

## Gem Enhancements and Care

Gemstones have been enhanced through various methods for hundreds of years. Even the prettiest stones can come out of the ground looking like average rocks, but with a lapidary's skillful cutting and, sometimes, the application of enhancements like simple heat or more advanced procedures, their beauty is revealed.

While some stones like peridot and various garnets are usually not enhanced, many others are sometimes, regularly, or even always enhanced. Those enhancements are common, accepted, and even expected in the industry. Enhancements also help determine how to best care for your gemstones. The chart below lists our gemstones with the known possible enhancement methods for each stone.

gemstone [a]	hardness	possible enhancement(s)	purpose of enhancement	frequency	stability	care and handling
abalone shell	3 - 4	none	n/a	n/a	n/a	Avoid heat, harsh chemicals, perfumes, and hairsprays.
	3 - 4	dyed	to add color	commonly	good	Avoid sudden temperature changes, chemicals, and ultrasonic cleaners.
abalone pearl	2.5 - 4	none	n/a	n/a	n/a	Avoid heat, harsh chemicals, perfumes, and hairsprays.
	2.5 - 4	dyed	to add color	commonly	good	Avoid sudden temperature changes, chemicals and ultrasonic cleaners
agate (chalcedony)	6.5 - 7	dyed/stained/ bleached	to alter color	usually	good to excellent	Normal Care
alexandrite	8.5	none	n/a	n/a	n/a	Normal Care
almandite garnet	7 - 7.5	none	n/a	n/a	n/a	Avoid sudden temperature change.
amazonite feldspar	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	heated	to improve color	unknown	very good	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	irradiated	to create color	unknown	very good	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	impregnated with colorless wax or oil	to improve overall appearance and luster	unknown	good to fair	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	impregnated with hardened agents or plastic	to improve appearance and durability	usually	very good	Avoid heat, chemicals, and ultrasonic cleaners
amber doublet	2 - 2.5	golden amber on a black base	to produce the green color	always	good to very good	special care required. Avoid abrasives
amber - green	2 - 2.5	heated	to alter color	commonly		Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
amber - yellow, golden brown	2 - 2.5	none	n/a	n/a	n/a	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.

	2 - 2.5	heated	to improve appearance, deepen color, and add "sun spangles"	usually	good to very good	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
	2 - 2.5	heated with oils under pressure	to alter color	usually	good to very good	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
	2 - 2.5	dyed/stained	to alter color	rarely	variable	Avoid repolishing. Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
amber - red	2 - 2.5	none	n/a	rarely	n/a	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
	2 - 2.5	dyed	to alter color	usually	good to very good	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
	2 - 2.5	heated	to alter color	usually	good to very good	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
	2 - 2.5	heated oils and pressure	to alter color	usually	good to very good	Amber is very soft, so be mindful of scratching. Avoid harsh chemicals and ultrasonic cleaners.
amblygonite	6	none	n/a	n/a	n/a	*research in progress
	6	cobalt irradiated*	to alter color	unknown	very good	*research in progress
amethyst	7	none	n/a	n/a	n/a	Amethyst may fade with long exposure to direct, bright sunlight.
	7	heated/irradiated	to improve color	occasionally	excellent	Avoid heat. Certain stones may fade in daylight.
ametrine	7	none		n/a	n/a	Normal Care
ammonite/ammolite shell	4	impregnated	to improve appearance and stability	usually	fair to good	Avoid heat, harsh chemicals, and ultrasonic cleaners.
andalusite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heated	to improve color	occasionally	good	Normal Care
andesine-labradorite - red, green*, **	6 - 6.5	heated*, ** diffused*, ** *research in progress	to improve or create color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
andesine-labradorite - yellow	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
andradite garnet	6.5 - 7.5	none	n/a	n/a	n/a	Avoid heat, chemicals, and ultrasonic cleaners
apatite	5	none	n/a	rarely	n/a	Apatite is moderately soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners.
	5	heated	to improve color	usually	good	Apatite is moderately soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners.

apatite, cat's-eye	5	none	n/a	n/a	n/a	Apatite is moderately soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners.
aquamarine	7.5 - 8	none	n/a	very rare	n/a	Normal Care
	7.5 - 8	heated	to improve color	usually	excellent	Normal Care
aragonite	3.5 - 4	none	n/a	n/a	n/a	Aragonite is soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners. Aragonite is generally unsuitable for jewelry.
aventurine feldspar	6 - 6.5	none	n/a	n/a	n/a	Avoid rough handling and heat. Never use ultrasonic or steam cleaners. Clean with warm soapy water.
aventurine quartz	7	none	n/a	n/a	n/a	Normal Care
	7	dye	to improve color	occasionally	good	Normal Care
azurite	3.5 - 4	coated	to alter color	occasionally	fair to good	Azurite is soft, so be mindful of scratching/breaking. Avoid heat, harsh chemicals, and ultrasonic cleaners.
	3.5 - 4	filled with oil/resin and polymer	to stabilize & improve appearance	occasionally	good	Avoid chemicals, steam, and ultrasonic cleaners.
azurmalachite	3.5 - 4	impregnated	to improve appearance and durability	rarely	fair to good	Azurmalachite is soft, so be mindful of scratching/breaking. Avoid heat, harsh chemicals, and ultrasonic cleaners.
	3.5 - 4	filled with oil/resin and polymer	to improve surface and durability	rarely	good	Avoid chemicals, steam, and ultrasonic cleaners.
<b>gemstone [b]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
benitoite	6.5	none	n/a	n/a	n/a	Avoid heat, harsh chemicals, and ultrasonic cleaners.
beryl - aquamarine	7.5 - 8	heated	to improve color	usually	excellent	Normal Care
beryl - blue Maxixe	7.5 - 8	irradiated to blue from pale pink or colorless	to create the blue color	always	poor	Maxixe beryl is very special. Avoid prolonged exposure to light and heat to avoid quick fading of color.
beryl - colorless, goshenite	7.5 - 8	none	n/a	n/a	n/a	Normal Care and handling
beryl - emerald	7.5 - 8	none	n/a	extremely rare	n/a	Avoid sudden temperature change, ultrasonic cleaners, and harsh chemicals.
	7.5 - 8	dyed/stained	to alter color	occasionally	variable	Avoid sudden temperature changes, harsh chemicals, and ultrasonic cleaners.
	7.5 - 8	oiled/resin infused	to improve clarity and appearance	usually	fair to very good	Avoid sudden temperature changes, harsh chemicals, and ultrasonic cleaners.
beryl - morganite pink, peach	7.5 - 8	heated	to improve color	commonly	excellent	Normal Care

beryl - red, bixbite	7.5 - 8	none	n/a	rarely	n/a	Avoid high temperatures, steam cleaning, chemicals, and ultrasonic cleaners.
	7.5 - 8	oiled/resin infused	to improve clarity and appearance	commonly	fair to very good	Avoid high temperatures, steam cleaning, chemicals, and ultrasonic cleaners.
beryl - yellow	7.5 - 8	irradiated	to produce color	usually	variable	Normal care, but some stones may fade in prolonged exposure to light or heat.
	7.5 - 8	none	n/a	n/a	n/a	Normal Care
bixbite (red beryl)	7.5 - 8	oiled/resin infused	to improve clarity	usually	good	Avoid heat, chemicals, and ultrasonic cleaners.
bloodstone chalcedony	6.5 - 7	none	n/a	n/a	n/a	Normal Care
bone/ivory	2 - 3	bleached	to improve color	commonly	good	Bone and ivory are very soft and may discolor with time. Avoid chemicals and ultrasonic cleaners.
	2 - 3	dyed/stained	to alter color	occasionally	good	Bone and ivory are very soft and may discolor with time. Avoid chemicals and ultrasonic cleaners.
	2 - 3	impregnated	to improve appearance	occasionally	good	Bone and ivory are very soft and may discolor with time. Avoid chemicals and ultrasonic cleaners.
<b>gemstone [c]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
carnelian chalcedony	6.5 - 7	heated	to improve color	usually	excellent	Normal Care
	6.5 - 7	dyed/stained	to alter color	occasionally	good to excellent	Certain stones may fade in light or heat.
cat's-eye apatite	5	none	n/a	n/a	n/a	Apatite is moderately soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners.
	5	heated	to improve phenomenon	occasionally	very good	Apatite is moderately soft, so be mindful of scratching. Avoid heat, harsh chemicals, and ultrasonic cleaners.
cat's-eye chrysoberyl	8.5	none	n/a	n/a	n/a	Normal Care
	8.5	irradiated	to create color	occasionally	excellent	Normal Care
chalcedony	6.5 - 7	dyed/stained	to alter color	usually	good to excellent	Normal Care
chalcedony - banded agate	6.5 - 7	dyed/stained	to alter color	usually	excellent	Normal Care
chalcedony - black onyx	6.5 - 7	dyed/stained	to alter color	always	good to excellent	Normal Care
chalcedony - bloodstone	6.5 - 7	none	n/a	n/a	n/a	Normal Care
chalcedony - blue	6.5 - 7	dyed/stained	to alter color	commonly	fair to good	Some stones may fade in light or heat.

chalcedony - carnelian	6.5 - 7	heated	to improve color	usually	excellent	Normal Care
	6.5 - 7	dyed/stained	to alter color	occasionally	good to excellent	Certain stones may fade in light or heat.
chalcedony - chrysoprase	6.5 - 7	none	n/a	n/a	n/a	Normal Care
	6.5 - 7	dyed/stained	to alter color	occasionally	good to excellent	Certain stones may fade in light or heat.
chalcedony - dendritic agate	6.5 - 7	none	n/a	n/a	n/a	Normal Care
chalcedony - fire agate	6.5 - 7	none	n/a	n/a	n/a	Normal Care
chalcedony - green	6.5 - 7	dyed/stained	to alter color	usually	fair to good	Some stones may fade in light or heat.
chalcedony - moss agate	6.5 - 7	none	n/a	n/a	n/a	Normal Care
chalcedony - jasper	6.5 - 7	dyed/stained	to alter color	occasionally	excellent	Normal Care
chalcedony - sard	6.5 - 7	heated	to improve color	usually	excellent	normal
	6.5 - 7	dyed/stained	to alter color	occasionally	good to excellent	Certain stones may fade in light or heat.
chrome diopside	5 - 6	none	n/a	n/a	n/a	Chrome diopside is moderately soft, so be mindful of scratching. Avoid sudden temperature changes and harsh chemicals.
chrome tourmaline	7 - 7.5	none	n/a	n/a	n/a	Normal Care
chrysoberyl - brown, cat's-eye, green, yellow	8.5	none	n/a	n/a	n/a	Normal Care
	8.5	irradiated	to create color	occasionally	excellent	Normal Care
chrysoprase	6 - 7	none	n/a	n/a	n/a	Normal Care
	6 - 7	dyed/stained	to alter color	occasionally	good to excellent	Certain stones may fade in light or heat.
citrine	7	none	n/a	n/a	n/a	Normal Care
	7	heated	to alter color	usually	excellent	Normal Care
	7	irradiated	to create color	unknown	excellent	Normal Care
coral - black	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
coral - white	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	enhanced/bleached	to alter color	commonly	good	Avoid chemicals, cosmetics, and ultrasonic cleaners.

coral - pink	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	dyed/stained	to alter color	usually	variable	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	impregnated waxed/oiled	to improve appearance and luster	commonly	good	Avoid chemicals and ultrasonic cleaners.
coral - orange	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	dyed/stained	to alter color	usually	variable	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	stabilized	to improve durability	commonly	good	Avoid chemicals and ultrasonic cleaners.
coral - gold	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	bleached	to remove color	commonly	very good	Avoid chemicals and ultrasonic cleaners.
coral - red, blue	3 - 4	dyed/stained	to alter color	usually	variable	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	impregnated with colorless wax or oil	to improve quality of material for shaping and polishing	commonly	good	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	impregnated with plastic	to improve quality of material for shaping and polishing	commonly	good	Avoid chemicals, cosmetics, and ultrasonic cleaners.
coral - sponge	3 - 4	none	n/a	n/a	n/a	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	dyed	to alter color	commonly	good	Avoid chemicals, cosmetics, and ultrasonic cleaners.
	3 - 4	impregnated with plastic	to improve quality of material for shaping and polishing	commonly	very good	Avoid chemicals, cosmetics, and ultrasonic cleaners.
corundum - ruby	9	none	n/a	n/a	n/a	Normal Care and handling
	9	heated	to improve color	usually	good to excellent	Normal Care and handling
	9	irradiated	to create color	rarely	good	Color fades with exposure to light or heat.
	9	filled/flux healed	to improve clarity	commonly	fair to very good	Avoid caustic acids, extreme pressure, heat, and ultrasonic cleaners.
	9	diffused	to add color	occasionally	good	Avoid repolishing/recutting and scratching.
	9	filled/lead glass	to improve clarity	commonly	fair to good	Avoid harsh chemicals, steam cleaners, and ultrasonic cleaners.
	9	diffused	to add color	occasionally	good to very good	Normal Care
9	dyed/stained	to alter color	rarely	poor	Avoid harsh chemicals and ultrasonic cleaners.	
corundum - ruby, star	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting or scratching.

	9	heated	to improve color	commonly	good to excellent	Normal Care and handling
corundum - sapphire	9	none	n/a	n/a	n/a	Normal Care and handling
	9	heated	to improve color	usually	excellent	Normal Care and handling
	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting and scratching.
	9	diffused	to improve color	occasionally	excellent	Normal Care
	9	filled/cobalt + lead glass	to add color and improve clarity	rarely	fair to good	Avoid chemicals, ultrasonic cleaners, and abrupt temperature changes.
	9	irradiated	to create color	occasionally	very poor	Fades quickly in light or heat.
corundum - sapphire, star	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting and scratching.
corundum - sapphire, black star	9	heated	to improve color	usually	very good	Normal Care and handling
corundum - sapphire, colorless/white	9	heated	to improve color	usually	good to excellent	Normal Care and handling
corundum - sapphire, fancy (green, orange, purple, pink, padparadscha, yellow)	9	diffused	to add color	commonly	fair to good	Avoid repolishing/recutting and scratching.
	9	surface diffused	to alter color	rarely	fair	Avoid repolishing/recutting and scratching.
<b>gemstone [d]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
danburite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heated	to alter color	unknown	excellent	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.
	7 - 7.5	irradiated	to create color	commonly	good	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.
demantoid garnet	6.5 -7	none	n/a	n/a	n/a	Normal Care
diamond	10	none	n/a	n/a	n/a	Normal Care
	10	lasered	to improve clarity	occasionally	very good	Normal Care
diamond, colorless to faint yellow	10	coated	to add color	rarely	poor to very good	Color may be affected by polishing, recutting, ultrasonic cleaners, alcohol, and harsh chemicals.
	10	fracture filled	to improve clarity	occasionally	very good	Avoid extreme heat and recutting.
	10	heated under pressure	to improve color	rarely	usually	Normal Care
diamond, colored	10	heated	to improve color	rarely	usually	Normal Care
	10	lasered	to improve clarity	occasionally	very good	Normal Care
	10	irradiated	to create color	occasionally	excellent to very good	Normal Care

	10	fracture filled	to improve clarity	rarely	very good	Avoid extreme heat and recutting.
diamond, green	10	irradiated	to create color	occasionally	excellent to very good	Avoid heat to prevent color change.
	10	coated	to improve color	occasionally	good	Avoid solvents and do not repolish. Avoid scratches, which can remove coating.
diaspore	6.5 - 7	none	n/a	n/a	n/a	Normal Care
diopside	5 - 6	none	n/a	n/a	n/a	Diopside is moderately soft, so be mindful of scratching. Avoid sudden temperature changes and harsh chemicals.
dravite (tourmaline)	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heating	to improve color	rare	stable	Normal Care
drusy quartz	7	none	n/a	n/a	n/a	Normal Care
	7	dyed	to alter color	commonly		Normal Care. Certain stones may fade if exposed to heat
	7	plated	to apply a metallic coating	commonly		Avoid polishing, heat, temperature changes, steaming, chemicals and ultrasonic cleaners.
<b>gemstone [e]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
emerald	7.5 - 8	none	n/a	extremely rare	n/a	Avoid sudden temperature changes, ultrasonic cleaners, and chemicals.
	7.5 - 8	dyed/stained	to add color	occasionally	variable	Avoid sudden temperature changes, chemicals, and ultrasonic cleaners.
	7.5 - 8	filled with oil/resin and polymer	to improve apparent clarity and durability	commonly	fair to excellent	Avoid extreme heat, temperature changes, steaming, chemicals and ultrasonic cleaners.
<b>gemstone [f]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
feldspar, amazonite	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	heated	to improve color	unknown	very good	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	irradiated	to create color	unknown	very good	Avoid heat, chemicals, and ultrasonic cleaners
	6 - 6.5	impregnated with colorless wax or oil	to improve overall appearance and luster	unknown	good to fair	Avoid heat, chemicals, and ultrasonic cleaners

	6 - 6.5	impregnated with hardened agents or plastic	to improve appearance and durability	usually	very good	Avoid heat, chemicals, and ultrasonic cleaners.
feldspar - aventurine	6 - 6.5	none	n/a	n/a	n/a	Avoid rough handling and heat. Never use ultrasonic or steam cleaners. Clean with warm soapy water.
feldspar (andesine-labradorite - red, green)*, **	6 - 6.5	heated*, ** diffused*, **	to improve or create color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - andesine, red	6 - 6.5	diffused*, **	to improve or create color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - labradorite, green	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
	6 - 6.5	diffused*, **	to improve or create color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - spectrolite	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - moonstone	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - orthoclase	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
feldspar - sunstone	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, steam, and ultrasonic cleaners.
fire agate (chalcedony)	6.5 - 7	none	n/a	n/a	n/a	Normal Care
fire opal	5.5 - 6.5	impregnated	to improve appearance	commonly	good	Avoid heat.
	5.5 - 6.5	heated	to improve appearance	commonly	very good	Normal Care
fluorite	4	none	n/a	n/a	n/a	Avoid scratching, temperature changes, steaming, chemicals, and ultrasonic cleaners.
	4	heated	to improve appearance	unknown	fair to good	Avoid scratching, temperature changes, steaming, chemicals, and ultrasonic cleaners.
	4	irradiated	to create color	unknown	fair to good	Avoid scratching, temperature changes, steaming, chemicals, and ultrasonic cleaners.
fluorite - blue, green, purple	4	irradiated	to create color	usually	fair to good	Avoid scratching, temperature changes, steaming, chemicals, and ultrasonic cleaners.

<b>gemstone [g]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
garnet - almandite	7 - 7.5	none	n/a	n/a	n/a	Avoid sudden temperature change.
garnet - demantoid	6.5 - 7	none	n/a	n/a	n/a	Normal Care
garnet - grossular	7 - 7.5	none	n/a	n/a	n/a	Normal Care
garnet - hessonite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
garnet - pyrope	7 - 7.5	none	n/a	n/a	n/a	Normal Care
garnet - rhodolite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
garnet - spessartite, mandarin	7 - 7.5	none	n/a	n/a	n/a	Normal Care
garnet - topazolite	6.5 - 7	none	n/a	n/a	n/a	Normal Care
garnet - tsavorite	7 - 7.5	none	n/a	n/a	n/a	Normal Care, Avoid sudden temperature changes.
garnet - uvarovite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
goshenite (colorless beryl)	7.5 - 8	none	n/a	n/a	n/a	Normal Care
<b>gemstone [h]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
heliodor (yellow beryl)	7.5	irradiated	to improve color	commonly	good	Normal Care
	7.5	none	n/a	n/a	n/a	Normal Care
hematite	5.5 - 6.5	none	n/a	n/a	n/a	Normal Care
hessonite garnet	7 - 7.5	none	n/a	n/a	n/a	Normal Care
hiddenite, green spodumene	6.5 - 7	none	n/a	n/a	n/a	Avoid prolonged exposure to bright light and heat to prevent color fading.
	6.5 - 7	irradiated	to create color	rarely	poor	Take extra care that these gems aren't exposed to extensive light or heat to avoid fading.
howlite - white*	3.3 - 5	none	n/a	n/a	n/a	*research in progress
howlite - other colors	3 - 3.5	dyed/stained	to add color	commonly	good	Howlite is soft, so be mindful of scratching. Avoid harsh chemicals, ultrasonic cleaners, and steaming.
hyacinth (zircon)	6.5 - 7	heated	to produce color	commonly	fair to good	Avoid harsh abrasives and strong light.
<b>gemstone [i]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
indicolite tourmaline	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heated	to improve color	commonly	excellent	Normal Care

	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid steaming, harsh chemicals, ultrasonic, and temperature changes.
iolite	7 - 7.5	none	n/a	n/a	n/a	Normal Care and handling
ivory/bone	2 - 3	bleached	to whiten and remove discoloration	commonly	good	Ivory is very soft, so be mindful of scratching. Avoid chemicals and ultrasonic cleaners. Discoloration may occur with time.
	2 - 3	dyed/stained	to alter color	occasionally	good	Ivory is very soft, so be mindful of scratching. Avoid chemicals and ultrasonic cleaners. Discoloration may occur with time.
	2 - 3	impregnated, waxed/oiled	to improve appearance	occasionally	good	Ivory is very soft, so be mindful of scratching. Avoid chemicals and ultrasonic cleaners. Discoloration may occur with time.
ivory (mammoth)	2 - 3	impregnated	to improve appearance	commonly	good	Normal Care
<b>gemstone [j]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
jade (jadeite)	6.5 - 7	waxed/oiled	to improve appearance	commonly	fair	Avoid prolonged exposure to strong light, ultrasonic cleaners and harsh chemicals. May discolor over time.
	6.5 - 7	dyed/stained	to add color	occasionally	variable	Avoid strong light, chemicals, and ultrasonic cleaners.
jade - green, white, purple	6.5 - 7	bleached, impregnated	to alter color and improve luster	commonly	good to very good	Avoid heat, harsh chemicals, and ultrasonic cleaners.
jade (nephrite)	6 - 6.5	dyed/stained	to add color	rarely	unknown	Avoid strong light, harsh chemicals, and ultrasonic cleaners. Discoloration may occur with time.
jasper	6.5 - 7	none	n/a	n/a	n/a	Avoid chemicals, steam, and ultrasonic cleaners.
	6.5 - 7	dyed	to add color	occasionally	fair to good	Avoid chemicals, steam, and ultrasonic cleaners.
<b>gemstone [k]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
kornerupine	6.5 - 7	none	n/a	n/a	n/a	*research in progress
kornerupine - cat's eye	6.5 - 7	none	n/a	n/a	n/a	*research in progress
kunzite (pink/purple spodumene)	6.5 - 7	irradiated, heated	to create color	commonly	fair	Avoid strong light and ultrasonic cleaners.
	6.5 - 7	heated	to improve color	commonly	fair	Color may fade in strong light/sunlight. Avoid ultrasonic cleaners.
kyanite	4 - 7	none	n/a	n/a	n/a	Avoid rough handling, temperature changes, chemicals, steaming, and ultrasonic cleaners.

<b>gemstone [l]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
labradorite - opaque	6 - 6.5	none	n/a	n/a	n/a	Avoid harsh chemicals & ultrasonic cleaners.
labradorite - red	6 - 6.5	diffused*,**	to create or improve color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
labradorite - orange	6 - 6.5	diffused*,**	to create or improve color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
labradorite - green	6 - 6.5	diffused*,**	to create or improve color	unknown	very good	Avoid heat, chemicals, steam, and ultrasonic cleaners.
lapis lazuli	5 - 6	waxed/oiled	to improve appearance	commonly	fair	Avoid chemicals and ultrasonic cleaners.
	5 - 6	heated/dyed/stained	to improve color	commonly	variable	Avoid chemicals and ultrasonic cleaners.
	5 - 6	impregnated with plastic or other hardening agent	to improve durability and appearance	rarely	good	Avoid chemicals and ultrasonic cleaners.
lepidolite	2.5	none	n/a	n/a	n/a	Normal Care
<b>gemstone [m]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
malachite	3.5 - 4	coated with colorless wax	to improve appearance	occasionally	fair	Malachite is soft, so be mindful of scratching. Avoid chemicals and ultrasonic cleaners.
	3.5 - 4	impregnated with plastic or other hardened agents	to improve appearance and durability	rarely	good	Malachite is soft, so be mindful of scratching. Avoid chemicals and ultrasonic cleaners.
	3.5 - 4	dyed	to improve color uniformity	occasionally	good	Avoid chemicals, steam, and ultrasonic cleaners.
mandarin garnet (spessartite)	7 - 7.5	none	n/a	n/a	n/a	Normal Care
marcasite	6 - 6.5	none	n/a	n/a	n/a	Normal Care
Maxixe blue beryl	7.5 - 8	irradiated	to create color	always	poor	Avoid light and heat to prevent color fading.
molдавite	5.5	none	n/a	n/a	n/a	Normal Care
moonstone	6 - 6.5	none	n/a	n/a	n/a	Normal Care
morganite	7.5 - 8	heated	to improve color	commonly	excellent	Normal Care
	7.5 - 8	irradiated	to produce color	commonly	excellent	Normal Care
muscovite	2.5 - 4	none	n/a	n/a	n/a	Normal Care
<b>gemstone [n]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
nephrite jade	6 - 6.5	dyed/stained	to improve color	rarely	unknown	Avoid strong light, harsh chemicals, and ultrasonic cleaners. Discoloration may occur with time.

<b>gemstone [o]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
obsidian	5 - 5.5	none	n/a	n/a	n/a	Avoid heat, chemicals, ultrasonic cleaners, and repolishing.
oligoclase feldspar	6 - 6.5	none	n/a	n/a	n/a	Avoid heat, chemicals, and steam and ultrasonic cleaners.
opal - Andamooka	5.5 - 6.5	sugar dyed/stained	to improve appearance	common	good to poor	Avoid excessive heat and ultrasonic cleaners. Avoid solvents and repolishing.
opal - white, black, semi-black	5.5 - 6.5	none	n/a	n/a	n/a	Avoid excessive heat and ultrasonic cleaners.
	5.5 - 6.5	impregnated, oiled/resin infused	to improve appearance	rarely	fair	Avoid excessive heat, solvents, and ultrasonic cleaners.
	5.5 - 6.5	impregnated	to improve appearance	rarely	good	Avoid excessive heat and solvents.
opal - boulder	5.5 - 6.5	oiled/resin infused	to improve appearance and clarity	occasionally	fair	Avoid heat, chemicals, ultrasonic cleaners, and repolishing.
opal - doublet	5.5 - 6.5	assembled product	to improve color and/or durability	always	good	Avoid heat, chemicals, ultrasonic cleaners, and repolishing.
opal cat's-eye	5.5 - 6.5	impregnated	to improve appearance and durability	usually	good	Avoid heat, chemicals, and ultrasonic cleaners.
opal - fire	5.5 - 6.5	none	n/a	n/a	n/a	Avoid heat.
	5.5 - 6.5	impregnated	to improve appearance	commonly	good	Avoid heat.
opal - hydrophane	5.5 - 6.5	impregnated	to improve appearance	commonly	fair to good	Avoid heat and solvents.
	5.5 - 6.5	dyed/stained	to add color	commonly	good	Avoid heat and solvents.
opal - matrix	5.5 - 6.5	sugar dyed/stained	to add color	commonly	good	Avoid heat, solvents, and repolishing.
opal - triplet	5.5 - 6.5	assembled product	to improve color and/or durability	always	good	Avoid heat, chemicals, ultrasonic cleaners, and repolishing.
orthoclase feldspar*	6 - 6.5	none*	n/a	n/a	n/a	*research in progress
<b>gemstone [p]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
padparadscha sapphire	9	diffused	to add color	commonly	fair to good	Avoid repolishing/recutting.
	9	heated	to add color	commonly	fair to good	Avoid heat and steam cleaners.
paraiba tourmaline	7 - 7.5	heated	to improve color	commonly	good to very good	Normal Care
pearl - natural	2.5 - 4.5	bleached	to whiten and remove discoloration	usually	very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.

	2.5 - 4.5	dyed/stained w/-w/o heat	to alter color	rarely	good to very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
pearl - cultured saltwater	2.5 - 4.5	bleached	to whiten and remove discoloration	usually	excellent	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	dyed/stained	to add color	commonly	good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	dyed/stained with potential colored nuclei	to add color	occasionally	variable	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
pearl - cultured freshwater	2.5 - 4.5	irradiated	to created color	occasionally	very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	bleached	to whiten and remove discoloration	usually	excellent	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	irradiated	to create color	occasionally	very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	dyed/stained with potential colored nuclei	to add color	occasionally	variable	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
	2.5 - 4.5	dyed/stained	to add color	commonly	good to very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
pearl - mabe	2.5 - 4.5	ASSEMBLED: coated, dyed, bleached, filled w/hardened substance and backed with mother-of-pearl	to add color	always	fair to very good	Avoid cosmetics, perfumes, hairsprays, and household chemicals.
peridot	6.5 - 7	none	n/a	n/a	n/a	Normal Care
	6.5 - 7	impregnated, oiled/waxed	to improve appearance	rarely	fair to good	Avoid sudden temperature changes, harsh chemicals, and ultrasonic cleaners.
	6.5 - 7	filled	to improve clarity	rarely	good	Avoid sudden temperature changes, harsh chemicals, and ultrasonic cleaners.
petalite	6 - 6.5	none	n/a	n/a	n/a	Avoid rough handling and ultrasonic cleaners.
phenakite	7.5 - 8	none	n/a	n/a	n/a	Normal care, but avoid sudden temperature changes.
petrified wood	6.5 - 7	none	n/a	n/a	n/a	Normal Care
	6.5 - 7	bleached	to remove color	occasionally	good	Normal Care
	6.5 - 7	heated	to improve color	occasionally	good	Normal Care
pietersite	7	none	n/a	n/a	n/a	Normal Care
pink tourmaline	7 - 7.5	heated	to improve color	occasionally	excellent	Normal Care
	7 - 7.5	irradiated	to create color	commonly	good	Normal Care
	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.

prehnite	7 - 7.5	dyed/stained	to add color	occasionally	poor to fair	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.
	6 - 6.5	n/a	n/a	n/a	n/a	Avoid heat, chemicals, and ultrasonic cleaners
pyrite	6 - 6.5	none	n/a	n/a	n/a	Avoid harsh chemicals and excessive heat.
pyrope garnet	7 - 7.5	none	n/a	n/a	n/a	Normal Care
<b>gemstone [q]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
quartz - amethyst	7	none	n/a	n/a	n/a	May fade with long exposure to sunlight.
	7	heated	to improve color	occasionally	excellent	Avoid exposure to high heat.
quartz - ametrine	7	none	n/a	n/a	n/a	Normal Care
	7	heated	to alter color	occasionally	very good	Avoid exposure to high heat.
quartz - aventurine	7	none	n/a	n/a	n/a	Normal Care
	7	dyed	to improve color	occasionally	good	Normal Care
quartz - black	7	irradiated	to create color	usually	good to excellent	Normal Care
quartz - cat's-eye	7	none	n/a	n/a	n/a	Normal Care
quartz - citrine	7	heated	to improve color	usually	excellent	Normal Care
	7	irradiated	to create color	always	excellent	Normal Care
quartz - hawk's-eye, blue	7	none	n/a	n/a	n/a	Normal Care
	7	heated	to alter color	usually	excellent	Normal Care
	7	chemical bleaching with acid or bleaching agents	to alter color	usually	excellent	Normal Care
quartz - lazulated	7	none	n/a	n/a	n/a	Avoid heat, temperature changes, steaming, chemicals, ultrasonic cleaners, and repolishing.
quartz - mystic	7	coated with titanium	to produce mystic quartz	usually	very good	Normal care, but avoid chipping that may reveal natural color.
quartz - oro verde	7	irradiated	to create color	always	excellent	Normal Care
quartz - smoky	7	irradiated	to create color	usually	good	Normal Care
	7	none	n/a	n/a	n/a	Normal Care
quartz - rock, colorless	7	none	n/a	n/a	n/a	Normal Care

quartz - rose	7	none	n/a	n/a	n/a	Normal Care
quartz - tourmalinated	7	none	n/a	n/a	n/a	Normal Care
quartz - rutilated	7	none	n/a	n/a	n/a	Normal Care
quartz - tiger's-eye, brown	7	none	n/a	n/a	n/a	Normal Care
	7	chemical bleaching with acid or bleaching agents	to alter color	usually	excellent	Normal Care
quartz - tiger's-eye, red	7	heated	to alter color	usually	excellent	Normal Care
	7	chemical bleaching with acid or bleaching agents	to alter color	usually	excellent	Normal Care
	7	dyed	to alter color	always	very good	Normal Care
quartzite	7	none	n/a	n/a	n/a	Normal Care
	7	dyed	to alter color	commonly	excellent	Normal Care
	7	impregnated with colorless plastic	to improve appearance, and durability	commonly	good	Normal Care
<b>gemstone [r]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
rhodochrosite	3.5 - 4	none	n/a	n/a	n/a	Rhodochrosite is soft, so be mindful of scratching and chipping.
rhodolite garnet	7 - 7.5	none	n/a	n/a	n/a	Normal Care
rhodonite	5.5 - 6	dyed/stained	to add color	occasionally	poor	Avoid chemicals and ultrasonic cleaners.
	5.5 - 6	none	n/a	n/a	n/a	Normal Care
rock crystal	7	none	n/a	n/a	n/a	Normal Care
	7	coated	to create color	commonly	very good	Avoid harsh abrasives, chemicals, scratching, extreme heat, repolishing.
rubellite tourmaline	7 - 7.5	heated	to improve color	occasionally	excellent	Normal Care
	7 - 7.5	irradiated	to create color	commonly	good	Normal Care
	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.

	7 - 7.5	dyed/stained	to alter color	occasionally	poor to fair	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.
ruby	9	none	n/a	n/a	n/a	Normal Care
	9	heated	to improve color	usually	good to excellent	Normal Care
	9	irradiated	to create color	rarely	usually	Color fades with exposure to light or heat.
	9	filled/flux healed	to improve clarity	commonly	fair to very good	Avoid caustic acids, extreme pressure, heat, and ultrasonic cleaners.
	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting.
	9	filled/lead glass	to improve clarity	commonly	fair to good	Avoid harsh chemicals, steam cleaners, and ultrasonic cleaners.
	9	diffused	to add color	occasionally	good to very good	Normal Care
	9	dyed/stained	to alter color	rarely	poor	Avoid harsh chemicals and ultrasonic cleaners.
ruby - star	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting.
	9	heated	to improve color	commonly	good to excellent	Normal Care
ruby-zoisite	6.5 - 7	none	n/a	n/a	n/a	Normal Care
<b>gemstone [s]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
sapphire	9	none	n/a	n/a	n/a	Normal Care
	9	heated	to improve color	usually	excellent	Normal Care
	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting.
	9	diffused	to improve color	occasionally	excellent	Normal Care
	9	filled/cobalt + lead glass	to add color and improve clarity	rarely	fair to good	Avoid chemicals, ultrasonic cleaners, and abrupt temperature changes.
	9	irradiation	to create color	occasionally	very poor	Fades quickly in light or heat.
sapphire - star, blue	9	surface diffused	to add color	occasionally	good	Avoid repolishing/recutting.
sapphire - star, black	9	heated	to improve color	usually	very good	Normal care, but avoid rough handling due to parting.
sapphire - white/colorless	9	heated	to improve color	usually	good to excellent	Normal Care
sapphire - fancy colors (green, orange, padparadscha, purple, pink, yellow)	9	diffused or heated	to add color	commonly	fair to good	Avoid repolishing/recutting.

scapolite - yellow	5.5 - 6	none	n/a	n/a	n/a	Avoid ultrasonic cleaners and exposure to strong sunlight.
scapolite - violet	5.5 - 6	none	n/a	n/a	n/a	Avoid chemicals, steam, and ultrasonic cleaners.
	5.5 - 6	heated	to produce violet color	rarely	good	Avoid chemicals, steam, and ultrasonic cleaners.
	5.5 - 6	cobalt irradiated	to alter color	unknown	poor to fair	Avoid bright light and heat.
serpentine	2.5 - 5.5	none	n/a	n/a	n/a	Avoid sudden temperature changes, chemicals, and ultrasonic cleaners.
	2.5 - 5.5	dyed/stained	to alter color	commonly	fair to good	Color may fade.
	2.5 - 5.5	impregnated, waxed/oiled	to improve hardness and luster;	commonly	good to very good	Avoid ultrasonic, chemicals, and solvents
shell	4	dyed/stained	to alter color	commonly	fair to good	Avoid harsh chemicals.
sinhalite	6.5 - 7	none	n/a	n/a	n/a	*research in progress
sodalite	5.5 - 6	none	n/a	n/a	n/a	Avoid sudden changes of temperature, chemicals, and ultrasonic cleaners
	5.5 - 6	dyed dyed/stained	to alter color	rarely	fair	special care required as dye may fade
sphalerite	3.5 - 4	none	n/a	n/a	n/a	Sphalerite is a soft stone, so be mindful of scratching. It is generally not suited for jewelry use.
spessartite garnet, mandarin	7 - 7.5	none	n/a	n/a	n/a	Sudden temperature changes can cause fracturing.
sphene	5 - 5.5	none	n/a	n/a	n/a	Sphene requires no special care, though it is best suited for earrings and pendants due to its softness.
	5 - 5.5	heated	to create red or orange color	rarely	fair to good	Sphene requires no special care, though it is best suited for earrings and pendants due to its softness.
spinel	8	none	n/a	n/a	n/a	Normal Care
spodumene - pink/violet (kunzite)	6.5 - 7	irradiated	to create color	commonly	fair	Color fades in strong light/sunlight. Avoid ultrasonic cleaners.
	6.5 - 7	none	n/a	n/a	n/a	Color may fade in strong light/sunlight. Avoid ultrasonic cleaners.
spodumene - green (hiddenite)	6.5 - 7	none	n/a	n/a	n/a	Color fades with exposure to light or heat. Sudden temperature change can cause fracturing
spodumene - green	6.5 - 7	irradiated	to create color	rarely	poor	Color fades with exposure to light or heat. Sudden temperature change can cause fracturing

spodumene - yellow	6.5 - 7	irradiated	to create color	rarely	poor	Color fades with exposure light or heat. Sudden temperature change can cause fracturing
	6.5 - 7	none	n/a	n/a	n/a	Sudden temperature change can cause fracturing.
tsugulite	6 - 6.5	none	n/a	n/a	n/a	Normal Care
sunstone - oligoclase	6 - 6.5	none	n/a	n/a	n/a	Avoid sudden temperature changes, chemicals, rough handling, heat, and ultrasonic cleaners.
sunstone - labradorite	6 - 6.5	none	n/a	n/a	n/a	Avoid sudden temperature changes, chemicals, rough handling, heat, and ultrasonic cleaners.
<b>gemstone [t]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
tanzanite	6.5 - 7	heated	to improve color	usually	excellent	Tanzanite should be worn gently to Avoid scratches.
tiger's-eye quartz	7	bleached, dyed/stained, heated	to alter color	occasionally	good to very good	Avoid harsh chemicals, ultrasonic cleaners, and steaming.
topaz - blue	8	heated	to produce the blue color	usually	excellent	Normal Care
	8	irradiated	to produce the blue color	usually	excellent	Normal Care
	8	irradiation followed by heat (annealing)	to produce the blue color	usually	excellent	Avoid steaming, ultrasonic cleaners, and abrupt temperature changes.
	8	none	n/a	n/a	n/a	Normal Care
topaz - brown	8	none	n/a	n/a	n/a	May fade with exposure to sunlight.
	8	irradiated	to create color	occasionally	poor	Color may fade with exposure to light.
topaz - green	8	irradiated	to create color	occasionally	poor	Color fades in exposure to sunlight.
	8	diffused	to add color	usually	good	Avoid repolishing/recutting.
	8	none	n/a	n/a	n/a	Normal Care
topaz - pink, red, mystic, ocean, glacier, patriot, canary, champagne, orchid, dawn, teal, kiwi, etc.	8	(chemical vapor deposition) coated	to add color	always	fair	Avoid harsh chemicals, heat, ultrasonic cleaners, scratching, and repolishing/recutting.
topaz - pink/red	8	heated	to improve color	usually	excellent	Normal Care
topaz - yellow/orange	8	irradiated	to create color	occasionally	variable	Avoid heat and strong light.
topaz - white (colorless)	8	none	n/a	n/a	n/a	Normal Care and handling

	8	heated	to alter color	occasionally	very good	Normal Care and handling
taffeteite	8 - 8.5	none	n/a	n/a	n/a	Normal Care and handling
tourmaline - cat's-eye	7 - 7.5	none	n/a	n/a	n/a	Normal Care and handling
	7-7.5	bleached, filled with resin	to improve clarity	rarely	fair to good	Avoid steaming, ultrasonic cleaners.
tourmaline - chrome	7 - 7.5	none	n/a	n/a	n/a	Normal Care and handling
tourmaline - dravite	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heated	to improve color	rare	stable	Normal Care
tourmaline - green, blue	7 - 7.5	none	n/a	n/a	n/a	Normal Care and handling
	7 - 7.5	heated	to improve color	commonly	excellent	Normal Care and handling
	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid steaming, chemicals, ultrasonic cleaners, and temperature changes.
tourmaline - Paraiba	7 - 7.5	heated	to improve color	commonly	good to very good	Normal Care
tourmaline - pink, red, purple	7 - 7.5	heated	to improve color	occasionally	excellent	Normal Care
	7 - 7.5	irradiated	to create color	commonly	good	Normal Care
	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid temperature changes, steaming, chemicals, and ultrasonic cleaners.
	7 - 7.5	dyed/stained	to alter color	occasionally	poor to fair	Avoid abrupt temperature changes, steaming, chemicals, and ultrasonic cleaners.
tourmaline - yellow/orange	7 - 7.5	heated	to improve color	rarely	excellent	Normal Care
	7 - 7.5	irradiated	to create color	rarely	very good	Normal Care
tsavorite garnet	7 - 7.5	none	n/a	n/a	n/a	Normal Care, Avoid sudden temperature changes.
turquoise	5 - 6	impregnated	to improve appearance	commonly	good	Avoid hot water, household chemicals, and ultrasonic cleaners.
	5 - 6	impregnated, waxed/oiled	to improve color and luster	commonly	poor to fair	Avoid hot water, household chemicals, and ultrasonic cleaners.
	5 - 6	dyed/stained	to improve color	rarely	poor	Avoid hot water, harsh household chemicals, and ultrasonic cleaners.
	5 - 6	stabilized	to improve durability	commonly	good	Avoid hot water, harsh household chemicals, and ultrasonic cleaners.
<b>gemstone [u]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
unakite	6 - 7	none	purpose	n/a	n/a	Avoid harsh chemicals, steams, and ultrasonic cleaners.

<b>gemstone [v]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
variscite	4.5	none	n/a	n/a	n/a	Color may fade in strong light.
	4.5	impregnated with colorless plastic	to improve durability and for shaping and polishing	commonly	good	Avoid exposure to hot water, chemicals and ultrasonic cleaners
verdelite (green tourmaline)	7 - 7.5	none	n/a	n/a	n/a	Normal Care
	7 - 7.5	heated	to improve color	commonly	excellent	Normal Care
	7 - 7.5	oiled/resin infused	to improve appearance	occasionally	fair to good	Avoid steaming, chemicals, ultrasonic cleaners, and abrupt temperature changes.
<b>gemstone [y]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
yellow beryl	7.5 - 8	irradiated	to create color	usually	variable	Some stones may fade in light or heat.
	7.5 - 8	none	n/a	n/a	n/a	Avoid ultrasonic and steam cleaners. Avoid harsh detergents, heat, and chemicals.
<b>gemstone [z]</b>	<b>hardness</b>	<b>possible enhancement(s)</b>	<b>purpose of enhancement</b>	<b>frequency</b>	<b>stability</b>	<b>care and handling</b>
zircon - blue/colorless	6.5 - 7	heated	to improve color	almost always	poor to fair	Avoid harsh abrasives and strong light.
	6.5 - 7	none	n/a	n/a	n/a	Avoid harsh abrasives and high heat.
zircon - green/brown	6.5 - 7	none	n/a	n/a	n/a	Avoid harsh abrasives and strong light.
zircon - red	6.5 - 7	heated	to improve color	commonly	poor to fair	Avoid harsh abrasives and strong light.
zircon - yellow	6.5 - 7	heated	to improve color	rarely	good to fair	Avoid harsh abrasives and strong light.
zoisite - blue (tanzanite)	6.5 - 7	heated	to improve color	usually	excellent	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.
zoisite - green	6.5 - 7	none	n/a	n/a	n/a	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden

						temperature changes and rough handling.
zoisite - orange	6.5 - 7	none	n/a	n/a	n/a	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.
zoisite - pink	6.5 - 7	none	n/a	n/a	n/a	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.
zoisite - purple	6.5 - 7	none	n/a	n/a	n/a	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.
	6.5 - 7	heated	to alter color	commonly	excellent	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.
zoisite - red	6.5 - 7	none	n/a	n/a	n/a	Care should be taken due to tanzanite's relative softness. Avoid ultrasonic and steam cleaners. Avoid sudden temperature changes and rough handling.

Gemstone Enhancement Definitions (based on AGTA guidelines)	
bleached	Bleaching includes the use of heat, light and/or chemicals or other agents to lighten or remove a gemstone's color. This is often accompanied by subsequent dyeing and/or impregnation. Examples: bleached cultured pearl; bleached/impregnated jadeite ('b-jade)
coated	Coating is the use of surface enhancements such as lacquering, enameling, inking, foiling, or sputtering of films to improve appearance, provide color, or add other special effects. Examples: coated diamond, coated topaz
diffused	Outside-in diffusion of coloring chemicals via high-temperature heat treatment can produce color and/or asterism. "Diffused" indicates bulk, lattice, or surface diffusion. If surface, so indicated. Example: lattice diffusion-treated sapphire
dye/stained	Dyeing/staining involves the introduction of coloring matter into a gemstone to give it new color, intensify existing color, or improve color uniformity. Example: dyed green jadeite
filled	The filling of surface-breaking cavities or fissures with colorless glass, plastic, or some similar substance can improve durability, appearance and/or weight. Example: ruby
flux healed	During heat enhancement, fluxes (or heat alone) may be used to heal/close open fractures or fissures. The process dissolves the walls of the fractures and redeposits the molten gem material in it, healing the

	fractures closed. Example: ruby (particularly those from Mong Hsu, Burma)
heated	The use of heat can alter color, clarity, and/or phenomena. Example: ruby, sapphire, tanzanite, aquamarine, demantoid garnet
heated under pressure	The use of heat and pressure combined can achieve desired alterations of color and/or clarity.
impregnated	Impregnation involves the impregnating of a porous gemstone with a colorless agent (usually plastic) to give it durability and/or improve appearance. Example: stabilized turquoise
irradiated	Irradiation is the use of neutrons, gamma, ultraviolet and/or electron bombardment to alter a gemstone's color. The irradiation may be followed by a heated process. Example: blue topaz, colored diamonds
lasered	Lasering is the use of a laser and chemicals to reach and alter inclusions. Example: diamond
none	"None" is used above and on our invoices to indicate one of two situations. First, it refers to certain gemstones that are not currently known to be enhanced (such as alexandrite, some garnets, etc.) Second, "none" may also be used for a gem that can be proven, via gemological testing or other means, not to have been subjected to any enhancement.
oiled/resin infused	The filling of surface-breaking fissures with a colorless oil, wax, resin, or other colorless substance except glass or plastic, can improve a gemstone's appearance. Example: emerald
stabilized	Not to be confused with reconstituted turquoise, more valuable stabilized turquoise is solid, whole turquoise that has been filled with colorless wax or resin to fill tiny gaps within it, providing a polished finish that protects the stone against breakage and discoloration resulting from exposure to skin oils, etc. Stabilization is not a color enhancement. Stabilization only serves to protect the turquoise and help it retain its natural color.
waxed/oiled	The impregnation of a colorless wax, paraffin, and/or oil in porous gemstones can improve their appearance. Example: jadeite
* research in progress	* Possible enhancement methods and any special care recommendations required for gems marked with an asterisk (*) are currently being researched/revised due to new developments and/or the rarity of this stone in the jewelry trade. When in doubt, the safest way to care for gemstones and jewelry with unknown enhancements is cleaning with a soft brush and warm water, with the addition of a mild detergent when necessary; avoid extreme temperatures and prolonged exposure to bright light. Our sources include, but are not limited to, university mineralogical, gemological, and geology departments, as well as international gem laboratories and individual experts in the trade. This page will be regularly updated as information becomes available.

TJC HAS A RIGOROUS PROTOCOL TO VERIFY THE TREATMENT OF ALL GEMSTONES WE SELL. OUR TREATMENT DISCLOSURES ABOVE, ON AIR, AND ON OUR INVOICES INCLUDE THE INFORMATION WE KNOW ABOUT A GEMSTONE. IT IS POSSIBLE THAT A GEMSTONE HAS BEEN TREATED OR ALTERED WITHOUT OUR KNOWLEDGE OR THAT THE METHOD OF TREATMENT IS NOT KNOWN TO US OR DETECTIBLE BY CURRENT ACCREDITED LABORATORY TESTING TECHNOLOGY. THEREFORE, THE TREATMENT INFORMATION PROVIDED ABOVE, ON AIR, AND ON OUR INVOICES IS TO THE BEST OF OUR KNOWLEDGE.