

Enhancement codes

The following shows the enhancements and treatments used for popular gemstones, their purpose, frequency and care.

- **N = Natural**
Gems that are, according to best available information, untreated.

Heat

- **H = Heat Only:** Alteration via heat only (or heat + hydrogen). Example: Heated Ruby, heated Sapphire, heated Tanzanite.
- **HD = Heat + Diffusion (aka 'bulk' or 'lattice' diffusion):** Alteration via heat and outside-in diffusion of foreign elements other than hydrogen. Example: Beryllium-diffused Songea Sapphire
- **HF = Heat + Flux: Alteration via heat and flux.** During heating, fluxes dissolve surface-reaching fissure walls and redeposit that dissolved gem material, healing the fissures closed. Example: Flux-heated ruby (particularly that from Mōng Hsu, Burma)
- **HP = Heat + Pressure:** Alteration via heat and pressure. Example: HPHT diamond

Filling

- **F = Filling:** Impregnation with a colourless substance. This is typically done to improve clarity, but also improves colour, as clarity enhancement facilitates longer light paths within the gem. Fillers include but are not limited to glass, plastic, resin, wax and oil. Some fillers remain fluid at room temperature (and thus are less stable), while others are hardened. Note that any gem with the requisite openings can be filled. Example: Oiled Emerald, glass-filled Ruby, stabilised turquoise
- **FD = Filling + Dye:** Impregnation with a coloured filler, typically done to add or improve colour and possibly also clarity. Note that any gem with the requisite openings can be dyed. Example: Dyed green Jadeite

Irradiation

- **I = Irradiation:** Alteration of colour via the use of neutrons, gamma, ultraviolet and/or electron bombardment. A heating process may follow irradiation. Example: Irradiated blue Topaz

Coating

- **C = Coating:** Application of an artificial layer to the surface. Example: Coated Diamond, coated Topaz

Bleaching

- **B = Bleaching:** The use of heat, light and/or chemical agents to lighten or remove colour. Subsequent dyeing and/or filling often accompany this. Example: Bleached cultured Pearl, bleached/filled Jadeite ('B-Jade')



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Laser Drilling

- **L = Laser Drilling:** Use of a laser and chemicals to reach and alter inclusions. Example: Laser-drilled diamond

Reconstruction

- **R = Reconstruction:** Use of heat, pressure and/or solvents to fuse small pieces of a gem together into a larger whole. Example: Reconstructed Turquoise

Estimated degree of enhancement

In order to give an estimate of the degree of alteration that a gem has undergone via enhancement, we have created an Estimated Degree of Enhancement Scale. This gives the buyer an idea about the quality of rough prior to treatment. Some processes only lightly enhance a gem, while others have a more significant impact. We use the following scale:

- N = None
- L = Light
- M = Moderate
- S = Significant

Frequency used

This represents a reasonable estimate of how commonly a particular enhancement process is utilised in the trade, based on a consensus of opinion. Gem Collector rates this on the following scale:

- Common
- Occasional
- Rare



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Special advice and caring for your gemstone

Gems are among the most durable of nature's creations, but still require care if they are to retain their beauty. Caring for your gemstone is a matter of common sense and simple precaution:

- Always remove your jewellery when engaging in activities that risk impact or exposure to chemicals or heat such as sports or housework.
- Always put jewellery on after using lotions, cosmetics, hair spray or perfumes, not before.
- Never remove your jewellery by pulling on the gems.
- The best way to store your jewellery is in the compartments of a jewellery box or in pouches.
- Store each piece of gemstone jewellery separately and necklaces flat so that harder stones don't scratch softer ones. Almost every gem is harder than the metal in which it is set. Gems can scratch one another or the finish on your jewellery if stored carelessly.
- Carefully wipe jewellery with a soft lint-free cloth after each wearing to remove oils and salts.
- Clean your jewellery on occasion with a cleaning solution or mechanical cleaner suitable for the gem; use a dish rather than the sink, for if a gem accidentally falls out of the setting, down the drain it goes. When in doubt, just use warm soapy water and a soft toothbrush.
- Think twice before putting gems in an ultrasonic cleaner. Diamonds and rubies and sapphires are generally fine but many other gems may not be. Thus when in doubt, leave it out.
- Opaque gems such as Lapis Lazuli, Turquoise and Malachite can be porous and may absorb chemicals and soap, discolouring them. Thus they require special care. We rarely recommend using ultrasonic cleaners, ammonia or chemical solutions for coloured gemstones. These gem materials should just be wiped clean gently with a moist cloth.
- Opals also require special care. Never use an ultrasonic, never use ammonia, and avoid heat and strong light that can dry out the water in Opals.
- Organic gems like Pearls, Coral and Amber should only be wiped clean with a moist cloth. Due to their organic nature, these gems are both soft and porous. Be careful about chemicals in hairspray, cosmetics, or perfume; over time they can damage Pearls in particular.
- Stones that have a Mohs hardness of 7 or less are subject to scratching; harder stones are less susceptible, but still subject to chipping and fracture.

For complete care instructions on each gem type, please see the chart information entitled 'Gem Enhancement and Care Chart' further on.



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Treatment summary

The term 'enhancement' describes any process other than ordinary cutting and polishing that improves the appearance, durability or value of an otherwise natural gemstone or cultured pearl. In today's gem marketplace, enhanced gems are the rule rather than the exception. Such processes range from simple heating (such as with Tanzanite) to high-tech irradiation (such as with blue Topaz).

Note that an enhancement is, by definition, an artificial process, since it involves human intervention. Thus using a 'natural' cedarwood oil to enhance an Emerald does not make the process more 'natural.'

Fully natural:

- Stones produced by simply obtaining the raw gem material in nature, cleaning it and then cutting and polishing. With the exception of cleaning and ordinary cutting and polishing, natural gems are fully natural. Examples include natural Garnet and Peridot.

Natural, but enhanced:

- Stones produced by obtaining the raw gem material in nature, but then processing it in any way beyond normal cleaning, cutting and polishing. Examples include heat-treated Sapphire, Tanzanite and Paraíba Tourmaline.

Synthetic:

- Man-made analogs of natural gem materials. In order to qualify as a synthetic, the man-made product must have the same appearance, chemical composition and structure as its natural counterpart. Examples include synthetic ruby and synthetic Emerald.

Imitation:

- A gem that has the same appearance as another gem. There are infinite possibilities, including both natural and man-made imitations. Thus natural iolite might imitate a heated Tanzanite, while man-made glass might also do the same.

Final notes

The following tables show the enhancements used for both major and minor gems, along with care instructions. This has been compiled based on our own experience, coupled with the expertise of our suppliers, the world's major gemological laboratories, trade associations, regulatory bodies, professional journals, etc. These tables include all currently known enhancements, even those not applied to the gems sold by Gem Collector.

Note that enhancements are constantly being developed and altered. We do our best to provide the latest information, but if there are questions, the best solution is to have the individual gem tested by a major gemological laboratory.



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Agate (see Quartz-Chalcedony)				
Alexandrite (see ChrysoBeryl)				
Amazonite (see Feldspar)				
Amber				The skin of Amber may naturally darken with age. Thus repolishing may produce a lightening of colour.
All varieties	H/L	Heated to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
	FD/S	Dyed to improve appearance	Rare	Avoid repolishing, heat, steaming, chemicals and ultrasonic
	R/S	Heated under pressure to fuse small pieces into a larger piece	Common	Avoid heat, steaming, chemicals and ultrasonic
Green	HP/S	Heated under pressure to induce a green colour	Common	Avoid heat, steaming, chemicals and ultrasonic
Amblygonite / Montebasite	I	Irradiated to improve colour	Common	May be prone to thermal shock; avoid extreme temperature changes
Amethyst (see Quartz)				
Ametrine (see Quartz)				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Ammolite	F/M	Impregnated with colourless hardened filler to improve durability	Common	Avoid heat, steaming, chemicals and ultrasonic; may not be suitable for re-cutting or re-polishing
Andesine (see Feldspar)				
Andalusite	N	None	—	Avoid boiling and ultrasonic cleaning
Apatite	H/L	Heated to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic; somewhat soft; brittle; handle with care
Aquamarine (see Beryl)				
Aventurine (see Quartz)				
Azurite (includes Azurmalachite)				
All varieties except Druzy	F/L–M	Dipped in colourless wax to improve appearance; impregnated with colourless hardened or unhardened filler to improve appearance and durability	Common	Avoid heat, steaming, chemicals and ultrasonic
Druzy	N	None	—	Brittle; avoid shock



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Beryl				
Aquamarine	H/L	Heated to improve colour	Common	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Blue ('maxixe' type)	I/S	Irradiated blue from pale pink to colourless	Always	Colour fades; avoid light and heat
Colourless (aka 'fire' or 'Goshenite')	N	None	—	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Emerald	F/L–M	Impregnated with colourless hardened or unhardened filler to improve appearance	Common	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
	FD/L–S	Dyed with hardened or unhardened filler to improve appearance	Occasional	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Pink (aka 'Morganite')	I + H/L	Irradiation followed by heating to improve colour	Common	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic; rarely may fade in light or heat
Red Emerald (aka 'Bixbite')	F/L–S	Impregnated with colourless hardened or unhardened filler to improve appearance	Common	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Yellow & golden (aka 'Heliodor'), green Beryl	I/M	Irradiated to improve colour	Common	Certain stones may fade in light or heat



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Bixbite (see Beryl)				
Bloodstone (see Quartz-Chalcedony)				
Brazilianite	N	None	—	Fragile; handle with care; avoid heat, steaming, chemicals and ultrasonic
Carnelian (see Quartz-Chalcedony)				
Chalcedony (see Quartz-Chalcedony)				
Charoite	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
ChrysoBeryl				
Alexandrite	F/L–M	Impregnated with colourless filler to improve appearance	Rare	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Cat 's eye	I/S	Irradiated to improve colour	Rare	If neutron irradiated, refer to the NRC for safety requirements
Chrysocolla	F/M–S	Impregnated with colourless filler to improve appearance and durability	Common	Avoid heat, steaming, chemicals and ultrasonic
Chrysoprase (see Quartz-Chalcedony)				
Citrine (see Quartz)				
Clinohumite	N	None	—	—



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Coral				
Black	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
White	B/L	Bleached to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic; may discolour over time
Pink, orange	F/L	Impregnated with colourless filler to improve appearance and durability	Common	Avoid heat, steaming, chemicals and ultrasonic
Red	FD/M–S	Dyed to improve appearance	Common	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Gold	B/S	Bleached from black coral	Common	Avoid heat, steaming, chemicals and ultrasonic
Corundum				
Ruby and Sapphire of all types	H/L–S	Heated to improve appearance	Common	—
	HF/M–S	Heated with flux to improve appearance and durability	Common	—



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
	HD/S	Heated with elements other than hydrogen to improve colour and/or add asterism	Common	If diffused layer is just at the surface, avoid repolishing
	F/M-S	Surface pits filled with colourless hardened filler to improve appearance and/or add weight	Occasional	Avoid heat, steaming, chemicals and ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
	FD/S	Dyed to improve appearance. Please note that when we knowingly sell dyed Corundum, we name it 'Corundum' and not Ruby or Sapphire.	Rare	Avoid heat, steaming, chemicals and ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Ruby	FD/S	Impregnated with colourless or coloured lead glass filler to improve appearance; sometimes classified as composite gemstones, these rubies are treated using heat and a high refractive index lead-glass to fill fractures and cavities. This improves clarity and/or intensifies colour and/or colour uniformity and/or appearance. The lead-glass is typically yellow to orange in colour and can artificially augment the red colour of these gems.	Common	Avoid heat, steaming, chemicals and ultrasonic. Fillers in cavities and/or fissures can scratch more easily than the host gem or be more vulnerable to damage from heat or some chemicals. The lead glass may be damaged by a variety of solvents.
Yellow and orange Sapphire	I/S	Irradiated to alter colour	Rare	Colour fades with exposure to light and/or heat
Danburite				
Colourless, pink, yellow	N	None	—	—
Brown	I/S	Irradiated to improve colour	Common	May fade; avoid prolonged exposure to heat and light
Diamond				
All varieties	L/M	Laser drilled to improve appearance	Occasional to Common	—
	C/S	Coated to improve appearance	Occasional	Recutting, steaming, ultrasonic and occasionally alcohol may adversely affect colour and appearance



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
	F/S	Impregnated with hardened colourless filler to improve appearance	Occasional	Recutting, steaming, ultrasonic or extreme heat may remove filler
	HP/S	Heated under pressure to improve appearance	Rare	Recutting or extreme heat may remove filler
	I/S	Irradiated and/or heated to induce fancy colours	Common	Avoid heating irradiated green stones as the colour may change; some green stones have been radium irradiated; for safety requirements, refer to the NRC
	C/S	Coated to produce fancy colours	Rare	Recutting or extreme heat may damage coating
Diaspore				
Zultanite	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Diopside				
Chrome, star, cat's eye	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Emerald (see Beryl)				
Enstatite	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Epidote	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Euclase	N	None	—	Brittle; avoid heat, steaming, chemicals and ultrasonic
Feldspar				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Microcline (aka 'Amazonite')	F/M	Impregnated with colourless hardened or unhardened filler to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
Andesine (aka 'Sunstone')	HD/S	Heated with Cu to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
Labradorite (aka 'Sunstone')	HD/S	Heated with Cu to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
Labradorite (aka 'Spectrolite')	F/M	Impregnated with colourless hardened or unhardened filler to improve appearance	Occasional	Avoid heat, steaming, chemicals and ultrasonic
Labradorite (aka 'Oregon Sunstone')	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Orthoclase (aka 'Moonstone')	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Oligoclase (aka 'Sunstone')	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Fluorite				
	I/M	Irradiated to improve colour	Common	Both naturally coloured and irradiated fluorites may fade upon prolonged exposure to light; soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Gahnite (see Spinel)				
Garnet				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
All types except Demantoid	N	None	—	Avoid sudden temperature changes; avoid heat, steaming, chemicals and ultrasonic
Demantoid	H/L	Heated to improve colour	Common	Avoid sudden temperature changes; avoid heat, steaming, chemicals and ultrasonic
Helliodor (see Beryl)				
Hematite	N	None	—	Brittle
Hiddenite (see Spodumene)				
Idocrase (see Vesuvianite)				
Iolite (aka 'Tanolite' or 'Cordierite')	N	None	—	Avoid thermal shock; damaged by acids
Jadeite Jade				
All varieties	F/L	Dipped in colourless wax to improve appearance	Always	Avoid heat, steaming, chemicals and ultrasonic
	B + F/S	Two-step bleaching and colourless impregnation to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
	B + FD/S	Two-step bleaching and dyeing to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic; may fade with time
	FD/S	Dyed to improve appearance; dye may be selective in coverage	Common	Avoid heat, steaming, chemicals and ultrasonic; may fade with time



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
	H/M	Heated to intensify brown/orange colour	Common	Avoid heat, steaming, chemicals and ultrasonic
Jasper (see Quartz-Chalcedony)				
Kornerupine	N	None	—	Brittle; handle with care
Kunzite (see Spodumene)				
Kyanite	N	None	—	Somewhat brittle and softer in one direction; handle with care
Labradorite (see Feldspar)				
Lapis Lazuli				
All varieties	FD/S	Dyed to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic; may fade with time
	F/M	Coated or impregnated with colourless filler to improve appearance and durability	Rare	Avoid heat, steaming, chemicals and ultrasonic
Larimar	N	None	—	Somewhat soft; handle with care
Malachite	F/M	Impregnated with colourless hardened or unhardened filler to improve appearance	Occasional	Avoid heat, steaming, chemicals and ultrasonic
Marcasite	N	None	—	Brittle; handle with care
Maw-sit-sit	N	None	—	Avoid heat, steaming, chemicals and ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Moldavite (see Tektite)				
Montebrasite (see Amblygonite)				
Mookite (see Quartz-Chalcedony, Jasper)				
Moonstone (see Feldspar)				
Morganite (see Beryl)				
Mother-of-Pearl (see Pearl)				
Nephrite Jade				
All varieties	FD/S	Dyed to improve appearance; dye may be selective in coverage	Common	Avoid heat, steaming, chemicals and ultrasonic; may fade with time
Cat's eye	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Obsidian	N	None	—	Heat sensitive and brittle
Oligoclase (see Feldspar)				
Onyx (see Quartz-Chalcedony)				
Opal				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
All varieties except fire Opal	F/S	Impregnated with colourless hardened or unhardened filler to improve appearance and/or durability	Occasional	Avoid heat, steaming, chemicals and ultrasonic
Matrix	FD/S	Dyed via sugar solution infilling, then acid bath to dye background and enhance colour play and intensity	Common	Avoid heat, steaming, chemicals and ultrasonic
Fire Opal & moss Opal	N	None	—	Avoid heat, steaming, chemicals and ultrasonic
Pearl, Natural and Cultured				
All varieties, including mother-of-Pearl	FD/L-S	Dyed to improve colour. May include use of coloured nuclei and/or heat	Common	Avoid exposure to UV light, heat, steaming, chemicals and ultrasonic
	B/L	Bleached to improve colour and appearance	Common	Avoid exposure to UV light, heat, steaming, chemicals and ultrasonic
	C/M	Coated to improve appearance	Occasional	Avoid exposure to UV light, heat, steaming, chemicals and ultrasonic
	I/S	Irradiated to improve colour	Occasional	Avoid exposure to UV light, heat, steaming, chemicals and ultrasonic
Peridot	N	None	—	Avoid heat, steaming, chemicals and ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
All varieties	H/L	Heated to improve colour	Occasional	Avoid heat, steaming, chemicals and ultrasonic
	F/L	Impregnated with colourless hardened or unhardened filler to improve appearance and/or durability	Occasional	Avoid heat, steaming, chemicals and ultrasonic
Petalite	N	None	—	Brittle; handle with care
Pezzottaite	F/L–S	Impregnated with colourless hardened or unhardened filler to improve appearance and/or durability	Occasional	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Phenakite	N	None	—	Brittle; handle with care
Prehnite	N	None	—	Brittle; handle with care
Pyrite	N	None	—	Brittle and heat sensitive; handle with care
Quartz				
Cat's eye, rutilated, tourmalinated, rose, rock crystal	N	None	—	—
Amethyst	H/L	Heated to improve colour	Occasional	Whether treated or not, may fade with prolonged exposure to light or heat
Ametrine, translucent blue (aka 'blue moon'), green (aka 'Prase' or 'Prasiolite')	H/L	Heated to improve colour	Common	Whether treated or not, may fade with prolonged exposure to light or heat



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Citrine	H/S	Produced by heating various types of Quartz	Common	Whether treated or not, may fade with prolonged exposure to light or heat
Amethyst, green (aka 'Prase' or 'Prasiolite'), lemon Quartz, Smokey Quartz, blueberry Quartz	I/M	Irradiated to improve colour	Common	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Quartz-Chalcedony				
Agate, banded, blue, green, Jasper	FD/S	Dyed to improve appearance	Common	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Black (Onyx)	H/S	Impregnated/acid treated to alter colour	Always	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Carnelian, sard; sard Onyx	FD/S	Dyed to improve appearance	Occasional	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
	H/M	Heated to improve appearance	Common	—
Chrysoprase, bloodstone	N	—	—	—
Quartzite & Microcrystalline Quartz				
Aventurine	FD/S	Dyed to improve colour	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Black	I/M	Irradiated to improve colour	Common	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Other Quartzite	FD/S	Dyed to improve or completely change colour	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Tiger's eye	H/L	Heated to improve colour	Common	—
	B/L	Bleached to improve colour	Common	—
	FD/S	Dyed to improve or completely change colour	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Rhodonite				
All varieties	FD/S	Dyed to produce various colours	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Ruby (see Corundum)				
Sapphire (see Corundum)				
Sard (see Quartz-Chalcedony)				
Scapolite	N	None	—	Brittle; handle with care; yellow gems may fade in light or heat
Serpentine				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
All varieties	F/M	Impregnated with colourless filler to improve appearance	Common	Avoid heat, steaming, chemicals and ultrasonic
	FD/S	Dyed to alter colour	Rare	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Shell				
Pink	FD/S	Dyed to improve colour	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Sillimanite (Fibrolite)	N	None	—	Brittle; handle with care
Sodalite	FD	Dyed to improve colour	Rare	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Spectrolite (see Feldspar-Labradorite)				
Spheue	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Spinel				
All varieties	F/L–M	Impregnated with colourless filler to improve appearance	Rare	Avoid heat, steaming, chemicals and ultrasonic
Spodumene				
Kunzite	H/L	Heated to improve colour	Common	Natural and/or treated material may fade; avoid heat, strong light, ultrasonic
	I/M	Irradiated and heated to improve colour	Common	Natural and/or treated material may fade; avoid heat, strong light, ultrasonic



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Green (aka 'Hiddenite') and yellow	I/S	Irradiated to produce green colour	Rare	Colour fades in light or heat
Sugillite	N	-	—	Avoid heat, steaming, chemicals and ultrasonic
Sunstone (see Feldspar)				
Tanzanite (see Zoisite)				
Tektite				
Brown, green (aka 'Moldavite')	N	None	—	Brittle; handle with care
Topaz				Somewhat brittle; handle with care
Blue	I + H/S	Irradiated to a brown colour, followed by heating to blue	Common	If neutron irradiated to produce blue colour, refer to NRC for safety requirements; somewhat brittle; handle with care
Brown, yellow, orange	H/L	Heated to improve colour	Common	Somewhat brittle; handle with care
All colours		Spice Topaz uses a unique thin film deposition to evenly diffuse the gem	Rare	Somewhat brittle; handle with care
All colours	C/S	Coated in various colours	Common	Avoid repolishing, which removes coating; some coatings also damaged by chemicals and ultrasonic; somewhat brittle; handle with care



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Tourmaline				
Various colours	H/L	Heated to improve colour	Common	Avoid heat, steaming, chemicals and ultrasonic
	I/L–M	Irradiated to improve colour	Common	Avoid heat, steaming, chemicals and ultrasonic
	F/L–M	Impregnated with colourless filler to improve appearance	Occasional	Avoid heat, steaming, chemicals and ultrasonic
	FD/S	Dyed to improve colour	Rare	May fade in light or heat; avoid heat, steaming, chemicals and ultrasonic
Turquoise				
All varieties	F + I/S	Impregnated with colourless filler to improve appearance and durability; irradiation may be used to harden filler	Common	Avoid heat, steaming, chemicals and ultrasonic
	FD/S	Dyed to improve colour	Rare	Avoid heat, steaming, chemicals and ultrasonic
Vesuvianite (aka Idocrase)	N	None	—	—
Zircon				
Blue, yellow, orange, green, colourless	H/L–S	Heated to improve colour	Common	Colour may fade with time; can be restored by reheating
Zoisite				



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Tanzanite, green Tanzanite & chameleon Tanzanite	H/L-S	Heated to improve colour	Common	Avoid sudden temperature changes, heat, steaming, chemicals and ultrasonic
Tanzanite	C/S	Coated to improve colour	Rare	Avoid repolishing, which removes coating; some coatings also damaged by chemicals and ultrasonic
Zultanite (see Diaspore)				
Gem Enhancement & Care Chart—Other Gems				
Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Anatase	N	None	—	Avoid chemicals and ultrasonic
Anglesite	N	None	—	Avoid chemicals and ultrasonic; brittle and soft; avoid thermal and physical shock
Apophyllite	N	None	—	Avoid chemicals and ultrasonic; brittle and soft; avoid thermal and physical shock
Aragonite	N			
Axinite	N	None	—	Brittle; avoid shock
Barite	N	None	—	Fragile; handle with care



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Bastnäsite	N	None	—	Fragile; handle with care
Boracite	N	None	—	—
Burbankite	N	None	—	Fragile; handle with care
Bustamite	N	None	—	Fragile; handle with care
Calcite	N	None	—	Fragile; handle with care
Cassiterite	N	None	—	Brittle; handle with care
Celestite	N	None	—	Fragile; handle with care
Cinnabar	N	None	—	Fragile; handle with care
Creedite	N	None	—	Fragile; handle with care
Datolite	N	None	—	Somewhat fragile; handle with care
Dolomite	N	None	—	Fragile; handle with care
Dumortierite	N	None	—	—
Ekanite	N	None	—	May be radioactive; should not be worn in jewellery or kept near skin
Eosphorite	N	None	—	Somewhat soft; handle with care
Euclase	N	None	—	Brittle; avoid heat, steaming, chemicals and ultrasonic
Eudialyte	N	None	—	Somewhat soft; handle with care
Genthelvite	N	None	—	—



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Haüyne	N	None	—	Fragile; handle with care
Hemimorphite	N	None	—	Somewhat soft; handle with care
Herderite	N	None	—	Somewhat soft; handle with care
Howlite				
Blue	FD/S	Dyed to improve colour	Always	Avoid heat, steaming, chemicals and ultrasonic; may fade over time. Somewhat soft; handle with care
White	N	None	—	Somewhat soft; handle with care
Leifite	N	None	—	Brittle; handle with care
Leucite	N	None	—	Brittle; handle with care
	N	None	—	Somewhat brittle; handle with care
Mellite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Milarite	N	None	—	Brittle; handle with care
Monazite	N	None	—	May be radioactive; should not be worn in jewellery or kept near skin



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Natrolite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Nuumit (Nuumite)	N	None	—	—
Painite	N	None	—	—
Parisite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Pollucite	N	None	—	Brittle; handle with care
Poudretteite	N	None	—	Somewhat soft; handle with care
Pyroxmangite	N	None	—	Brittle; handle with care
Remondite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Rhodochrosite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Rhodonite				
All varieties	FD/S	Dyed to produce various colours	Common	Dye may fade; avoid heat, steaming, chemicals and ultrasonic
Rutile	N	None	—	Brittle; handle with care



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Gem Enhancement & Care Chart—Normal Gems

Gemstone	Code & Degree	Enhancement Method	Frequency Used	Special Advice
Scheelite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Scolecite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Sellaite	N	None	—	Brittle; handle with care
Senarmontite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Serandite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Shortite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic
Siderite	N	None	—	
Sinhalite	N	None	—	—
Smithsonite	N	None	—	Soft and brittle; handle with care; avoid heat, steaming, chemicals and ultrasonic



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