	3.5-4.5	Herschelite	4.0-5.0	Polyhalite	2.5-3.5
Argentotennantite	3.5	Heterogenite-3R	4.0-5.0	Polyolithionite	2.0-3.0
Aristarainite	3.5	Heterosite	4.0-4.5	Polyphite-VII	5.0
Armenite	7.5	Heulandite	3.0-3.5	Polyphite-VIII	5.0
Armstrongite	4.5	Heulandite-Ca	3.0-3.5	Ponomarevite	2.5
Arrojadite	5.0	Heulandite-K	3.0-3.5	Portlandite	2.5-3.0
Arsenbrackebuschite	4.5	Heulandite-Na	3.0-3.5	Posnjakite	2.5-3.0
Arsendescloizite	4.0	Heulandite-Sr	3.0-3.5	Potassic-chlorohastingsite	6.0
Arseniopleite	3.5	Hexahydrite	2.0-2.5	Potassic-chloropargasite	5.5
Arsenoclasite	5.0-6.0	Hexahydroborite	2.5	Potassicferrisadanagaite	5.5-6.0
Arsenocrandallite	5.5	Heyite	4.0	Potassicleakeite	5.0-5.5
Arsenoflorencite-(Ce)	3.5	Hibschite	6.5	Potassicpargasite	6.0-6.5
Arsenoflorencite-(La)	3.5	Hidalgoite	4.5	Potassium-alum	2.0
Arsenoflorencite-(Nd)	3.5	Hiddenite	6.0-7.0	Pottsite	3.5
Arsenogorceixite	4.0	Hieratite	2.5	Poudretteite	5.0
Arsenogoyazite	4.0	Hilairite	4.5	Povondraite	7.0
Arsenolite	1.5	Hilgardite	5.0	Powellite	3.5
Arsenopyrite	5.5-6.0	Hillebrandite	5.5	Poyarkovite	2.0-2.5
Arsenowaylandite	4.0-5.0	Hingganite-(Ce)	6.0-7.0	Prasiolite	7.0
Arsentsumebite	4.0-5.0	Hingganite-(Y)	6.0-7.0	Prehnite	6.0-6.5
Arsenuranospathite	2.0	Hingganite-(Yb)	6.0-7.0	Preisingerite	3.0-4.0
Arthurite	3.0-4.0	Hinsdalite	4.5	Preiswerkite	2.5
Artinite	2.5	Hiortd	5.5	Pretulite	5.0
Artroeite	2.5	Hisingerite	3.0	Priceite	3.0-

Arupite	1.5-2.0	Hochelagaite	4.0	Priderite	7.0
Arzakite	2.0-2.5	Hodgkinsonite	4.5-5.0	Pringleite	3.0-4.0
Asbecasite	6.5-7.0	Hoganite	1.5	Prismatine	6.5-7.0
Asbolane	6.0	Hogtuvaite	5.5	Probertite	3.5
Ashcroftine-(Y)	5.0	Hohmannite	3.0	Prochlorite	2.0-2.5
Asisite	3.5-4.0	Holdawayite	3.0	Prosopite	4.0-5.0
Aspidolite	2.5-3.0	Holdenite	4.0	Prosperite	4.5
Asselbornite	3.0	Hollandite	4.0-7.0	Protomangano-ferro-anthophyllite	5.0-6.0
Astrocyanite-(Ce)	2.0-3.0	Holmquistite	5.5	Proustite	2.5
Astrophyllite	3.0-3.5	Holtedahlite	4.5-5.0	Przhevalskite	2.0-3.0
Atacamite	3.0-3.5	Holtite	8.5	Pseudoboleite	2.5
Atelestite	4.5-5.0	Homilite	5.0	Pseudobrookite	6.0
Atlasovite	2.0-2.5	Honessite	1.0-1.5	Pseudograndreefite	2.5
Aubertite	2.0-3.0	Hopeite	3.0	Pseudolaueite	3.0
Augelite	4.5-5.0	Hornesite	1.0	Pseudomalachite	4.0-5.0
Augite	5.3-5.6	Horvathite-(Y)	4.0	Pseudophite	2.0-5.0
Aurichalcite	2.0	Hotsonite-VI	2.5	Psilomelane	5.5-6.0
Austinite	4.0-4.5	Hotsonite-VII	2.5	Pucherite	4.0
Autunite	2.0-2.5	Howlite	2.5-3.5	Pumpellyite-(Fe++)	5.5
Aventurine	6.0-6.5	Hsianghualite	6.5	Pumpellyite-(Fe+++)	5.5
Averievite	4.0	Huanghoite-(Ce)	5.0	Pumpellyite-(Mg)	5.5
Axinite	6.5-7.0	Huangite	3.0-4.0	Pumpellyite-(Mn++)	5.5
Azoproite	5.5	Hubeite	5.5	Purpurite	4.0-5.0
Azurite ^{^top}	3.5-4.0	Huemulite	2.5-3.0	Pyatenkoite-(Y)	4.0-5.0
Babefphite	3.5-4.0	Hugelite	2.0-3.0	Pyrite	6.0-6.5
Babingtonite	5.5-6.0	Humberstonite	2.5	Pyroaurite	2.5
Baddeleyite	6.5	Humboldtine	2.0	Pyrobelonite	3.5
Bafertisite	5.0	Humite	6.0-	Pyrochlore	5.0-

			6.5		5.5
Baghdadite	6.0	Hummerite	2.0	Pyrochroite	2.5-3.0
Bahianite	9.0	Huntite	1.0-2.0	Pyromorphite	3.5-4.0
Baileychlore	2.5-3.0	Hureaulite	5.0	Pyrope	7.5
Bakerite	4.5	Hurlbutite	6.0	Pyrophyllite	1.5-2.0
Bakhchisaraitsevite	2.0-2.5	Huttonite	5.0	Pyrostilpnite	2.0
Balipholite	5.0-5.5	Hyalophane	6.0-6.5	Pyroxferroite	4.5-5.5
Bamfordite	2.0-3.0	Hyalotekite	5.5	Pyroxmangite ^{^top}	5.5-6.0
Banalsite	6.0	Hydroastrophyllite	3.0-4.0	Qilianshanite	2.0
Bandyllite	2.5	Hydroboracite	2.0	Qingheiite	5.5
Bannisterite	4.0	Hydrocalumite	3.0	Quadridavyne	5.0
Baotite	6.0	Hydrocerussite	3.5	Quadruphite-VII	5.0
Bararite	2.5	Hydrochlorborite	2.5	Quadruphite-VIII	5.0
Baratovite	3.5	Hydrodelhayelite	4.0	Quartz	7.0
Barberiite	1.0	Hydrodresserite	3.0-4.0	Queitite	4.0
Barbertonite	1.5-2.0	Hydromagnesite	3.5	Quenselite	2.5
Barbosalite	5.5-6.0	Hydronium-jarosite	4.0-4.5	Quenstedtite	2.5
Barentsite	3.0	Hydrotalcite	2.0	Quintinite-2H	2.0
Bariomicrolite	4.5-5.0	Hydrotungstite	2.0	Quintinite-3T ^{^top}	2.0
Bario-orthojoaquinite	5.0-5.5	Hydroxyapophyllite	4.0-5.0	Rabbittite	2.5
Bariopyrochlore	4.5-5.0	Hydroxycancrinite	6.0	Rabejacite	3.0
Bariosincosite	3.0	Hydroxylapatite	5.0	Radiobarite	3.0-3.5
Barite	3.0-3.5	Hydroxylbastnasite-(Ce)	4.0	Radtkeite	2.0-3.0
Barium-alumopharmacosiderite	2.0-3.0	Hydroxylbastnasite-(La)	4.0	Ralstonite	4.5
Barium-pharmacosiderite	3.0	Hydroxylbastnasite-(Nd)	1.0-2.0	Rambergite	4.0
Barium-zinc-alumopharmacosiderite	2.5	Hydroxylclinohumite	6.5	Rammelsbergite	5.5-6.0
Barrerite	3.0-4.0	Hydroxyllestadite	4.5	Ramsbeckite	3.5
Barroisite	5.0-6.0	Hydroxylherderite	5.0-5.5	Rancieite	2.5-3.0
Barstowite	3.0	Hydrozincite	2.0-2.5	Rankachite	2.5
Barylite	6.0-7.0	Hypercinnabar	3.0	Rankamaite	3.0-4.0

Barysilite	3.0	Hypersthene	5.0-6.0	Rankinite	5.5
Barytocalcite	4.0	Hypersthene ^{^top}	5.5-6.0	Ransomite	2.5
Barytolamprophyllite	2.0-3.0	Ice	2.5	Rapidcreekite	2.0
Basaluminite	1.5	Idocrase	6.5	Rappoldite	4.5
Bassetite	2.5	Idrialite	1.5	Raspite	2.5-3.0
Bastnasite-(Ce)	4.0-5.0	Ilmoriite-(Y)	5.5-6.0	Ravatite	1.0
Bastnasite-(La)	4.0-5.0	Illesite	2.0-3.0	Rectorite	1.0-2.0
Bastnasite-(Y)	4.0-4.5	Ilmaussite-(Ce)	4.0	Reddingite	3.5
Batisite	6.0	Ilinskite	1.5-2.0	Redingtonite	2.0
Bavenite	5.5	Illite	1.0-2.0	Redledgeite	6.0-7.0
Bayldonite	4.5	Ilmajokite	1.0	Reederite-(Y)	3.0-3.5
Bazhenovite	2.0	Imandrite	5.0-5.5	Reedmergnerite	6.0-6.5
Bazirite	6.0-6.5	Inderborite	3.5	Reevesite	2.0
Bazzite	6.5	Inderite	2.5	Reichenbachite	3.5
Bearthite	4.0-5.0	Indialite	7.0-7.5	Reidite	7.5
Beaverite	3.5-6.5	Indigirite	2.0	Reinhardbraunsite	5.0-6.0
Bechererite	2.5-3.0	Inesite	6.0	Remondite-(Ce)	3.0-3.5
Becquerelite	2.5	Ingersonite	6.5	Remondite-(La)	3.0
Bederite	5.0	Innelite	4.5-5.0	Rengeite	5.0-5.5
Behierite	7.0-7.5	Intersilite	3.0-4.0	Reppiaite	3.0-3.5
Behoite	4.0	Inyoite	2.0	Retgersite	2.5
Beidellite	1.0-2.0	Iodargyrite	1.5-2.0	Retzian-(Ce)	4.0
Belkovite	6.0-7.0	Iolite	7.0-7.5	Retzian-(La)	3.0-4.0
Bellbergite	5.0	Iowaite	1.5	Retzian-(Nd)	3.0-4.0
Bellingerite	4.0	Iquiqueite	2.0	Revdite	2.0
Belloite	1.0-2.0	Iranite	3.0	Reyerite	3.0-4.0
Belovite-(Ce)	5.0	Iraqite-(La)	4.5	Rhabdophane-(Ce)	3.5
Belovite-(La)	5.0	Iriginite	1.0-2.0	Rhabdophane-(La)	3.0-4.0
Belyankinite	2.0-3.0	Irtysbite	7.0	Rhabdophane-(Nd)	3.0-4.0
Bementite	6.0	Ishikawaite	5.0-	Rhodesite	3.0-

			6.0		4.0
Benitoite	6.0-6.5	Isoclasite	1.5	Rhodizite	8.5
Benitoite	6.0-6.5	Isokite	5.0	Rhodochrosite	3.0
Benstonite	3.0-4.0	Isolueshite	5.5-6.0	Rhodolite	7.0-7.5
Bentorite	2.0	Itoigawaite	5.0-5.5	Rhodonite	6.0
Benyacarite	2.5-3.0	Ivory ^{^top}	2.0-3.0	Rhodozite	8.0
Beraunite	2.0	Jadeite	6.5-7.0	Rhomboclase	2.0
Berberite	3.0	Jadeite	6.5	Ribbeite	5.0
Berezanskite	2.5-3.0	Jagoite	3.0	Richellite	2.0-3.0
Bergslagite	5.0	Jagowerite	4.5	Richelsdorfite	2.0
Berlinite	6.5	Jahnsite-(CaFeFe)	4.0	Richetite	3.5
Bermanite	3.5	Jahnsite-(CaMnFe)	4.0	Richterite	6.0
Bernalite	4.0	Jahnsite-(CaMnMg)	4.0	Riebeckite	4.0
Bernardite	2.0	Jahnsite-(CaMnMn)	4.0	Rilandite	2.0-3.0
Berndtite	1.0-2.0	Jahnsite-(MnMnMn)	4.0	Rimkorolite	3.0
Berthierine	2.5	Jamesite	3.0	Rinkite	5.0
Bertossaite	6.0	Janggunitite	2.0-3.0	Rinneite	3.0
Bertrandite	6.0-7.0	Janhaugite	5.0	Rittmannite	3.5
Beryl	7.5-8.0	Jarlite	4.0-4.5	Rivadavite	3.5
Beryllite	1.0	Jarosewichite	4.0	Riversideite	3.0
Beryllonite	5.5-6.0	Jarosite	2.5-3.5	Robertsite	3.5
Berzeliite	4.5-5.0	Jasmundite	5.0	Rock Crystal	7.0
Betafite	5.0-5.5	Jasper	6.5-7.0	Rockbridgeite	4.5
Betpakdalite	3.0	Jeanbandyite	3.5	Rodalquilarite	2.0-3.0
Beudantite	4.0	Jeffreyite	5.0	Roebbingite	3.0
Beusite	5.0	Jennite	3.5	Roedderite	5.0-6.0
Beyerite	2.0-3.0	Jensenite	3.0-4.0	Rollandite	4.0-4.5
Bianchite	2.5	Jeremejevite	7.0	Romanite	6.5-7.0
Bideauxite	3.0	Jerrygibbsite	5.5	Romeite	5.5-6.0
Bieberite	2.0	Jervisite	6.0-7.0	Romerite	3.0-3.5
Biehlite	1.0-1.5	Jet	2.5-3.0	Ronneburgite	3.0

Bigcreekite	2.0-3.0	Jimboite	5.5	Rooseveltite	4.0-4.5
Bijvoetite-(Y)	2.0	Jimthompsonite	2.0-2.5	Rorisite	2.0
Bikitaite	6.0	Jinshajiangite	4.5-5.5	Rosasite	4.0
Bilinite	2.0	Jixianite	3.0	Roscoelite	2.5
Bindheimite	4.0-5.0	Joaquinite-(Ce)	5.0-5.5	Rose quartz	7.0
Biotite	2.5-3.0	Joemithite	5.5	Roselite	3.5
Biphosphammite	1.0-2.0	Johachidolite	7.5	Roselite-beta	3.5-4.0
Bischofite	1.5-2.0	Johannite	2.0	Rosemaryite	4.0-4.5
Bismite	4.0-5.0	Johannsenite	6.0	Rosenbergite	3.0-3.5
Bismoclite	2.0-2.5	Johillerite	3.0	Rosenbuschite	5.0-6.0
Bismuth	2.0-2.5	Johnbaumite	4.5	Rosenhahnite	4.5-5.0
Bismutite	4.0	Johnnesite	5.0-6.0	Rosiaite	5.5
Bismutoferrite	6.0	Johnsomervilleite	4.5	Rosickyite	2.0-3.0
Bismutomicrolite	5.0	Johntomaite	4.5	Rosieresite	3.0-3.5
Bismutopyrochlore	5.0	Johnwalkite	4.0	Rossite	2.0-3.0
Bismutostibiconite	4.0-5.0	Jokokuite	2.5	Rosslerite	2.0-3.0
Bismutotantalite	5.0	Jonesite	3.0-4.0	Rossmannite	7.0
Bityite	5.5	Jordisite	1.0-2.0	Roubaultite	3.0
Bjarebyite	4.0	Jorgensenite	3.5-4.0	Rouseite	3.0
Blakeite	2.0-3.0	Jouravskite	2.5	Rouvilleit	3.0
Blatonite	2.0-3.0	Juabite	3.0-4.0	Roweite	5.0
Bleasdaleite	2.0	Juanitaite	1.0	Roxbyite	2.5-3.0
Blixite	3.0-3.5	Jungite	1.0	Rozenite	2.0-3.0
Bobfergusonite	4.0	Junitoite	4.5	Ruby	9.0
Bobierite	2.0-2.5	Juonniite	4.0-4.5	Ruitenbergit	3.0-4.0
Bobjonesite	1.0	Jurbanite ^{^top}	2.5	Rusakovite	1.5-2.0
Bobkingite	3.0	Kadyrelite	2.5-3.0	Rutile ^{^top}	6.0-6.5
Boehmite	3.0	Kaersutite	5.0-6.0	Sabelliite	4.5

Boggsite	3.5	Kahlerite	2.0-2.5	Sabieite	2.0
Bogvadite	4.0	Kainite	3.0	Sabugalite	2.5
Bokite	3.0	Kainosite-(Y)	5.0-6.0	Sacrofanite	5.5-6.0
Boleite	3.0-3.5	Kalborsite	6.0	Sadanagaite	6.0
Bolivarite	2.5-3.5	Kaliborite	4.0-4.5	Safflorite	4.5-5.0
Boltwoodite	3.5-4.0	Kalicinite	1.0-2.0	Safflorite	4.5-5.5
Bonaccordite	7.0	Kalifersite	2.0	Sahlinite	2.0-3.0
Bonshtedtite	4.0	Kalininite	5.0	Sainfeldite	4.0
Boothite	2.0-2.5	Kalinite	2.0	Sakhaite	5.0
Boracite	7.0	Kaliophilite	5.5-6.0	Sal-ammoniac	1.5-2.0
Borax	2.0-2.5	Kalipyrochlor	4.0-4.5	Saleeite	2.5
Borcarite	4.0	Kalistrontite	2.0	Salesite	3.0
Bornemanite	3.5-4.0	Kalsilite	6.0	Saliotite	2.0-3.0
Bornite	3.0	Kaluginite	3.5	Samarskite-(Y)	5.0-6.0
Borocookeite	3.0	Kamchatkite	3.5	Samfowlerite	2.5-3.0
Boromuscovite	2.5-3.0	Kampfite	3.0	Sampleite	4.0
Bostwickite	1.0	Kamphaugite-(Y)	2.0-3.0	Samuelsonite	5.0
Botryogen	2.0	Kankite	2.0-3.0	Sanbornite	5.0
Bottinoite	3.5	Kanoite	6.0-7.0	Saneroite	6.0-7.0
Boussingaultite	2.0	Kanonaite	6.5	Sanidine	6.0
Boyleite	2.0	Kanonerovite	2.5-3.0	Sanjuanite	3.0
Brabantite	5.5	Kaolinite	1.5-2.0	Sanmartinite	4.0-4.5
Bracewellite	5.5-6.5	Kapitsaite-(Y)	5.5	Santaclaraite	6.5
Bradleyite	3.0-4.0	Karlite	5.5	Saponite	1.5-2.0
Brammallite	2.5-3.0	Karnasurtite-(Ce)	2.0	Sapphire	8.5
Brandtite	3.5	Karpatite	1.5	Sapphirine	7.5
Brannerite	4.0-5.0	Karpinskite	2.5-3.0	Sarabauite	4.5
Brannockite	5.0-6.0	Karupmollerite-Ca	5.0	Sarcolite	6.0
Brazilianite	5.5	Kasolite	4.0-4.5	Sarcopside	4.0

Brendelite	4.5	Kassite	5.0	Sard	6.5-7.0
Brewsterite-Ba	5.0	Kastningite	1.0-2.0	Sarkinite	4.0-5.0
Brewsterite-Sr	5.0	Katayamalite	3.5-4.0	Saryarkite-(Y)	3.5-4.0
Brezinaite	3.5-4.5	Katoite	5.0-6.0	Sassolite	1.0
Brianite	4.0-5.0	Katophorite	5.0	Satimolite	1.0-2.0
Brianroulstonite	5.0	Kazakhstanite	2.5	Satpaevite	1.5
Brianyoungite	2.0-2.5	Kazakovite	4.0	Satterlyite	4.5-5.0
Brindleyite	2.5-3.0	Keckite	4.5	Sauconite	1.0-2.0
Britholite-(Ce)	5.5	Keiviite-(Y)	4.0-5.0	Saussurite	6.5
Britholite-(Y)	5.0	Keiviite-(Yb)	4.0-5.0	Sazhinite-(Ce)	2.5
Brizziite-III	2.0	Keldyshite	3.5-4.5	Sazykinaite-(Y)	5.0
Brizziite-VII	2.0	Kellyite	2.5	Scandiobabingtonite	6.0
Brochantite	3.5-4.0	Kemmlitzite	5.5	Scapolite	6.0
Brockite	3.0-4.0	Kenhsuite	2.0-3.0	Scawtite	4.0-5.0
Bromargyrite	1.5-2.0	Kentbrooksite	5.0-6.0	Schaferite	5.0
Bromellite	9.0	Kermesite	1.5-2.0	Schairerite	3.5
Brucite	2.5-3.0	Kernite	2.5-3.0	Schallerite	4.5-5.0
Bruggenite	3.5	Kerstenite	3.5	Schaurteite	2.5
Brugnatellite	2.0	Khaidarkanite	2.5	Scheelite	4.0-5.0
Brushite	2.5	Khanneshite	3.0-4.0	Scheteligite	5.5
Buddingtonite	5.5	Khibinskite	4.5-5.5	Schiavinatoite	8.0
Bukovskyite	5.0	Khmaralite	7.0	Schieffelite	2.0
Bulachite	2.0	Khomyakovite	5.0-6.0	Schlossmacherite	3.0-4.0
Bunsenite	5.5	Khristovite-(Ce)	5.0	Schmitterite	1.0
Burbankite	3.5	Kidwellite	3.0	Schneebergite	4.0-4.5
Burckhardtite	2.0	Kieserite	3.5	Schoenfliesite	4.0-4.5
Burkeite	3.5	Kimrobinsonite	2.5	Schoepite	2.5
Burnsite	1.0-1.5	Kimuraite-(Y)	2.5	Scholzite	3.0-3.5
Burpalite	5.0-6.0	Kimzeyite	7.0	Schorl	7.5
Burtite	3.0	Kingsmountite	2.5	Schorlomite	7.0-

Buryatite	2.5	Kinichilite	2.0	Schrockingerite	2.5
Bushmakinite	3.0-4.0	Kinoite	5.0	Schulingite-(Nd)	3.0-4.0
Bussenite	4.0	Kinoshitalite	2.5-3.0	Schulenbergite	2.0
Bustamite	5.8-6.5	Kintoreite	4.0	Schultenite	2.5
Butlerite	2.5	Kipushite	4.0	Schumacherite	3.0
Buttgenbachite	3.0	Kirschsteinite	5.5	Schwartzembergite	2.5
Byelorussite-(Ce)	5.5-6.0	Kittatinnyite	4.0	Schwertmannite	2.5-3.5
Bystrite	5.0	Klebelbergite	3.5-4.0	Sclarite	3.0-4.0
Bytownite ^{^top}	7.0	Kleinite	3.5	Scolecite	5.0-5.5
Cabazarite	5.0	Klockmannite	2.0-2.5	Scorodite	3.5-4.0
Cacoxenite	3.0-3.5	Knorringite	6.0-7.0	Scorzalite	5.5-6.0
Cadmoselite	4.0	Koashvite	6.0	Scotlandite	2.0
Cafetite	4.0-5.0	Kobeite-(Y)	5.5	Seamanite	4.0
Cahnite	3.0	Koenenite	1.5	Searlesite	1.0-2.0
Calcio-ancylite-(Ce)	4.0-4.5	Kogarkoite	3.5	Seelite-1	3.0
Calcio-ancylite-(Nd)	4.0-4.5	Kolbeckite	5.0	Seelite-2	3.0
Calcioandyröbertsite	3.0	Kolfanite	2.5	Segelerite	4.0
Calcioaravaipaite	2.5	Kolicite	4.5	Segnitite	4.0
Calciobetafite	4.5-5.5	Kolovratite	2.0-3.0	Seidite-(Ce)	3.0-4.0
Calcio Burbankite	3.0-4.0	Kolwezite	4.0	Seidozerite	4.0-5.0
Calcio Copiapite	2.5-3.0	Komarovite	4.0	Sekaninaite	7.5
Calcioferrite	2.5	Kombatite	2.0-3.0	Sellaite	5.0-6.0
Calciohilairite	4.0	Komkovite	3.0-4.0	Selwynite	4.0
Calcio tantite	6.5	Koninckite	3.5-4.0	Semenovite	3.5-4.0
Calcio uranoite	4.0	Koritnigite	2.0	Senarmontite	2.0
Calcite	3.0	Kornerupine	6.5-7.0	Senegalite	5.5
Calciumcatapleiite	4.5-5.0	Kornerupine	7.0	Sengierite	2.5
Caledonite	2.5-3.0	Kornite	6.0-7.0	Sepiolite	2.0
Callaghanite	3.0-3.5	Korobitsynite	5.0	Sepiolite	4.0-6.0
	1.5-				6.0-

Calomel	2.0	Korshunovskite	2.0	Serendibite	7.0
Calumetite	2.0	Kosmochlor	6.0-7.0	Sergeevite	3.5
Calzirtite	6.0-7.0	Kosnarite	4.5	Serpentine	2.0-5.5
Camgasite	2.0	Kostylevite	5.0	Serpierite	3.5-4.0
Caminite	2.5	Kotoite	6.5	Serrabrancaite	3.5
Canaphite	2.0	Kottigite	2.5-3.0	Sewardite	3.5
Cancrinite	5.0-6.0	Kozulite	5.0	Shabaite-(Nd)	2.5
Cancrinite	6.0	Krasnogorite	4.0	Shannonite	3.0-3.5
Cancrisilite	5.0	Krasnoselskite	4.0	Shcherbakovite	6.5
Cannonite	4.0	Krasnovite	2.0	Shcherbinaite	3.0-3.5
Caoxite	2.0-2.5	Krausite	2.5	Sheldrickite	3.0
Cappelenite-(Y)	6.0	Krauskopfite	4.0	Sherwoodite	2.0
Caracolite	4.5	Krettnichite	4.5	Shibkovite	5.5-6.0
Carboborite	2.0	Krinovite	6.0-7.0	Shkatulkalite	3.0
Carbocernaite	3.0	Kristiansenite	5.5-6.0	Shomiokite-(Y)	2.0-3.0
Carboirite-III	6.0	Krohnkite	2.5-3.0	Shortite	3.0
Carboirite-VIII	6.0	Kryzhanovskite	3.5-4.0	Shuiskite	6.0
Carbonate-cyanotrichite	2.0	Ktenasite	2.0-2.5	Sicklerite	4.0
Carbonate-fluorapatite	5.0	Kukharenkoite-(Ce)	4.5	Siderite	3.5
Carbonate-hydroxylapatite	5.0	Kukisvumite	5.5-6.0	Sideronatrite	1.5-2.0
Caresite	2.0	Kuksite	5.0	Siderophyllite	2.5
Carletonite	4.0-4.5	Kulanite	4.0	Siderotil	2.5
Carlinitite	1.0	Kuliokite-(Y)	4.0-5.0	Sidorenkite	2.0
Carlosruizite	2.5-3.0	Kulkeite	2.0	Sidpietersite	1.0-2.0
Carlosturanite	2.5	Kunzite	6.0-6.5	Sidwillite	2.5
Carminite	3.5-4.0	Kupletskite	4.0	Sieleckiite	3.0
Carnallite	2.5	Kuranakhite	4.0-5.0	Sigloite	3.0
Carnotite	2.0	Kurchatovite	4.5	Silinaite	4.5
Carobbiite	2.0-2.5	Kurgantaite	6.0-6.5	Sillimanite	7.0
Carpholite	5.5	Kurnakovite	3.0	Silvialite	5.5

Caryinite	4.0	Kutnohorite	3.5-4.0	Simmonsite	2.5-3.0
Caryopilite	3.0-3.5	Kuzelite	1.5-2.0	Simonkollite	1.5
Cascandite	4.5-6.0	Kuzmenkoite-Mn	5.0	Simplotite	1.0
Cassedanneite	3.5	Kuzminite	1.5	Simpsonite	7.0-8.0
Cassidyite	3.5	Kuznetsovite	2.5-3.0	Sincosite	1.0-2.0
Cassiterite	6.0-7.0	Kvanefjeldite	5.5-6.0	Sinhalite	6.5-7.0
Catapleiite	6.0	Kyanite	4.5	Sinjarite	1.5
Cattiite	2.0	Kyuanite	4.5-5.0	Sinkankasite	4.0
Cavansite	3.0-4.0	Kyzylkumite ^{^top}	6.0-6.5	Sitinakite	4.5
Caysichite-(Y)	4.5	Labradorite	7.0	Sjogrenite	2.5
Cebaite-(Ce)	4.5-5.0	Labuntsovite-Fe	5.0	Sklodowskite	2.0-3.0
Cebaite-(Nd)	4.5-5.0	Labuntsovite-Mg	5.0	Slavikite	3.5
Cebollite	5.0	Labuntsovite-Mn	6.0	Slawsonite	5.5-6.5
Celadonite	2.0	Lacroixite	4.5	Smaragdite	6.0-7.5
Celestine	3.0-3.5	Lammerite	3.0-4.0	Smirnite	3.5-4.0
Celestite	3.0	Lamprophyllite	2.5	Smithsonite	4.5
Celsian	6.0-6.5	Lanarkite	2.0-2.5	Smoky quartz	7.0
Cerchiarait	4.0-5.0	Langbeinite	3.5-4.0	Smolianinovite	2.0
Ceripyrochlore-(Ce)	5.0-5.5	Langite	2.5-3.0	Smrkovecite	4.0-5.0
Cerite-(Ce)	5.5	Lanmuchangite	3.0-3.5	Sobolevite	4.5-5.0
Cerite-(La)	5.0	Lannonite	2.0	Sodalite	6.0
Cerussite	3.0-3.5	Lansfordite	2.5	Soddyite	3.0-4.0
Cervandonite-(Ce)	5.0	Lanthanite-(Ce)	2.5	Sodic-ferripedrizite	6.0
Cervantite	4.0-5.5	Lanthanite-(La)	3.0	Sodium meta-autunite	2.0-2.5
Cesbronite	3.0	Lanthanite-(Nd)	2.5-3.0	Sodium-alum	3.0
Cesium-kupletskite	4.0	Laphamite	1.0-2.0	Sodium-autunite	2.0-2.5
Cesplumtantite	7.0	Lapis lazuli	5.0-6.0	Sodium-komarovite	4.0
Cesstibtantite	6.5	Laplandite-(Ce)	2.0-3.0	Sodium-pharmacosiderite	3.0
Cetineite	3.5	Larnite	6.0	Sodium-uranospinite	2.5
Chabazite-Ca	4.0	Larsenite	3.0	Sodium-zippeite	5.0-

Chabazite-K	4.0	Latiumite	5.5-6.0	Sogdianite	7.0
Chabazite-Na	4.0	Laubmannite	3.5-4.0	Solongoite	3.5
Chabazite-Sr	4.0-4.5	Laueite	3.0	Sonolite	5.5
Chadwickite	2.0	Laumontite	3.5-4.0	Sonoraite	3.0
Chaidamuite	2.5-3.0	Laurelite	2.0	Sophiite	2.0-2.5
Chalcanthite	2.5	Laurionite	2.5-3.0	Sorensenite	5.5
Chalcedony	6.5-7.0	Lautarite	3.5-4.0	Sosedkoite	6.0
Chalcoalumite	2.5	Lautenthalite	2.5	Souzalite	5.5-6.0
Chalcocyanite	3.5	Lavendulan	2.5	Spadaite	2.5
Chalcomenite	2.0-2.5	Lavenite	6.0	Spangolite	2.5-3.0
Chalcophyllite	2.0	Lavrentievite	2.0-2.5	Spencerite	3.0
Chalcopyrite	3.5-4.0	Lawsonite	7.5	Spessartine	6.5-7.5
Chalcosiderite	4.5	Lazarenkoite	1.0	Sphaerobismoite	4.0
Chalybite	3.5-4.0	Lazulite	5.0-6.0	Sphaerocobaltite	3.0-4.0
Chambersite	7.0	Lazurite	5.5	Sphalerite	3.5-4.0
Chamosite	3.0	Leadhillite	2.5	Sphene	5.0-5.5
Changbaiite	5.5	Leakeite	6.0	Spheniscidite	1.0-1.5
Chapmanite	2.5	Lechatelierite	6.5	Spinel	8.0
Charlesite	2.5	Lecontite	2.0-2.5	Spiroffite	3.5
Charmarite-2H	2.5	Legrandite	4.0-5.0	Spodiophyllite	3.0-3.5
Charmarite-3T	2.0	Lehnerite	2.0-3.0	Spodiosite	5.0
Charoite	5.0-6.0	Leifite	6.0	Spodumene	6.5-7.0
Chayesite	5.0-6.0	Leightonite	3.0	Springcreekite	4.0-5.0
Chekhovichite	4.0	Leisingite	3.0-4.0	Spurrite	5.0
Chelyabinskite	3.0	Leiteite	1.5-2.0	Squawcreekite	6.0-6.5
Chenevixite	4.0	Lemleinite-K	5.0	Srebrodolskite	5.5
Chenite	2.5	Lemoynite	4.0	Srilankite	6.5
Cheralite-(Ce)	5.0	Leningradite	4.5	Stanfieldite	4.0-5.0
Cheremnykhite	5.5	Lennilenapeite	3.0	Stannomicrolite	4.5-

Chernikovite	2.0-2.5	Leonite	2.5-3.0	Starkeyite	2.0-3.0
Chernovite-(Ce)	4.0-4.5	Lepidolite	2.5-3.0	Staurolite	7.0-7.5
Chernovite-(Y)	4.0-5.0	Letovicite	1.0-2.0	Steacyite	5.0
Chernykhite	3.0-4.0	Leucite	6.0	Steigerite	2.5-3.0
Chervetite	2.0-2.5	Leucophanite	4.0	Stellerite	4.5
Chesterite	2.0-2.5	Leucophoenicite	5.5-6.0	Stenonite	3.5
Chestermanite	6.0	Leucophosphite	3.5	Stepanovite	2.0
Chevkinite-(Ce)	5.0-5.5	Leucosphenite	6.0-6.5	Stercorite	2.0
Chiavennite	3.0	Levyne	4.0-4.5	Sterlinghillite	3.0
Childrenite	4.5-5.0	Levyne-Ca	4.0-4.5	Stetefeldtite	3.5-4.5
Chiolite	3.5-4.0	Levyne-Na	4.0-4.5	Stevensite	4.0
Chkalovite	6.0	Liandratite	3.5	Stibarsen	3.5
Chladniite	4.0	Liberite	7.0	Stibiconite	4.0-5.0
Chlorapatite	5.0	Libethenite	4.0	Stibiobetafite	5.0
Chlorargyrite	1.0-1.5	Liddicoatite	7.5	Stibiocolumbite	5.5
Chlorellestadite	4.5	Liebauite	5.0-6.0	Stibiomicrolite	4.0
Chloritoid	6.5	Liebenbergite	6.0	Stibiotantalite	5.5
Chlormagaluminite	1.5-2.5	Liebigite	2.5-3.0	Stibivanite	4.0
Chlormanganokalite	2.5	Linarite	2.5	Stichtite	1.5-2.0
Chloromelanite	6.5-7.0	Lindackerite	2.0-2.5	Stilbite-Ca	3.5-4.0
Chloromenite	1.5-2.5	Lindgrenite	4.5	Stilbite-Na	3.5-4.0
Chlorophoenicite	3.0-3.5	Lintisite	5.0-6.0	Stillwellite-(Ce)	6.5
Chloroxiphite	2.5	Liottite	5.0	Stilpnomelane	3.0
Choloalite	3.0	Liroconite	2.0-2.5	Stishovite	7.5-8.0
Chondrodite	6.0-6.5	Lishizhenite	3.5	Stokesite	6.0
Christelite	2.0-3.0	Lisitsynite	5.0-6.0	Stolzite	2.5-3.0
Christite	1.0-2.0	Litharge	2.0	Stoppaniite	7.5
Chrombismite	3.0-3.5	Lithiomarsturite	6.0	Stottite	4.5
Chromceladonite	1.0-	Lithiophilite	4.0-	Straczekite	1.0-

	2.0		5.0		2.0
Chromdravite	7.0-7.5	Lithiophorite	2.5-3.0	Strakhovite	5.0-6.0
Chromite	5.5	Lithiophosphate	4.0	Strashimirite	2.5-3.0
Chromphyllite	3.0	Lithiotantite	6.0-6.5	Strelkinitite	2.5
Chrysoberyl	8.5	Lithiowodginite	5.0-6.0	Strengite	3.5-4.0
Chrysocolla	2.5-3.5	Lithosite	5.5	Stronalsite	6.5
Chrysoprase	6.5-7.0	Litidionite	5.0-6.0	Strontianite	3.5
Chrysotile	2.5	Litvinskite	5.0	Strontiodresserite	2.0-3.0
Chubutite	2.5-3.0	Llmenite	5.0-6.0	Strontioginorite	2.0-3.0
Chudobaite	2.5-3.0	Loellingite	5.0-5.5	Strontiojoaquinite	5.5
Chukhrovite-(Ce)	3.0	Lomonosovite	3.0-4.0	Strontio-orthojoaquinite	5.5
Chukhrovite-(Y)	3.0	Londonite	8.0	Strontio Piemontite	6.0
Churchite-(Dy)	3.0	Lonecreekite	2.0-3.0	Strontio pyrochlore	4.0
Churchite-(Nd)	3.0-3.5	Lonsdaleite	7.5	Strontio whitlockite	5.0
Churchite-(Y)	3.0	Loparite-(Ce)	5.5	Strontium	6.0-6.5
Chursinite	3.0-4.0	Lopezite	2.5	Strontium-apatite	5.0
Chvaleticeite	1.5	Lorenzenite	5.0-6.0	Strunzite	4.0
Cianciulliite	2.0	Lorettoite	3.0	Struverite	6.0-6.5
Cinnabar	2.0-2.5	Loseyite	3.0	Struvite	1.5-2.0
Citrine	7.0	Lotharmeyerite	3.0	Studenitsite	5.5-6.0
Claraite	2.0	Lovdarite	5.0-6.0	Sturmanite	2.5
Clarkeite	4.0-4.5	Lovozerite	5.0	Sturtite	3.0-3.5
Claudetite	2.5	Loweite	2.5-3.0	Suanite	5.5
Cliffordite	4.0	Lucasite-(Ce)	6.0-6.5	Sudoite	2.5-3.5
Clinoatacamite	3.0	Ludlamite	3.5	Sugilite	6.0-6.5
Clinobehoite	2.0-3.0	Ludlockite-(Pb)	1.5-2.0	Sulfoborite	4.0-4.5
Clinochalcomenite	2.0	Ludwigite	5.5	Sulfur	1.5-2.5
Clinochlore	2.0-2.5	Lueshite	5.5	Sulphohalite	3.5

Clinochrysotile	2.5-3.0	Lukechangite-(Ce)	4.5	Sulphur	1.0
Clinoclase	2.5-3.0	Lukrahnite	5.0	Sundiusite	3.0
Clinoenstatite	5.0-6.0	Lulzacite	5.5-6.0	Suolunite	3.5
Clinoferrosilite	5.0-6.0	Lunenburgite	2.0	Surite	2.0-3.0
Clinohedrite	5.5	Lunijianlaite	2.0	Susannite	2.5-3.0
Clinoholmquistite	5.0-6.0	Lunokite	3.0-4.0	Sussexite	3.0
Clinohumite	6.0	Lutecite ^{^top}	6.0	Suzukiite	4.0-4.5
Clinojimthompsonite	2.0-2.5	Macdonaldite	3.5-4.0	Svabite	5.0
Clinomimetite	3.5-4.0	Macedonite	5.5-6.0	Svanbergite	5.0
Clinophosinaite	4.0	Macfallite	5.0-5.5	Sverigeite	6.5
Clinoptilolite-Ca	3.5-4.0	Machatschkiite	2.0-3.0	Svyatoslavite	6.0
Clinoptilolite-K>	3.5-4.0	Mackayite	4.5	Svyazhinite	2.0-3.0
Clinoptilolite-Na	3.5-4.0	Macphersonite	2.5-3.0	Swaknoite	1.5-2.0
Clinotobermorite	4.5	Macquartite	3.5	Swamboite	2.5
Clinozoisite	7.0	Magadiite	2.0	Swedenborgite	8.0
Clintonite	4.0-5.0	Magbasite	5.0	Swinefordite	1.0
Coalingite	1.0-2.0	Magnesio-arfvedsonite	5.0-6.0	Switzerite	2.0
Cobaltarthurite	3.5-4.0	Magnesioaubertite	2.0-3.0	Sylvite	2.5
Cobaltaustinite	4.5	Magnesio-axinite	6.5-7.0	Symesite	4.0
Cobaltkoritnigite	2.0-3.0	Magnesiocarpholite	5.0-5.5	Symplesite	2.5
Cobaltlotharmeyerite	4.5	Magnesiochloritoid	6.5	Synadelphite	4.5
Cobaltneustadtelite	4.5	Magnesiochromite	5.5	Synchysite-(Ce)	4.5
Cobaltomenite	2.0-2.5	Magnesiocopiapite	2.5-3.0	Synchysite-(Nd)	4.5
Cobalttsumcorite>	4.5	Magnesiocummingtonite	5.0-6.0	Synchysite-(Y)	6.0-6.5
Cobalt-zippeite	5.0-5.5	Magnesiodumortierite	7.5	Syngenite	2.5
Coeruleolactite	5.0	Magnesiofoitite	7.0	Szaibelyite	3.0-3.5
Coesite	7.5	Magnesiohastingsite	5.0-6.0	Szenicsite	3.5-4.0
Coffinite	5.0-6.0	Magnesiohobomite-2N2S	6.5	Szmikite	1.5
Colemanite	4.5	Magnesiohobomite-	6.5	Szomolnokite ^{^top}	2.5

		2N3S			
Collinsite	3.0-3.5	Magnesiohogbomite-6N6S	6.5	Taaffeite	8.0
Comancheite	2.0	Magnesiohornblende	5.0-6.0	Tacharanite	5.0
Comblainite	2.0	Magnesionigerite-2N1S	8.0-8.5	Tachyhydrite	2.0
Congolite	6.5-7.5	Magnesionigerite-6N6S	8.0-8.5	Tadzhikite-(Ce)	6.0
Conichalcite	4.5	Magnesioriebeckite	5.0	Tadzhikite-(Y)	6.0
Connellite	3.0	Magnesiosadanagaite	6.0	Taikanite	6.0-7.0
Cookeite	2.5	Magnesiotaafeite-2N2S	8.0-8.5	Tainiolite	2.5-3.0
Copiapite	2.5	Magnesiotaafeite-6N3S	8.5	Takedaite	4.5
Coquandite	3.0-4.0	Magnesiotaramite	5.0-6.0	Takovite	2.0
Coquimbite	2.0	Magnesite	4.0	Talc	1.0
Coral	3.0-4.0	Magnesiumastrophyllite	3.0	Talmessite	5.0
Cordierite	7.0	Magnesium-chlorophoenicite	3.0-3.5	Tamaite	4.0
Cordylite-(Ce)	4.5	Magnesium-zippeite	5.0-5.5	Tamarugite	3.0
Corkite	3.5-4.5	Magnetite	5.5-6.5	Tancoite	4.0-4.5
Cornetite	4.5	Magnussonite	3.5-4.0	Taneyamalite	5.0-6.0
Cornwallite	4.0-5.0	Mahnertite	2.0-3.0	Tangeite	3.5
Corrensite	1.0-2.0	Majorite	7.0-7.5	Tantalaeschynite-(Y)	5.5-6.0
Corundum	9.0	Malachite	3.5-4.0	Tantalite	5.0-6.0
Corvusite	2.5-3.0	Malachite	3.5-4.0	Tantalowodginite	5.0-5.5
Cotunnite	1.5-2.0	Malayaite	3.5-4.0	Tanteuxenite-(Y)	5.0-6.0
Cowlesite	5.0-5.5	Malhmoodite	3.0	Tantite	7.0
Crandallite	4.0	Malinkoite	5.0	Tanzanite	6.5-7.0
Crawfordite	3.0	Malladrite	3.0	Taramellite	5.5
Creedite	3.5	Mallardite	2.0	Taramite	5.0-6.0
Crichtonite	5.0-6.0	Mammothite	3.0	Tarbuttite	4.0
Cristobalite	6.5	Manaksite	5.0	Tatarskite	2.5
Crocoite	2.5-3.0	Manandonite	2.5-3.5	Tausonite	6.0-6.5
Cronstedtite	3.5	Manasseite	2.0	Tavorite	5.0
Crossite	6.0	Mandarinoite	2.5	Tazheranite	7.5
	2.5-				

Cryolite	3.0	Manganarsite	3.0	Tedhadleyite	2.5
Cryolithionite	2.5	Manganaxinite	6.5-7.0	Teepleite	3.0-3.5
Cryptohalite	2.5	Manganbabingtonite	5.5-6.0	Tellurite	2.0
Cualstibite	2.0	Manganbelyankinite	2.0-2.5	Tengchongite	2.0-2.5
Cumengite	2.5	Manganberzeliite	4.5-5.0	Tenorite	3.5-4.0
Cummingtonite	5.0-6.0	Mangangordonite	3.0	Tephroite	6.5
Cuprite	3.5-4.0	Manganhumite	4.0	Terlinguaite	2.0-3.0
Cuprocopiapite	2.5-3.0	Manganlotharmeyerite	3.0	Ternesite	4.5
Cuprorivaite	5.0	Mangan-neptunite	5.0-6.0	Ternovite	3.0
Cuprosklodowskite	4.0	Manganocummingtonite	5.0-6.0	Terskite	5.0
Cuprotungstite	4.0-5.0	Manganogrunerite	5.0-6.0	Teruggite	2.5
Curetonite	3.5	Manganokhomyakovite	5.0-6.0	Teschemacherite	1.5
Curienite	3.0	Manganolangbeinite	2.5-3.0	Tetra-ferri-annite	2.5-3.0
Curite	4.0-5.0	Manganonaujakasite	3.0-4.0	Tetranatrolite	5.0
Cuspidine	5.0-6.0	Manganonordite-(Ce)	5.0-5.5	Tetrarooseveltite	2.5
Cuzticite	3.0	Manganosegelerite	3.0-4.0	Tetrawickmanite	3.5-4.5
Cyanochroite	2.0-2.5	Manganosite	5.0-6.0	Thadeuite	3.5-4.0
Cyanophyllite	2.0	Manganotychite	4.0	Thalenite-(Y)	6.0-6.5
Cyanotrichite	2.0	Manganpyrosmalite	4.5	Thaumasite	3.5
Cymrite	2.0-3.0	Manganvesuvianite	6.0-7.0	Thenardite	2.5
Cyrllovite ^{^top}	4.0	Manjiroite	7.0	Theophrastite	3.5
Dachiardite-Ca	4.0-4.5	Mannardite	7.0	Thersemagnanite	1.5-2.0
Dachiardite-Na	4.0-5.0	Mansfieldite	3.5-4.0	Thermonatrite	1.0
Dalyite	7.5	Mantienneite	3.0	Thomasclarkite-(Y)	2.0-3.0
Damaraite	3.0	Mapimite	3.0	Thomasonite	5.0
Danalite	5.5-6.0	Marcasite	6.0-6.5	Thometzekite	4.0-5.0
Danburite	7.0	Marecottite	3.0	Thomsenolite	2.0
Dannemorite	5.0-6.0	Margarite	4.0	Thomsonite-Ca	5.0-5.5
Daqingshanite-(Ce)	5.0	Margarosanite	2.5-3.0	Thomsonite-Sr	5.0

Darapiosite	5.0	Marialite	5.5-6.0	Thorbastnasite	4.0-4.5
Darapskite	2.5	Maricite	4.0-4.5	Thoreaulite	5.5-6.0
Dashkovaite	1.0	Maricopaite	1.0-1.5	Thorikosite	3.0
Datolite	5.5	Marshite	2.5	Thorite	5.0
Daubreeite	2.0-2.5	Marsturite	6.0	Thorogummite	5.5
Davanite	5.0	Mascagnite	2.0-2.5	Thorosteenstrupine	4.0
Davidite-(Ce)	6.0	Massicot	2.0	Thortveitite	6.5
Davidite-(La)	6.0	Masutomilite	2.5	Thorutite	4.5-5.5
Davreuxite	2.0-3.0	Mathewrogersite	2.0	Thulite	6.0
Davyne	6.0	Matlockite	2.5-3.0	Tianshanite	6.0-6.5
Dawsonite	3.0	Matraite	3.5-4.0	Tiettaite	3.0
Deanesmithite	4.5-5.0	Mattheddleite	3.5-4.5	Tigers eye	6.5-7.5
Decrespignyite-(Y)	4.0	Matulaite	1.0	Tikhonkovite	3.5
Defernite	3.0	Matveevite	2.5	Tilasite	5.0
Deliensite	2.0	Mawbyite	4.0	Tinaksite	6.0
Deloneite-(Ce)	5.0	Maxwellite	5.0-5.5	Tincalconite	2.0
Deloryite	4.0	Mazzite	4.0-5.0	Tinsleyite	5.0
Delrioite	2.0	Mcallisterite	2.5	Tinticite	2.5
Delvauxite	2.5	Mcalpineite	3.0	Tinzenite	6.5-7.0
Demantoid	6.5-7.0	Mcauslanite	3.5	Tiptopite	3.5
Denisovite	4.0-5.0	Mccrillisite	4.5	Tirodite	6.0-6.5
Denningite	4.0	Mcgillite	5.0	Tisinalite	5.0
Derbylite	5.0	Mcguinnessite	2.5	Titanate	6.0
Desautelsite	2.0	Mckelveyite-(Nd)	3.0-3.5	Titanite	5.0-5.5
Descloizite	3.5	Mckelveyite-(Y)	3.5-4.0	Titanowodginite	5.5
Despujolsite	2.5	Medenbachite	4.5	Tlapallite	3.0
Devilline	2.5	Meerscham	2.0-2.5	Tobelite	2.0
Diaboleite	2.5	Megacyclite	2.0	Tobermorite	2.5
Diadochite	3.0-3.5	Megakalsilite	6.0	Todorokite	1.5
Diamond	10.0	Meionite	5.0-6.0	Tokkoite	4.0-5.0
Diaoyudaoite	8.0	Meixnerite	2.0	Tombarthite-(Y)	5.0-6.0
	6.5-		5.0-		

Diaspore	7.5	Melanocerite-(Ce)	6.0	Tomichite	6.0
Dickinsonite	3.5-4.0	Melanophlogite	6.5-7.0	Tooeleite	3.0
Dickite	1.5-2.0	Melanophlogite-beta	6.5-7.0	Topaz	8.0
Dickthomssenite	2.5	Melanterite	2.0	Torbernite	2.0-2.5
Dietrichite	2.0	Melilite	5.0-5.5	Tornebohmite-(Ce)	4.5
Dietzeite	3.5	Meliphanite	5.0-5.5	Tornebohmite-(La)	4.5
Dilithium	5.0	Melkovite	3.0	Torreyite	3.0
Dimorphite	1.5	Mellite	2.0-2.5	Tosudite	1.0-2.0
Dinite	1.0	Melonjosephite	5.0	Tounkite	5.0-5.5
Diopside	5.0-6.0	Mendipite	2.5-3.0	Tourmaline	7.0
Diopside	6.0	Mendozavilite	1.5	Traskite	5.0
Dioptase	5.0	Mendozite	3.0	Trechmannite	1.5-2.0
Dissakisite-(Ce)	6.5-7.0	Mereheadite	3.5	Trembathite	6.5
Dittmarite	5.0	Mereiterite	2.5-3.0	Tremolite	5.5-6.5
Dixenite	3.0-4.0	Merlinoite	4.5	Tremolite	5.0-6.0
Dollaseite-(Ce)	6.5-7.0	Merrihueite	5.0-6.0	Tridymite	6.5-7.0
Dolomite	3.5-4.5	Merwinite	6.0	Trigonite	2.0-3.0
Dolomite	3.5-4.0	Mesolite	5.0	Trikalsilite	6.0
Donbassite	2.0-2.5	Messelite	3.5	Trimerite	6.0-7.0
Donnayite-(Y)	3.0	Meta-aluminite	1.0-2.0	Trimounsite-(Y)	7.0
Donpeacorite	5.0-6.0	Meta-ankoleite	2.0-2.5	Triphylite	4.0-5.0
Dorallcharite	3.0-4.0	Meta-autunite	1.0	Triplite	5.0
Doyleite	2.5-3.0	Metaborite	5.0	Triplodite	4.5-5.0
Dozyite	2.5	Metadelrioite	2.0	Trippkeite	4.0
Dravite	7.0-7.5	Metahaiweeite	3.5	Tristramite	3.0-4.0
Dresserite	2.5-3.0	Metaheinrichite	2.5	Tritomite-(Ce)	5.5
Dreyerite	2.0-3.0	Metakahlerite	2.5	Tritomite-(Y)	4.0
Dufrenite	3.5-4.0	Metakirchheimerite	2.0-2.5	Trogerite	2.0-3.0
			2.0-		5.5-

Duftite-alpha	3.0	Metalodevite	2.5	Trolleite	6.0
Duftite-beta	3.0	Metanovacekite	2.5	Trona	2.5
Dugganite	3.0	Metarossite	1.0-2.0	Tsaregorodtsevite	6.0
Dukeite	3.0-4.0	Metasideronatrite	1.5-2.5	Tschermakite	5.0-6.0
Dumortierite	7.0	Metaswitzerite	2.5	Tschermigite	1.5-2.0
Dumortierite	8.5	Metatorbernite	2.5	Tschernichite	4.5
Dundasite	2.0	Metatyuyamunitite	2.0	Tschortnerite	4.5
Durangite	5.5	Meta-uranocircite	2.0-2.5	Tsepinite-Na	5.0
Dusmatovite	4.5	Meta-uranospinite	2.0-3.0	Tsumebite	3.5
Dussertite	3.5	Metavandendriesscheite	3.0	Tugarinovite	4.7
Dwornikite ^{^top}	2.0-3.0	Metavariscite	3.5	Tugtupite	4.0
Eakerite	5.5	Metavauxite	3.0	Tuliokite	3.0-4.0
Earlshannonite	3.0-4.0	Metavoltine	2.5	Tumchaite	4.5
Ecdemite	2.5	Metazellerite	2.0	Tundrite-(Ce)	3.0
Eckermannite	5.0-6.0	Metazeunerite	2.0-2.5	Tundrite-(Nd)	3.0
Edenite	6.0	Methanehydrate	2.5	Tunellite	2.5
Edgarbaileyite	4.0	Meurigite	3.0	Tungstenite	2.5
Edingtonite	4.0-5.0	Meyerhofferite	2.0	Tungstibite	2.0
Effenbergerite	4.0-5.0	Micheelsenite	3.5-4.0	Tungstite	2.5
Efremovite	2.0	Microcline	6.0	Tungusite	2.0
Eggletonite	3.0-4.0	Microlite	5.0-6.0	Turkestanite	5.5-6.0
Eglestonite	2.0-3.0	Microsommite	6.0	Turneaureite	5.0
Ehrleite	3.5	Miersite	2.5-3.0	Turquoise	5.0-6.0
Eifelite	5.0-6.0	Mikasaite	2.0	Tuscanite	5.5-6.0
Eitelite	3.5	Milarite	6.0	Tusionite	5.0-6.0
Ekanite	4.5	Mimetite	3.5-4.0	Tuzlaite	2.0-3.0
Ekaterinite	1.0	Minamiite	3.0-4.0	Tvalchrelidzeite	3.0
Ekatite	3.0	Minasgeraisite-(Y)	6.0-7.0	Tvedalite	4.5
Elaeolite	5.5-6.0	Minasragrite	1.0-2.0	Tweddillite	6.0-7.0
Elbaite	7.5	Mineevite-(Y)	4.0	Tychite	3.5
Ellenbergerite	6.5	Minehillite	4.0	Tyretskite	5.0
Elpasolite	2.5	Minium	2.5-	Tyrolite	1.5-

			3.0		2.0
Elpidite	7.0	Minnesotaite	1.5-2.0	Tyuyamunite ^{^top}	1.5-2.0
Elyite	2.0	Minrecordite	3.5-4.0	Ulexite	2.5
Embolite	1.5-2.0	Minyulite	3.5	Ulrichite	3.5
Embreyite	3.5	Mirabilite	1.5-2.0	Umbite	4.5
Emeleusite	5.0-6.0	Miserite	5.5-6.0	Umbozerite	5.0
Emerald	7.5-8.0	Mitridatite	3.5	Ungarettiite	6.0
Emmonsite	2.0-2.5	Mitscherlichite	2.5	Ungemachite	2.5
Endellite	1.0-2.0	Mixite	3.5-4.0	Ungursaite	7.0
Englishite	3.0	Mohrite	2.0-2.5	Uralborite	4.0
Enstatit	5.5	Moldavite	5.5	Uralolite	2.5
Enstatite	5.5	Moluranite	3.0-4.0	Uramphite	2.0-2.5
Eosphorite	5.0	Molybdite	3.0-4.0	Uraninite	5.0-6.0
Ephesite	3.5-4.5	Molybdoformacite	2.0-3.0	Uranmicrolite	5.5
Epididymite	5.5	Molybdomenite	3.5	Uranocircite	2.0-2.5
Epidote	6.0-7.0	Molybdophyllite	3.0-4.0	Uranophane	2.5
Epidote	7.0-7.5	Monazite-(Ce)	5.0-5.5	Uranophane-beta	2.5-3.0
Epistilbite	4.0-5.0	Monazite-(La)	5.0-5.5	Uranopolycrase	5.0-6.0
Epistolite	1.0-1.5	Monazite-(Nd)	5.0-5.5	Uranosphaerite	2.0-3.0
Epsomite	2.0-2.5	Monetite	3.5	Uranospinite	2.0-3.0
Ercitite	3.0-4.0	Mongolite	2.0	Uranotungstite	2.0
Ericaite	7.0-7.5	Monimolite	4.6	Uranpyrochlore	5.0
Erioalcalcite	2.5	Monohydrocalcite	2.0-3.0	Urusovite	4.0
Erionite	3.5-4.0	Monsmedite	2.0	Ushkovite	3.5
Erionite-Ca	3.5-4.0	Montebrasite	5.5-6.0	Usovite	3.5
Erionite-K	3.5-4.0	Monteregianite-(Y)	3.5	Ussingite	6.5
Erionite-Na	3.5-4.0	Montgomeryite	4.0	Utahite	4.0-5.0
Erlanite	3.5	Monticellite	5.0	Uvarovite	7.0-7.5

Ershovite	2.5-3.0	Montmorillonite	1.5-2.0	Uvarovite	6.5-7.0
Ertxiite	5.9	Montroyalite	3.5	Uvite	7.5
Erythrite	1.5-2.0	Montroydite	1.5-2.0	Uzonite ^{^top}	1.5
Esperanzaite	4.5	Moonstone	6.0-6.5	Valentinite	2.5-3.0
Esperite	5.0	Mooreite	3.0	Vanadinite	3.5-4.0
Esseneite	6.0	Moorhouseite	2.5	Vanadiumdravite	7.5
Ettringite	2.0-2.5	Mopungite	3.0	Vanadomalayaite	6.0
Euchroite	3.5-4.0	Mordenite	5.0	Vandenbrandeite	4.0
Euclase	7.5	Morelandite	4.5	Vandendriesscheite	3.0
Eucryptite	6.5	Morenosite	2.0-2.5	Vantasselite	2.0-2.5
Eudialyte	5.0-5.5	Morimotoite	7.5	Vanthoffite	3.5
Eudidymite	6.0	Morinite	4.0-4.5	Vanuralite	2.0
Eugsterite	1.0-2.0	Mosandrite	4.0	Varenesite	4.0
Eulytite	4.5	Moschelite	1.5-2.0	Variscite	4.0-4.5
Euxenite-(Y)	6.5	Mosesite	3.0-4.0	Variscite	4.0-5.0
Evansite	3.5-4.0	Mottramite	3.5	Varlamoffite	6.0-7.0
Eveite	4.0	Mountkeithite	2.0	Varulite	5.0
Evenkite	1.0	Mourite	3.0	Vashegyite	2.0-3.0
Eylettersite	3.0-4.0	Moydite-(Y)	1.0-2.0	Vaterite	3.0
Ezcurrite ^{^top}	3.0-3.5	Mozartite	6.0	Vauquelinite	2.5-3.0
Fabianite	6.0	Mrazekite	2.0-3.0	Vauxite	3.5
Fahleite	2.0	Mroseite	4.0	Vayrynenite	5.0
Fairbankite	2.0	Muirite	2.5	Veatchite	2.0
Fairchildite	2.5	Mukhinite	8.0	Vergasovaite	4.0-5.0
Fairfieldite	3.5	Mullite	6.0-7.0	Vermiculite	1.5-2.0
Falcondoite	2.0-3.0	Mundrabiliaite	1.0-2.0	Verplanckite	2.5-3.0
Faujasite	5.0	Munirite	1.0-2.0	Vertumnite	5.0
Faujasite-Ca	5.0	Murmanite	2.5-3.0	Vesignieite	3.5-4.0
Faujasite-Mg	5.0	Muscovite	2.0-2.5	Vesuvianite	6.5
			4.0-		3.5-

Faujasite-Na	5.0	Mushistonite	4.5	Veszelyite	4.0
Faustite	5.5	Muskoxite ^{^top}	3.0	Vicanite-(Ce)	5.5-6.0
Fayalite	6.5	Nabaphite	2.0	Viitaniemiite	5.0
Fedotovite	2.5	Nabesite	5.0-6.0	Villiaumite	2.5
Feinglosite	4.0-5.0	Nabiasite	4.0-5.0	Villyaellenite	4.0
Feklichevite	5.5	Nabokoite	2.0-2.5	Vimsite	4.0
Feldspar	6.0-6.5	Nacaphite	3.0	Vinogradovite	4.0
Felsobanyaite	1.5	Nacareniobsite-(Ce)	5.0	Viseite	3.0-4.0
Fenaksite	5.0-5.5	Nacrite	1.0	Vishnevite	5.0-6.0
Fencooperite	4.5-5.0	Nadorite	3.5-4.0	Vismirnovite	4.0
Fergusonite-(Ce)+A2376	5.5-6.5	Nafertisite	2.0-3.0	Vistepite	4.5
Fergusonite-(Nd)	5.5-6.5	Nahcolite	2.5	Vitusite-(Ce)	4.5
Fergusonite-beta-(Ce)	5.5-6.5	Nahpoite	1.0-2.0	Vivianite	1.5-2.5
Fergusonite-beta-(Nd)	5.5-6.5	Nalipoite	4.0	Vivianite	1.5-2.0
Fergusonite-beta-(Y)	5.5-6.5	Namansilite	6.0-7.0	Vladimirite	3.5
Fermorite	5.0	Nambulite	6.5-7.0	Vlasovite	6.0
Ferriallanite-(Ce)	6.0	Namuwite	2.0	Vochtenite	3.0
Ferribarrosite	5.0-6.0	Nanlingite	2.5	Volborthite	3.0
Ferri-clinoholmquistite	6.0	Nanpingite	2.5-3.0	Volkonskoite	1.5-2.0
Ferricopiapite	2.5-3.0	Nantokite	2.0-2.5	Volkovskite	2.5
Ferrierite	3.0-3.5	Narsarsukite	7.0	Voltaite	3.0-3.5
Ferrierite-K	3.0-3.5	Nasledovite	2.0	Vonbezingite	4.0
Ferrierite-Mg	3.0-3.5	Nasonite	4.0	Vonsenite	5.0
Ferrierite-Na	3.0-3.5	Nastrophite	2.0	Vuagnatite	6.0
Ferrilotharmeyerite	3.0	Natalyite	7.0	Vuonnemite	2.0-3.0
Ferrimolybdite	2.5-3.0	Natanite	5.0	Vuoriyarvite-K	4.5
Ferrinatriite	2.5	Natisite	3.0-4.0	Vyuntsphakhkite-(Y) ^{^top}	6.0-7.0
Ferripedrizite	6.0	Natrite	3.5	Wadeite	5.5-6.0

Ferripyrophyllite	1.5-2.0	Natroalunite	3.5-4.0	Wagnerite	5.0-5.5
Ferrisicklerite	4.0	Natroapophyllite	4.0-5.0	Wairakite	5.5-6.0
Ferristrunzite	4.0	Natrochalcite	4.5	Wakabayashilite	1.5
Ferrisurite	2.0-2.5	Natrodufrenite	3.5-4.5	Walentaite	3.0
Ferrisymplesite	2.5	Natofairchildite	2.5	Walkerite	3.0
Ferritaramite	5.0-6.0	Natrojarosite	2.5-3.5	Walkilldellite	3.0
Ferritschermakite	5.0-6.0	Natrolemoynite	3.0	Walkilldellite-(Fe)	2.0-3.0
Ferro-actinolite	5.0-6.0	Natrolite	5.5-6.0	Walpurgite	3.5
Ferro-aluminoceladonite	2.0-2.5	Natromontebasite	5.5	Walstromite	3.5
Ferro-anthophyllite	5.5-6.0	Natron	1.0	Walthierite	3.0-4.0
Ferroaxinite	6.5-7.0	Natronambulite	5.5-6.0	Wardite	5.0
Ferrobustamite	6.0	Natrophilite	4.5-5.0	Wardsmithite	2.5
Ferrocapholite	5.5	Natrophosphate	2.5	Warwickite	3.0-4.0
Ferroceladonite	2.0-2.5	Natrotantite	7.0	Wavellite	3.5-4.0
Ferrochloropargasite	5.0-6.0	Natroxalate	3.0	Wawayandaite	1.0
Ferro-edenite	5.0-6.0	Naujakasite	2.0-3.0	Waylandite	4.0-5.0
Ferrogedrite	5.5-6.0	Navajoite	1.5	Weberite	3.5
Ferroglaucophane	6.0	Nchwangingite	5.5	Weddellite	4.0
Ferrohexahydrite	2.0	Nealite	4.0	Weeksite	1.0-2.0
Ferrohogbomite-2N2S	6.0-7.0	Nefedovite	4.5	Wegscheiderite	2.5-3.0
Ferrohornblende	5.0-6.0	Neighborite	4.5	Weilerite	5.0
Ferrokentbrooksite	5.0-6.0	Nelenite	5.0	Weinebeneite	3.0-4.0
Ferrokinoshitalite	3.0	Nenadkevichite	5.0	Welinite-III	4.0
Ferronigerite-2N1S	9.0	Neotocite	3.0-4.0	Welinite-VIII	4.0
Ferronigerite-6N6S	8.5	Nepheline	6.0	Weloganite	3.5
Ferronordite-(Ce)	5.0-5.5	Nephrite	6.0-6.5	Welshite	6.0
Ferronordite-(La)	5.0	Nepouite	2.0-2.5	Wendwilsonite	3.0-4.0
Ferropargasite	5.0-6.0	Nepskoeite	1.5-2.0	Wenkite	6.0
Ferropyrosmalite	4.5	Neptunite	5.0-6.0	Weringite	7.0

Ferrichterite	5.0-6.0	Nesquehonite	2.5	Wesselsite	4.0-5.0
Ferrosilite	5.0-6.0	Neustadelite	4.5	Wheatleyite	1.0-2.0
Ferrostrunzite	4.0	Newberyite	3.0-3.5	Whewellite	2.5-3.0
Ferrotaaffeite-6N3S	8.0-8.5	Nickelaustinite	4.0	Whiteite-(CaFeMg)	4.0
Ferrotschermakite	5.0-6.0	Nickelbischofite	1.5	Whiteite-(CaMnMg)	3.5
Ferrotychite	4.0	Nickel-boussingaultite	2.5	Whiteite-(MnFeMg)	4.0
Ferrowodginite	5.5	Nickelhexahydrite	2.0	Whitlockite	5.0
Ferrowyllieite	4.0	Nickellotharmeyerite	4.5	Whitmoreite	3.0
Fersmanite	5.5	Nickelschneebergite	4.0-4.5	Wickenburgite	5.0
Fersmite	4.0-4.5	Nickel-zippeite	5.0-5.5	Wickmanite	4.0-4.5
Feruvite	7.0	Nickenichite	3.0	Widenmannite	2.0
Fettelite	3.5-4.0	Nierite	9.0	Widgiemoolthalite	3.5
Fianelite	3.0	Nifontovite	3.5	Wightmanite	5.5
Fibroferrite	2.0	Nikischerite	2.0	Wilhelmkleinite	4.5
Fiedlerite	3.5	Nimite	3.0	Wilhelmvierlingite	4.0
Fillowite	4.5	Ningyoite	3.0-4.0	Wilkinsonite	5.0
Finnemanite	2.5	Niobo-aeschynite-(Ce)	5.5	Willemite	5.5
Fleischerite	2.5-3.0	Niobo-aeschynite-(Nd)	5.0-6.0	Willhendersonite	3.0
Flinkite	4.5	Niobokupletskite	3.0-4.0	Wiluite	6.0
Florencite-(Ce)	5.0-6.0	Niobophyllite	3.0-4.0	Winchite	5.0-6.0
Florencite-(La)	5.0-6.0	Niocalite	6.0	Wiserite	2.5
Florencite-(Nd)	5.0-6.0	Niter	2.0	Witherite	3.0-3.5
Florensovite	5.0	Nitratine	1.5-2.0	Wohlerite	5.5-6.5
Fluellite	3.0	Nitrobarite	3.0	Wolfeite	4.5-5.0
Fluoborite	3.5	Nitrocalcite	1.0-2.0	Wollastonite-1A	5.0
Fluocerite-(Ce)	4.5-5.0	Nobleite	3.0	Wollastonite-2M	5.0
Fluocerite-(La)	4.0-5.0	Noelbensonite	4.0	Wollastonite-3A-4A-5A-7A	5.0
Fluorapatite	5.0	Nontronite	1.5-2.0	Wolsendorfite	5.0
Fluorapophyllite	4.0-5.0	Norbergite	6.0-6.5	Wonesite	2.5-3.0
Fluorbritholite-(Ce)	5.0	Nordenskioldine	5.5-6.0	Woodallite	1.5-2.0
Fluorcaphite	5.0	Nordite-(Ce)	5.0	Woodhouseite	4.5

Fluorellestadite	4.5	Nordite-(La)	5.0-6.0	Woodruffite	4.5
Fluorite	4.0	Nordstrandite	3.0	Woolridgeite	2.0-3.0
Fluorocannilloite	6.0	Normandite	5.0-6.0	Wroewolfeite	2.5
Fluoro-edenite	5.0-6.0	Norsethite	3.5	Wulfenite	2.5-4.0
Fluoro-ferroleakeite	6.0	Northupite	3.5-4.0	Wulfenite	3.0
Fluoro-magnesio-arfvedsonite	5.5	Nosean	5.5-6.0	Wulfingite	3.0
Fluorthalenite-(Y)	4.0-5.0	Novacekite	2.5	Wupatkiite	1.5-2.0
Foitite	7.0	Novgorodovaite	2.5	Wurtzite	3.5-4.0
Fontanite	3.0	Nsutite	7.0	Wustite	5.0-5.5
Foordite	6.0	Nullaginite	1.5-2.0	Wyartite	3.0-4.0
Formanite-(Y)	5.5-6.5	Nyboite ^{^top}	5.0-6.0	Wycheproofite	4.0-5.0
Formicaite	1.0	Obertiite	5.0	Wyllieite ^{^top}	4.0-4.5
Fornacite	2.0-3.0	Obisidian	5.0-5.5	Xanthoconite	2.5-3.0
Forsterite	6.0-7.0	Odinite	2.5	Xanthoxenite	2.5
Fossilized Wood	6.5-7.0	Odintsovite	5.0-5.5	Xenotime-(Y)	4.0-5.0
Fourmarierite	3.0-4.0	Offretite	4.0-4.5	Xiangjiangite	1.0-2.0
Fraipontite	2.5	Ogdensburgite	2.0	Ximengite	4.5
Francevillite	3.0	Ojuelaite	3.0	Xitieshanite	3.0
Franciscanite-III	4.0	Okayamalite	5.5	Xonotlite ^{^top}	6.5
Franciscanite-VIII	4.0	Okenite	5.0	Yafsoanite	5.5
Francisite	3.0-4.0	Okhotskite-(Mn++)	6.0	Yag	7.5-8.0
Francoisite-(Nd)	3.0	Olekminskite	3.0	Yagiite	5.0-6.0
Franconite	4.0	Olenite	7.0	Yakhontovite	2.0-3.0
Frankamenite	5.5	Olgite	4.5	Yanomamite	5.5-6.0
Frankdicksonite	3.0	Oligoclase	7.0	Yaroslavite	4.5
Frankhawthorneite	3.0-3.5	Olivenite	3.0	Yavapaiite	2.5-3.0
Franklinfurnaceite	3.0	Olivine	6.5-7.0	Yeatmanite	4.0
Franklinite	5.5-6.5	Olmsteadite	4.0	Yecoraite	3.0
Franklinphilite	4.0	Olsacherite	3.0-3.5	Yedlinite	2.5

Fransoletite	3.0	Olshanskyite	4.0	Yftsite-(Y)	3.5-4.0
Franzinite	5.0	Olympite	4.0	Yingjiangite	3.0-4.0
Fredrikssonite	6.0	Ominelite	7.0	Yoderite	6.0
Freedite	3.0	Omphacite	5.0-6.0	Yttrobetafite-(Y)	4.5-5.5
Fresnoite	3.0-4.0	Oneillite	5.0-6.0	Yttrocerite	4.0-5.0
Friedelite	4.0-5.0	Opal	5.5-6.5	Yttrocrasite-(Y)	5.5-6.0
Fritzscheite	2.0-3.0	Ordonezite	6.5	Yttropyrochlore-(Y)	4.5-5.5
Frolovite	3.5	Orebroite-III	4.0	Yttrotungstite-(Y)	1.0
Frondelite	4.5	Orebroite-VIII	4.0	Yuanfuliite	6.0-6.5
Fuenzalidaite	2.5-3.0	Organovaite-Mn	5.0	Yugawaralite	4.5
Fukalite	4.0	Organovaite-Zn	5.0	Yukonite	2.0-3.0
Fullerite	3.5	Orientite	4.0-5.0	Yvonite ^{^top}	3.5-4.0
Furongite ^{^top}	2.0-3.0	Orlymanite	4.0-5.0	Zabuyelite	3.0
Gabrielsonite	3.5	Orpiment	1.5-2.0	Zaherite	3.5
Gadolinite-(Ce)	6.5-7.0	Orschallite	4.0	Zairite	4.5
Gadolinite-(Y)	6.5-7.0	Orthobrannerite	5.5	Zajacite-(Ce)	3.5
Gagarinite-(Y)	4.5	Orthochamosite	2.0	Zakharovite	2.0
Gahnite	7.5-8.0	Orthochevkinite	5.5	Zalesiite	2.0-3.0
Gahnite	8.0	Orthochrysotile	2.5-3.0	Zanazziite	5.0
Gainesite	4.0	Orthoclase	6.0	Zaratite	3.0-3.5
Gaitite	5.0	Orthojoaquinite-(Ce)	5.5	Zavaritskite	2.0-2.5
Galileiite	4.0	Orthojoaquinite-(La)	5.0	Zdenekite	1.5-2.0
Galkhaite	3.0	Orthominasragrite	1.0	Zektzerite	6.0
Gallobaudantite	4.0	Orthowalpurkite	4.5-5.0	Zellerite	2.0
Gamagarite	4.5-5.0	Osarizawaite	3.0-4.0	Zemkorite	2.0
Gananite	3.5	Osumilite-(Fe)	5.0-6.0	Zeophyllite	3.0
Ganomalite	3.0	Osumilite-(Mg)	5.0-6.0	Zeunerite	2.5
Ganophyllite	4.0-4.5	Oswaldpeetersite	2.0-3.0	Zharchikhite	4.5
Garnet	7.0-	Otavite	3.5-	Zhemchuzhnikovite	2.0

	7.5		4.0		
Garnierite	2.5-3.0	Otjissimeite	3.0	Zhonghuacerite-(Ce)	4.5
Garronite	4.0-5.0	Ottrelite	6.0-7.0	Zimbabweite	5.0-5.5
Gartrellite	1.0-2.0	Otwayite	4.0	Zincgartrellite	4.5
Garyansellite	4.0	Oursinite	3.0-3.5	Zincite	4.5
Gasparite-(Ce)	5.0	Overite	3.5-4.0	Zinc-melanterite	2.0
Gaspeite	4.0-5.0	Oxammite	2.5	Zincobotryogen	2.5
Gatehouseite	4.0	Oyelite ^{^top}	5.0	Zincocopiapite	2.0
Gatelite-(Ce)	6.0-7.0	Pabstite	6.0	Zincohogbomite-2N2S	7.0
Gatumbaite	4.0-5.0	Paceite	1.5	Zincovoltaite	3.0
Gaudefroyite	6.0	Pachnolite	3.0	Zincowoodwardite	1.0
Gaultite	6.0	Paganoite	1.0-2.0	Zincowoodwardite-1T	1.0
Gaylussite	2.5	Pahasapaite	4.5	Zincowoodwardite-3R	1.0
Gearsutite	2.0	Painite	8.0	Zincrosasite	4.5
Gebhardtite	3.0	Palenzonaite	5.0-5.5	Zincsilite	1.5-2.0
Gedrite	5.5-6.0	Palermoite	5.5	Zinc-zippeite	5.0-5.5
Gehlenite	5.0-6.0	Palmierite	2.0	Zinnwaldite	3.5-4.0
Geigerite	3.0	Palygorskite	2.0-2.5	Zippeite	2.0
Geminite	3.0-3.5	Panasqueiraite	5.0	Zircon	7.5
Genthelvite	6.0-6.5	Papagoite	5.0-5.5	Zirconolite-2M	5.5
Georgbokiite	4.0	Parabariomicrolite	4.0	Zirconolite-3O	5.5
Georgeericksenite	3.0-4.0	Parabrandtite	3.0-4.0	Zirconolite-3T	5.5
Georgeite	1.0-2.0	Parabutlerite	2.5	Zircophyllite	4.0-4.5
Georgiadesite	3.5	Paracelsian	6.0	Zircosulfate	2.5-3.0
Gerasimovskite	2.0	Parachrysotile	2.5-3.0	Zirkelite	5.5
Gerenite-(Y)	5.0	Paracoquimbite	2.5	Zirklerite	3.5
Gerhardtite	2.0	Paradamite	3.5	Zirsinalite	5.0
Gerstleyite	2.5	Parafransoletite	2.5	Zodacite	4.0
Gerstmannite	4.5	Paragonite	2.5	Zoisite	6.5
Getchellite	1.5-2.0	Parahopeite	3.5	Zorite	3.0-4.0
Gibbsite	2.5-3.0	Parakeldyshite	5.5-6.0	Zunyite	7.0
					5.0-

Gillespite	4.0	Parakuzmenkoite-Fe	5.0	Zwieselite	5.5
Gilmarite	3.0	Paralabuntsovite-Mg	6.0	Zykaite ^top	2.0
Giniite ^top	3.0-4.0	Paralaurionite	3.0		
		Paralstonite ^top	4.0-4.5		