

# Magnetic Susceptibility Index for Gemstones

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Magnetic responses are standardized to 1/2" X 1/2" N-52 magnet cylinders.

Colorless and extremely pale stones of any species tend to be Inert (diamagnetic).

Black opaque stones of many species are strongly magnetic and may Pick Up or Drag.

Pick Up and Drag responses are weight-dependent. Direct responses on the Index apply to gems 1-4cts.

Larger gems may be too heavy to Pick Up or Drag. Smaller non-Garnet gems with strong magnetism may Pick Up.

Gemstone	Response Range	SI X 10 (-6) Range	Cause of Color
<b>Actinolite</b>			
Black Nephrite Jade	Strong	321 SI	Iron
Green Nephrite Jade	Moderate to Strong	91-312	Iron
White/Yellow Nephrite Jade	Inert	< 0 (diamagnetic)	none, some Iron
Green Pargasite	Inert	< 0 (diamagnetic)	Iron, Vanadium
Orangey brown Pargasite	Weak	35 SI	Iron
<b>Afghanite</b> (blue)	Inert	< 0 (diamagnetic)	Chromium, Vanadium
<b>Amber</b> (any color)	Inert	< 0 (diamagnetic)	Organic
<b>Amblygonite-Montebrasite</b> (blue, green)	Inert	< 0 (diamagnetic)	Iron, Manganese
<b>Andalusite</b>	Inert to Weak	< 0 -26	Manganese
<b>Apatite</b> (any color)	Inert (Weak in rare cases)	< 0 (diamagnetic)	Manganese, Rare-earth
<b>Astrophyllite</b>	Strong	1146-1328	Iron, Manganese
<b>Axinite</b>	Drags	603-616 SI	Iron, Manganese
<b>Azurite</b> (opaque)	Strong	382 SI	Copper
<b>Barite</b> (pale brown)	Inert	< 0 (diamagnetic)	Unknown
<b>Bastnasite</b>	Drags (Picks Up under 1ct)	773-898 SI	Cerium (rare-earth)
<b>Benitoite</b>	Inert	< 0 (diamagnetic)	Iron-Titanium intervalence charge transfer
<b>Beryl</b>			
Aquamarine (pale to medium blue)	Weak to Moderate	20-100	Iron
Golden / Yellow Beryl	Inert to Weak	< 0-48	Iron
Heliodor (yellowish green)	Inert	< 0 (diamagnetic)	Chromium, Iron
Morganite	Inert	< 0 (diamagnetic)	Manganese
Blue Beryl (Maxixe)	Inert	< 0 (diamagnetic)	Color centers
Red Beryl (transparent Bixbite)	Strong	117 SI	Manganese
Green Beryl	Inert	< 0 (diamagnetic)	Chromium, Vanadium, Iron
Emerald	Weak	20-56	Chromium, Vanadium
<b>Synthetic Emerald</b>	Weak to Moderate	26-143	Chromium, Vanadium
<b>Synthetic Red Beryl</b>	Moderate	126 SI	Cobalt
<b>Synthetic Blue Beryl</b>	Strong (Drags under 0.5ct)	218 SI	Iron
<b>Bismuth</b> (native metal)	Diamagnetic	< 0 (diamagnetic)	Bismuth
<b>Bumblebee "Jasper"</b> (mineral aggregate)	Moderate to Strong	Varies within the stone	Sulphur, Hematite

<b>Calcite</b>			
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Most Calcite Color Variations	Inert	< 0 (diamagnetic)	Various Metals
Pink Calcite	Weak	22-26	Cobalt
<b>Cassiterite</b> (pale yellow)	Inert	< 0 (diamagnetic)	Iron
<b>Cavansite</b> (stabilized cab)	Moderate	> 82	Vanadium
<b>Celestite</b> (blue)	Inert	< 0 (diamagnetic)	Color Centers
<b>Charoite</b>	Weak	56-69	Manganese
<b>Chondrodite</b>	Inert	< 0 (diamagnetic)	low Iron, Manganese
<b>Chromite</b>	Drags	Not Tested	Iron, Chromium
<b>Chrysoberyl</b>			
Chrysoberyl	Weak to Moderate	20-127	Iron
Alexandrite	Weak	43 SI	Chromium
<b>Synthetic Alexandrite Chrysoberyl</b>	Inert	< 0 (diamagnetic)	Chromium
<b>Chrysocolla</b>	Moderate-Strong	104-239	Copper
<b>Clinohumite</b>			
Red Clinohumite	Weak	65 SI	Iron, Manganese
Orange Clinohumite	Strong	334 SI	Manganese, Iron
<b>Clinozoisite</b>	Drags	373 SI	Iron
<b>Cobaltite</b> (purity unknown)	Strong	No Data	Cobalt, Arsenic
<b>Copper</b>			
Pure Copper	Inert	< 0 (diamagnetic)	Copper
Native Copper (impurities)	Strong	No Data	Copper (and impurities)
<b>Coral</b>	Inert	< 0 (diamagnetic)	Organic
<b>Corundum</b>			
Black Star Sapphire	Weak to Moderate	20-143	Titanium, Iron
Emery (brown)	Moderate	130 SI	Iron
Blue Sapphire (of most origins)	Weak to Moderate	22-82	Iron-Titanium intervalence charge transfer
Blue Sapphire (from Sri Lanka and Canada)	Inert	< 0 (diamagnetic)	Iron-Titanium intervalence charge transfer
Fancy Color Sapphires	Weak to Moderate	< 20-191	Chrom., Titanium, Iron
Ruby	Weak to Moderate	26-109	Chromium, Titanium, Iron
<b>Synthetic Ruby</b> (red corundum)	Inert to Strong	< 0-195	Chromium, Titanium
<b>Synthetic Sapphire</b> (any color except red)	Inert	< 0 (diamagnetic)	Titanium
<b>Cubic Zirconium</b>			
Most CZ colors	Inert to Weak	< 0-39	Various
Pink CZ	Drags to Picks Up	430-5433	Rare-earth Elements
Color Change CZ (red to green)	Drags to Picks Up	1237 SI	Rare-earth Elements
<b>Cuprite</b> (opaque)	Weak	74 SI	Copper
<b>Danburite</b> (yellow)	Inert	< 0 (diamagnetic)	Rare Earth Elements
<b>Diamond</b> (colorless, fancy colors, black )	Inert	< 0 (diamagnetic)	Carbon, Nitrogen, Boron, Irradiation
<b>HTHP Synthetic Diamond</b> (yellow,blue,colorless)	Inert to Picks Up (metal inclusions)	< 0 to Ferromagnetic	Nitrogen, Boron
<b>CVD Synthetic Diamond</b> (colorless)	Inert	< 0 (diamagnetic)	N/A
<b>Diaspore</b>	Weak	39-48	Manganese, Iron, Chromium

<b>Diopside</b>			
Black Star Diopside	Picks Up	8,925- 9,960 Ferrimagnetic	Iron (magnetite)
Chrome Diopside (chrome green)	Weak to Strong	56-296	Chromium, Iron
Vanadium Diopside (mint green)	Weak	< 20-39	Vanadium, Iron
Green Diopside (grayish green)	Strong	122 SI	Iron, Chromium
Yellow Diopside	Weak	< 20	Iron
Violane (blue opaque Diopside)	Inert	< 0 (diamagnetic)	Manganese
<b>Dumortierite</b>	Weak	< 20	Various
<b>Enstatite</b>			
Hypersthene (opaque black)	Drags to Picks Up	> 1298	Iron
Bronzite (opaque brown)	Drags to Picks Up	No Data	Iron
Enstatite (transparent brown, green)	Drags	308-681	Iron
<b>Eosphorite</b>	Picks Up	2365 SI	Manganese, Iron
<b>Epidote</b>	Drags	491 SI	Iron
<b>Euclase</b> (pale blue)	Inert	< 0 (diamagnetic)	Iron
<b>Eudialite</b> (transparent to opaque)	Strong to Drags	345-469	Manganese, Iron
<b>Feldspar Group</b>			
<b>Andesine Feldspar</b>			
Untreated (yellow, reddish brown) Andesine	Weak	< 20	Iron, Copper
Diffused (red & green) Andesine	Weak	< 20	Copper, Iron
<b>Bytownite Feldspar</b>	Weak	35 SI	Iron
<b>Labradorite Feldspar</b>			
Oregon Sunstone (with copper schiller)	Weak	< 29	Microscopic Copper Inclusions, Iron
Oregon Sunstone (red, green)	Weak	< 29	Microscopic Copper Inclusions, Iron
Spectral Labradorite	Inert	< 0 (diamagnetic)	Interference Colors
Spectral Labradorite with magnetite inclusions	Weak to Picks Up	< 20-1779	Interference Colors
Yellow Labradorite	Weak	< 26	Iron
<b>Microcline Feldspar</b>			
Amazonite	Inert	< 0 (diamagnetic)	Lead, Color Centers
<b>Oligoclase Feldspar</b>			
Sunstone (with Hematite, African & Indian)	Inert	< 0 (diamagnetic)	Iron (Hematite)
<b>Orthoclase Feldspar</b>			
Moonstone Orthoclase	Inert	< 0 (diamagnetic)	Scattering of Light
Yellow (Noble) Orthoclase	Weak to Moderate	65-104	Iron
<b>Fluorite</b> (any color)	Inert	< 0 (diamagnetic)	Color Centers
<b>Gadolinite</b> (opaque)	Picks Up	8,780 SI	Iron, Beryllium, Rare-earth Elements
<b>Garnet Group</b>			<b>Primary Garnet Chromophore(s)</b>
<b>Almandine Garnet</b>	Picks Up	1926-3094	Iron
<b>Andradite Garnet</b>			
Demantoid Garnet	Picks Up	2253-2752	Iron, Chromium
Brown Andradite & Topazolite	Picks Up	2559-2907	Iron
Melanite (black) Garnet	Picks Up	1866 SI	Iron, Titanium
Irridescent Andradite	Picks Up	2930 SI	Interference Colors

<b>Grossular Garnet</b>			
Hessonite (pale to dark yellow/orange)	Moderate to Strong	91-308	Iron, Manganese
Hydrogrossular (green, pink)	Weak to Strong	74-339	Iron, Chromium, Manganese
Mali Garnet	Drags	234-720	Iron
Green Grossular (including Tsavorite & Merelani)	Weak to Strong	20-336	Vanadium, Chromium, Iron
Rosolite (pink)	Strong	147 SI	Manganese
<b>Pyrope Garnet</b>			
Standard Pyrope Garnet	Picks Up	1163-1971	Iron, Chromium, Vanadium
Rhodolite Garnet	Picks Up	1007-1840	Iron, Chromium, Vanadium, Titanium
Malaya Garnet	Picks Up	1127-2689	Manganese, Chromium, Vanadium, Iron, Titanium
Chrome Pyrope	Drags to Picks Up	454-999	Chromium, Iron
Pastel Pyrope	Drags to Picks Up	618-1181	Manganese, Chromium, Vanadium, Iron, Titanium
Color-Change Pyrope	Picks Up	1445-2326	Manganese, Iron, Chromium, Vanadium, Titanium
<b>Spessartine Garnet</b>			
Spessartine Garnet	Picks Up	4301-4728	Manganese, some Iron
Color-Change Spessartine	Picks Up	2435-4179	Manganese, Iron, Chromium, Vanadium, Titanium
Malaya Garnet	Picks Up	2734-3089	Manganese, Iron, Chromium, Vanadium, Titanium
<b>Uvarovite Garnet</b>	Picks Up	> 780	Iron, Chromium
<b>Synthetic Garnet</b>			
GGG (Gadolinium Gallium Garnet) Any Color	Picks Up	6219-7404	Gadolinium (colorless) and Various dopants
SGG (Samarium Gadolinium Garnet) Yellow	Strong	291 SI	Samarium (rare-earth)
YAG (Yttrium Aluminum Garnet) Yellow	Inert to Weak	< 0-35	Various
YAG (Yttrium Aluminum Garnet) Green	Inert to Strong	< 0-278	Chromium
YAG (Yttrium Aluminum Garnet) Violet	Weak	30 SI	Neodymium
<b>Gaspeite</b>	Strong	859 SI	Nickel, Iron
<b>Glass (man-made)</b>			
Most Glass Colors	Inert	< 0 (diamagnetic)	Various
Blue Glass	Inert to Weak	< 0-61	Cobalt
Goldstone Glass (various colors)	Moderate to Strong	135-221	Copper particles, Cobalt, Manganese, Chromium
Glass/Garnet Doublet	Inert Glass side/ Strong Garnet side	794-942	Iron
<b>Gold (pure 24k)</b>	Inert	< 0 (diamagnetic)	Gold
<b>Hauyne</b>	Weak	Unknown	Color Centers
<b>Hematite (natural)</b>	Picks Up only by rare-earth magnet	2604-6853	Iron
<b>Hematine (imitation Hematite)</b>	Picks Up	> 86,000 Ferromagnetic	Iron
<b>Hemimorphite (blue)</b>	Inert	< 0 (diamagnetic)	Copper
<b>Howlite (white or dyed)</b>	Inert	< 0 (diamagnetic)	None or Man-made Dyes
<b>Idocrase (green)</b>	Strong	217-233	Iron
<b>Iolite</b>	Moderate-Strong	105-200	Iron
<b>Iron (native element)</b>	Picks Up	Ferromagnetic	Iron
<b>Ivory</b>	Inert	< 0 (diamagnetic)	Organic
<b>Jadeite Jade</b>			
Green Jadeite	Weak to Moderate	65-104	Chromium, Iron
Orange Jadeite	Weak	< 20	Iron

Red Jadeite	Weak to Moderate	40-122	Iron
Purple Jadeite	Weak to Moderate	22-130	Manganese, Iron
White/Yellow Jadeite	Inert to Weak	< 0-48	None
Black Jadeite	Picks Up	2070 SI	Iron
<b>Jeremejevite</b>	Inert	<0 (diamagnetic)	Iron (intervalence charge transfer)
<b>Jet</b>	Inert	< 0 (diamagnetic)	Organic Carbon
<b>Kornerupine</b>	Moderate to Strong	135-282	Iron
<b>Kyanite</b>			
Blue Kyanite	Inert	< 0 (diamagnetic)	Iron- Titanium intervalence charge transfer
Green Kyanite	Weak	61 SI	Iron, Vanadium
Orange Kyanite	Moderate	95 SI	Iron and/or Manganese
<b>Lapis Lazuli</b>	Inert	< 0 (diamagnetic)	Sulfur, Color Centers
<b>Lazulite</b> (transparent)	Strong	No Data	Iron
<b>Libyan Desert Glass</b> (natural glass)	Inert	< 0 (diamagnetic)	Iron
<b>Magnetite</b>	Picks Up	Ferrimagnetic	Iron
<b>Malachite</b>	Drags	477 SI	Copper
<b>Maw Sit Sit</b>	Moderate to Strong	139-230	Chromium, Iron
<b>Moldavite</b> (natural glass)	Weak	69 SI	Iron
<b>Muscovite/Mica</b>			
Lepidolite (lavender)	Inert	< 0 (diamagnetic)	Lithium
Fuchsite	Weak	< 20-69	Chromium, Iron
<b>Nicolite</b>	Moderate	No Data	Nickel, Arsenic
<b>Nummrite (Anthophyllite &amp; Gedrite)</b>	Drags	1094 SI	Interference colors in black substrate (iron)
<b>Obsidian</b>			
Mahogany Obsidian	Picks Up	1953 SI	Iron
Opaque Obsidian	Drags	304 -750	Iron
Translucent Obsidian	Strong	247 SI	Iron
Transparent Obsidian (black)	Weak to Moderate	74 -95	Iron
Transparent Obsidian (near-colorless)	Weak	22 SI	Iron
<b>Opal</b>			
Prescious Opal (with play of color)	Inert	< 0 (diamagnetic)	Light Diffraction
Common Opal (blue, pink, white)	Inert	< 0 (diamagnetic)	Copper, Diamagnetic Impurities
Blue Jelly Opal(no play of color)	Inert	< 0 (diamagnetic)	Light Scattering
Blue Opal (Chrysocolla in Opal)	Inert	<0 (diamagnetic)	Copper in Microscopic Gem Silica inclusions
Yellow and Orange Fire Opal (Mexico)	Inert	<0 (diamagnetic)	Iron in Microscopic Iron Oxide Inclusions
Yellow and Orange Fire Opal (Oregon & Brazil)	Weak	<20- 39	Iron in Microscopic Iron Oxide Inclusions
Prase Opal	Weak	< 20	Nickel in Microscopic Chrysoprase Inclusions
Greenish Yellow "Kiwi" Opal (Madagascar)	Weak	< 0- 26	probably Iron, possibly Manganese
Boulder & Matrix Opal	Strong to Drags	Not Tested	Light Diffraction, Iron in the Host Matrix
<b>Pearl</b>	Inert	< 0 (diamagnetic)	Organic
<b>Pectolite</b> (blue Larimar)	Inert	< 0 (diamagnetic)	Copper
<b>Peridot</b>			
Green Peridot with saturated color	Drags	417-590	Iron

Near-colorless Peridot (Forsterite)	Weak	52 SI	Iron
<b>Pezzottaite</b> (Beryl Group)	Weak	< 20	Manganese
<b>Plastic</b>	Inert	< 0 (diamagnetic)	Various
<b>Platinum</b>	Strong	No data	Platinum
<b>Prehnite</b> (green)	Weak to Moderate	26-122	Iron
<b>Psilomelane</b>	Strong to Drags	343-1007	Manganese
<b>Pyrite</b>	Weak	43 SI	Iron-Sulphur properties
<b>Pyromorphite</b> (opaque)	Inert	< 0 (diamagnetic)	Unknown
<b>Pyrrhotite</b>	Picks Up	Ferromagnetic	Iron
<b>Quartz (macro-crystalline)</b>			
Amethyst	Inert	< 0 (diamagnetic)	Color Centers
Citrine	Inert (Weak in Madeira Citrine)	< 0 (26 SI Madeira Citrine)	Irradiation, some Iron
Rock Crystal (colorless Quartz)	Inert	< 0 (diamagnetic)	None
Rose Quartz	Inert	< 0 (diamagnetic)	Manganese & Iron in Microscopic Inclusions
Smoky Quartz	Inert	< 0 (diamagnetic)	Irradiation
<b>Quartz with Inclusions</b>			
Rutile, Hematite & Most Other Inclusions	Inert	< 0 (diamagnetic)	Varies with type of Inclusions
Tourmalinated Quartz	Weak	43-56	Iron, Copper
Green Quartz (Hedenbergite Inclusions)	Weak	56 SI	Iron
Paraiba Quartz (Blue Paraiba Tourmaline Inclusion.)	Weak	56 SI	Copper Manganese
Tiger's Eye	Inert to Picks Up	< 0-3889 (varies with iron)	Iron oxide, Crocidolite
Hawk's Eye	Weak	< 20	Iron oxide, Crocidolite
Pietersite	Inert to Strong	< 0-305 (varies with iron)	Iron Oxide, Crocidolite
<b>Chalcedony Quartz</b> (microcrystalline)			
Most Agates & Jaspers	Inert	< 0 (diamagnetic)	Iron in Microscopic Iron Oxide Inclusions
Red Jasper	Weak to Picks Up	69-8836	Iron in Microscopic Iron Oxide Inclusions
Mahogany Jasper	Strong	217 SI	Iron in Microscopic Iron Oxide Inclusions
Bloodstone	Weak to Strong	26-521	Iron in Microscopic Iron Oxide Inclusions
Carnelian	Inert	< 0 (diamagnetic)	Iron in Microscopic Iron Oxide Inclusions
Chrysoprase (pale green to medium green)	Weak to Strong	42-224	Nickel in Microscopic Willemseite Inclusions
Gem Silica (Chrysocolla in Chalcedony)	Inert to Moderate	<0-82	Copper in Microscopic Chrysocolla Inclusions
Blue Chalcedony/Purple Chalcedony	Inert	< 0 (diamagnetic)	Unknown
Fire Agate	Picks Up	3975 SI	Iron, light scattering
Chrome Chalcedony (Mtorolite)	Inert	< 0 (diamagnetic)	Chromium in Micro. Chromium Oxide Inclusions
Myrickite (Agatized Cinnabar)	Strong	Varies within the stone	Mercury, Inclusions with Iron and/or Manganese
Onyx	Inert	< 0 (diamagnetic)	Iron in Microscopic Iron Oxide Inclusions
<b>Quartzite</b>			
Aventurin Quartz	Inert to Weak	< 0-27	Chromium, Iron
<b>Rhodochrosite</b>	Picks Up	3515-5269 SI	Manganese
<b>Rhodonite</b>	Picks Up	3610-3936	Manganese
<b>Richterite</b> (blue opaque)	Moderate	113 SI	Iron, Titanium
<b>Rutile</b>			
Opaque Metallic Gray	Strong	122 SI	Iron, Titanium

Transparent Red	Strong	327 SI	Iron, Titanium
<b>Synthetic Rutile</b> (transparent colorless)	Inert to Very Weak	< 0 (diamagnetic)	Rare-earth Elements
<b>Scapolite</b> (yellow, purple)	Inert	< 0 (diamagnetic)	Color Centers
<b>Selenite</b> (colorless)	Inert	< 0 (diamagnetic)	none
<b>Scheelite</b> (transparent yellow)	Inert	< 0 (diamagnetic)	Rare-earth Elements
<b>Serpentine</b> (opaque)	Drags to Picks Up	363-1519	Iron, Chromium, Nickel
<b>Shell</b>	Inert	< 0 (diamagnetic)	Organic
<b>Siderite</b> (transparent)	Picks Up	4,924 SI	Iron
<b>Sillimanite</b>			
Green/ Yellow Sillimanite	Weak	35-52 SI	Iron, Chromium
Fibrolite (gray Sillimanite)	Weak	< 20	Iron
<b>Silver</b> (native element)	Inert	< 0 (diamagnetic)	Silver
<b>Sinhalite</b>			
Yellow/Brown	Weak to Strong	78 SI	Iron
Brown	Strong	148-152 SI	Iron
<b>Smithsonite</b>			
Pink Smithsonite	Inert	< 0 (diamagnetic)	Manganese, Cobalt
Blue Smithsonite	Weak	< 20	Copper
Green Smithsonite	Moderate to Strong	No Data	Copper
Yellow Smithsonite	Weak	43 SI	Cadmium, Iron
<b>Sodalite</b>			
Sodalite (translucent to opaque)	Inert to Weak	< 0-48	Color Centers
Hackmanite (transparent)	Inert	< 0 (diamagnetic)	Color Centers
<b>Sphalerite</b> (orange, yellow)	Inert	< 0 (diamagnetic)	Iron
<b>Sphene (Titanite)</b>			
Yellow/Brown Sphene	Weak to Strong	30-78	Rare-earth Elements, Iron
Green Sphene	Weak	35-52	Chromium, Rare-earth Elements, Iron
<b>Spinel</b>			
Cobalt (ghanospinel)	Weak to Strong	48-182 SI	Cobalt, Iron
Pale Spinel colors	Inert to Weak	< 0-48	Iron, Cobalt, Chromium
Pink, Purple, Red, Blue, Black Spinel (transparent)	Weak to Moderate	48-104	Iron, Cobalt, Chromium
Hercynite Black Spinel (opaque)	Drags to Picks Up	1263-1328	Iron
<b>Synthetic Spinel</b>			
Synthetic Mint Green Spinel	Inert to Moderate	< 0-122	Manganese, Chromium
Synthetic Spinel (most colors)	Inert (blue is weak in rare cases)	< 0 (diamagnetic)	Various
<b>Spodumene</b>			
Kunzite (pink, purple, some fading)	Inert	< 0 (diamagnetic)	Irradiation, Chromium
Pale Yellow/Green Spodumene (fades in light)	Inert to Weak	< 0 -56	Irradiation, Chromium
Hiddenite (pale green, permanent color)	Weak	65 SI	Chromium, Iron
<b>Staurolite</b>			
Transparent Staurolite	Picks Up	927-1054	Iron, Titanium
Opaque Staurolite	Drags	890 SI	Iron
<b>Strontium Titanite</b>	Inert	< 0 (diamagnetic)	None

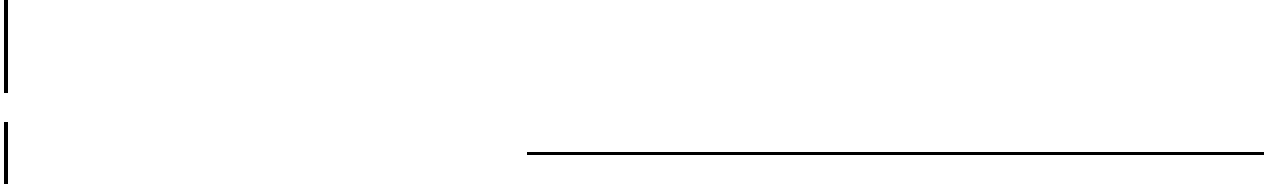
<b>Sugilite</b>	Drags to Picks Up	556-950	Manganese, Iron
<b>Tantalite</b>	Picks Up	No Data	Manganese
<b>Titanium</b> (native element)	Weak	No Data	Titanium
<b>Topaz</b>			
Blue, Pink, Sherry, Brown, Green Topaz	Inert	< 0 (diamagnetic)	Color Centers, Chromium
Imperial Topaz	Inert	< 0 (diamagnetic)	Color Centers, Chromium
<b>Tortoise Shell</b>	Inert	< 0 (diamagnetic)	Organic
<b>Tourmaline Group</b>			
Black (Schorl)	Drags	924 SI	Iron
Brown (Dravite)	Inert	< 0 (diamagnetic)	Iron-Titanium intervalence charge transfer
Chrome Tourmaline (Dravite)	Inert	< 0 (diamagnetic)	Chromium
Colorless Achroite (Elbaite)	Inert	< 0 (diamagnetic)	N/A
Cuprian Paraiba any color (Elbaite)	Strong	221-399	Copper, Manganese, Titanium
Medium to Dark Green (Elbaite)	Strong to Drags	148-418	Iron, Chromium, Vanadium
Browish Olive Green (Species?)	Moderate to Strong	74-252	Iron, Chromium, Vanadium
Mint Green (Vanadian Elbaite)	Moderate	122 SI	Vanadium, Chromium, Iron
Medium to Dark Blue Indicolite (Elbaite)	Drags	313-369	Iron
Pink & Mauve (Elbaite)	Inert to Strong	< 0-291	Manganese
Red Rubellite (Elbaite)	Inert to Strong	< 0-326 SI (wide range)	Manganese
Watermelon (Elbaite)	Weak	43 (red) / 65 (green)	Various
Yellow (Dravite)	Inert	< 0 (diamagnetic)	Unknown
Yellow Manganous (Elbaite-Tsilaisite)	Drags	443 SI	Manganese
<b>Triphylite</b> (transparent)	Picks Up	3289 SI	Iron, some Manganese
<b>Triplite</b> (transparent)	Picks Up	4,706 SI	Manganese, Iron
<b>Tugtupite</b>	Inert	< 0 (diamagnetic)	Color Centers
<b>Turquoise</b>			
Blue	Weak to Moderate	26-135	Copper
Green	Weak to Strong	35-278	Copper, Iron
<b>Variscite</b>	Inert to Moderate	< 0-117	Chromium, Iron
<b>Vivianite</b>	Picks Up	1766 SI	Iron
<b>Williamsite</b>	Weak (strong with chromite inclus.)	< 20	Nickel, Iron, Chromium
<b>Wulfenite</b> (orange)	Inert	< 0 (diamagnetic)	Charge Transfer involving Chromium
<b>Xenotime</b>	Picks Up	No Data	Unknown
<b>Zincite</b> (red, yellow)	Inert	< 0 (diamagnetic)	Manganese, Iron
<b>Zircon</b> (any color)	Inert	< 0 (diamagnetic)	Color Centers, Uranium
<b>Zoisite</b>			
Tanzanite (blue, green, brown)	Inert	< 0 (diamagnetic)	Vanadium
Tanzanite (pink)	No Data	No Data	Manganese
Thulite (opaque pink)	Picks Up	3454 SI	Manganese

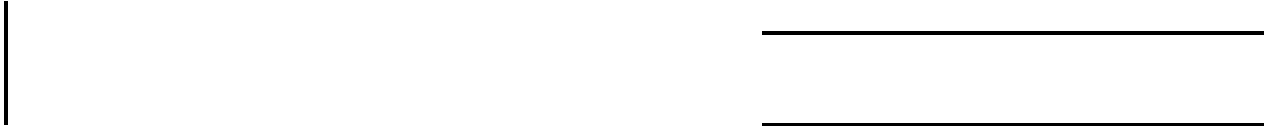




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