

gemstone information manual

fifteenth edition

INDUSTRY INFORMATION GUIDE FOR
NATURAL GEMSTONES,
ENHANCED NATURAL GEMSTONES &
MAN-MADE STONES—
including care & handling recommendations



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American
Gem Trade
Association

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DCA	DIAMOND COUNCIL OF AMERICA 3212 West End Ave., Ste. 202 Nashville, TN 37203 615-385-5301
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Note: A Review Board, consisting of Association representatives and Laboratory technical advisors, will meet from time to time to make necessary modifications to this industry manual.

INTRODUCTION

The Federal Trade Commission Guides for the Jewelry Industry as revised April 10, 2001 are designed to prevent unfair or deceptive trade practices. The revised Guides contain new language as to gemstone enhancement disclosure requirements which apply equally to diamonds and all other natural gemstone materials.

This manual contains information necessary for minimal compliance with the revised FTC Guides and ethical jewelry trade practices. It also provides a useful method to communicate required gemstone treatment disclosure information within the trade.

FTC DISCLOSURE REQUIREMENTS

With the exception of the normal fashioning (cutting and polishing) of a gemstone, it is the seller's responsibility at all levels of commerce to clearly disclose to the buyer at the time of sale:

- 1) Whether the gemstone is natural or not;
- 2) All information pertinent to any enhancement process done to a natural gemstone when:
 - a. the treatment is not permanent and its effects are lost over time; or
 - b. the treatment creates special care requirements for the gemstone to retain the benefit of the treatment; or
 - c. the treatment has a significant effect on the value of the gemstone.

Minimal disclosure information would include whether the gemstone is natural or man-made; if natural, whether the gemstone has been treated in any manner where 2 (a), (b) or (c) above apply; and in such cases, the nature of the treatment, its permanence and any special care requirements.

As to "significant effect on value," the position of the FTC is that treatment has a significant effect on the value of a gemstone whenever the effect of treatment on value is likely to affect a reasonable buyer's purchasing decision. Such is the case whenever there is a significant (more than slight) difference in value between a treated gemstone and an untreated gemstone of the same type, size and appearance. The FTC's comments to the revised Guides state that "the consumer's point-of-view is the relevant viewpoint from which to analyze the necessity for disclosure." Treatment must be disclosed whenever a buyer, without disclosure of treatment, would believe that two seemingly identical gemstones, one treated and one not, are identical or very comparable in value, when in fact, they are not.

Small gemstones, whether mounted or not, are not exempt from any disclosure requirements. However, when applying the "significant value" test in the case of jewelry products, the effect on the composite value of the mounted piece should be considered.

When it is not known with certainty whether or not a gemstone has been treated, but treatment is suspected (as in the case of gemstone types which are known to be routinely treated), the FTC states that "it is prudent and appropriate to disclose gemstone treatments rather than remain silent when there is a possibility that the stones have been treated."

This minimum disclosure information is required by the FTC. Failure to disclose that a gemstone is not natural, or enhancement information as to a treated natural gemstone in compliance with the FTC Guides, subjects the violator to FTC enforcement action, civil penalties and trade sanctions.

Any seller who is uncertain as to these requirements may write the American Gem Trade Association, 3030 LBJ Fwy., Ste. 840, Dallas, TX 75234 or the Jewelers Vigilance Committee, Inc., 25 W. 45th St., Ste. 1406, New York, NY 10036.

These disclosure requirements are applicable to all sellers at each and every level of gemstone and jewelry commerce, including sellers of uncut gemstone material and cut and polished gemstones, manufacturers and

wholesalers of jewelry containing natural or man-made gemstones, and retail sales to consumers. Disclosure must be made at the point of sale prior to sale; provided, however, that where a gemstone or a jewelry product which contains gemstones can be purchased without the buyer personally viewing the product (e.g., catalog sales, catalog showrooms, mail order houses, online services, televised shopping programs or other media sales programs, telephone sales, etc.), disclosure must be made in the solicitation for or description of the product.

DISCLOSURE METHODS WITHIN TRADE

Gemstones have historically and traditionally been enhanced. The methods of the enhancement processes vary within each variety and change as new and better methods are developed.

The Federal Trade Commission, with the cooperation of the Jewelers Vigilance Committee and other industry associations, requires the jewelry industry to inform all buyers of gemstone enhancement. This manual provides a listing of traditional, historical and contemporary enhancements, as well as a convenient means of communicating treatment information within the trade.

The codes listed in this manual provide an easy-to-understand shorthand system for labeling to be used only within the trade. Each material that may require disclosure has been assigned a code consisting of one or more letters indicating the enhancement (or possibility of enhancement) and identifying the pertinent process. Disclosure should be made within the trade on every tag, stone paper, container, invoice, memorandum or other commercial document each time a seller offers for sale or sells a gemstone or jewelry product containing gemstones to a buyer within the trade. Use of the disclosure codes provided herein gives the gem and jewelry industry a convenient means of complying with disclosure of gemstone treatment within the trade as required by the Federal Trade Commission Guides.

It should be remembered, however, that use of the codes to accomplish disclosure within the trade is a matter of convenience and choice. A seller is free to use any language or method to disclose treatment that fulfills the FTC requirements. Use of the codes, however, is encouraged to promote a uniform and consistent communication language.

CONSUMER DISCLOSURE REQUIREMENTS

The information in this manual will assist retail sellers in meeting disclosure requirements by providing all necessary information that must be disclosed to consumers. However, when disclosing to retail consumers, all required disclosure must be made in plain language. Codes and/or abbreviations are not sufficient. Various trade associations publish a variety of consumer information products which are available to retail sellers as aids to communicate required disclosure information to retail consumers.

AGTA MEMBER REQUIREMENTS

The above requirements are applicable to all sellers at all levels of commerce within the trade. The disclosure requirements of the American Gem Trade Association are more stringent than the FTC minimal requirements, and all AGTA Members are bound by and must disclose in accordance with the AGTA Code of Ethics, which is not changed by the revision of the FTC Guides.

This edition of the Gemstone Information Manual was submitted to the Federal Trade Commission on behalf of the gem and jewelry industry for informational purposes.

DEFINITIONS

ENHANCEMENT: Any traditional process other than cutting and polishing that improves the appearance (color/clarity/phenomena), durability or availability of a gemstone.

A gemstone enhancement is considered permanent as long as the effect of the enhancement does not change under normal wear, cutting, repair, cleaning or display conditions. If a gemstone enhancement is not permanent, appropriate disclosure is required.

With respect to treatment, all natural gemstones can be divided into two basic categories:

1) Those which are not enhanced.

N The "N" symbol appears on the chart only for natural gemstones which are not currently known to be enhanced (Alexandrite, Garnet, etc.). However, the "N" symbol can also be used for other natural gemstones in the event that a gemstone has received no enhancement and the seller will provide a guarantee that there has been none. That gemstone must be accompanied by a commercial document, such as an invoice, a memorandum and/or a laboratory report, to support the fact that the gemstone is not enhanced.

2) Those treatment processes not covered under the "N" symbol are addressed in a specific manner as shown on pages 9 through 18.

Since many enhancements are difficult or impractical to prove definitively, the approach taken in this manual is, unless otherwise indicated, to assume that such traditional enhancement has been done to that particular gemstone. This assumption has been made in order to protect both the seller and the consumer.

For example, Ruby "F." The surface cavities are filled with a foreign matter such as glass. Within the industry, this gemstone must be labeled with the letter "F." This information must also be provided to the consuming public in writing using plain language. Abbreviations and codes are not sufficient.

NOTE: Multiple enhancement techniques are sometimes applied to the same material. All treatments must be listed. Example: Diamond "LF" (Laser and Filling).

Defined below are the specific enhancement codes and designations to be used in the

GEMSTONE INFORMATION CHART. (See pages 9 through 18.)

SYMBOLS FOR SPECIFIC FORMS OF ENHANCEMENT

- N** Natural: No modification (or currently has no known modification process).
- B** Bleaching: The use of heat, light and/or other agents to lighten or remove a gemstone's color.
- C** Coating: The use of such surface enhancements as lacquering, enameling, inking, foiling or sputtering of films to improve appearance, provide color or add other special effects.
- D** Dyeing: The introduction of coloring matter into a gemstone to give it new color, intensify present color or improve color uniformity.
- F** Filling: The filling of surface-breaking cavities or fissures with colorless glass, plastic, solidified borax or similar substances. This process may improve durability and/or appearance, and/or to add weight.
- H** Heating: The use of heat to effect desired alteration of color, clarity and/or phenomena. If residue of foreign substances in open fissures is visible under properly illuminated 10X magnification, H F should be used.
- HP** Heating and Pressure: The use of heat and pressure combined to effect desired alterations of color, clarity and/or phenomena.
- I** Impregnation: The impregnation of a porous gemstone with a colorless agent (usually plastic) to improve durability and appearance.
- L** Lasering: The use of a laser and chemicals to reach and alter inclusions in gemstones, usually diamonds.
- O** Oiling/Resin Infusion: The filling of surface-breaking fissures with colorless oil, wax, resin or other colorless substances, except glass or plastic, to improve the gemstone's appearance.
- R** Irradiation: The use of neutrons, gamma rays or beta particles (high energy electrons) to alter a gemstone's color. The irradiation may be followed by a heating process.
- U** Diffusion: The use of chemicals in conjunction with high temperatures to produce ARTIFICIAL color change and/or asterism-producing inclusions.
- Note:** It is a violation of the FTC Guides to fail to disclose diffusion on gemstones in advertising, promotional literature or commercial documents. Suggested methods of disclosure are:
 "(Gemstone): chemically colored (Color) by diffusion."
 Example: "Sapphire: chemically colored blue by diffusion."
- If the color of the diffused gemstone does not permeate the entire stone, then the following statement must also appear:
 "Although the color induced in diffusion treated gemstones is permanent, it does not permeate the entire gemstone; therefore, recutting or repolishing is not recommended."
- W** Waxing/Oiling: The impregnation of a colorless wax, paraffin or oil in porous opaque or translucent gemstones to improve appearance.

DESIGNATIONS

The above disclosure language must be printed in a type-size and location so as to be conspicuous. Designations are based on a consensus of opinion rather than any available documentation.

- A. Enhancement Frequency Designations
 - 1. Rarely 2. Occasionally 3. Commonly 4. Usually 5. Always 6. Unknown
- B. Enhancement Stability Designations
 - 1. Excellent 2. Very Good 3. Good 4. Fair 5. Poor 6. Variable
- C. Care Designations
 - 1. Normal 2. Special 3. Extra Special

INTRODUCTION OF THE GEMSTONE INFORMATION CHART

Please keep in mind the following information when reading and interpreting the Gemstone Information Chart:

- The column labeled FREQUENCY USED represents a reasonable estimate of how commonly a particular enhancement process is utilized in the trade, based on a consensus of opinion.
- The columns FREQUENCY USED and STABILITY refer specifically to the enhancement process applied to the material.
- The CARE REQUIRED and SPECIAL ADVICE columns reflect two basic concerns. The first relates to special care that may be necessary to preserve the effect of the enhancement applied to the material, and the second issue addresses the need for any special care required by the specific gemstone variety, irrespective of enhancement.

SC The "SC" symbol is used to designate those gemstones that require special care. If a gemstone enhancement is not permanent, appropriate disclosure is required. Please refer to the CARE REQUIRED and SPECIAL ADVICE columns in the following charts for those gemstones requiring special care.

	N	None	---	---	---	Normal	
Alexandrite							
Amazonite	W	Impregnated with a colorless wax, paraffin or oil to improve appearance	Usually	Good to Fair	Special (SC)	Special (SC)	Avoid heat, chemicals and ultrasonic
	I	Impregnated with plastic and other hardened resins to improve appearance	Usually	Very Good	Special (SC)	Special (SC)	Avoid chemicals and ultrasonic
Amber	D	Dyed or surface treated to add color	Occasionally	Fair	Special (SC)	Special (SC)	Avoid chemicals and ultrasonic
	H	Heated to improve appearance and "sun-spangles," or deepen color	Usually	Very Good to Good	Special (SC)	Special (SC)	Avoid chemicals and ultrasonic
	D	Dyed or surface treated to add color	Rarely	Variable	Special (SC)	Special (SC)	Color fades, avoid heat and extended sun
	HP	Changed color and/or artificially aged, treated in autoclave	Commonly	Very Good	Normal	Normal	Avoid chemicals and ultrasonic
Amblygonite	R	Irradiated to improve colors	Occasionally	---	Special (SC)	Special (SC)	Color fades, avoid heat and chemicals
Amethyst	H	Heated to lighten color and/or to remove "smokey" components	Occasionally	Excellent	Special (SC)	Special (SC)	Some unheated material may fade in long exposure to sunlight
Ametrine	H	None	---	---	Normal	Normal	
Ammolite	ASBL	Impregnated with colorless hardened substances to increase stability	Commonly	Good to Fair	Special (SC)	Special (SC)	Avoid heat, household chemicals and ultrasonic
Andalusite	N	None	---	---	Normal	Normal	
Aquamarine	H	Heated to remove yellow component, thereby producing a pure blue color	Usually	Excellent	Normal	Normal	
Beryl Blue ("Maxixe" Type)	R	Irradiated blue from pale pink to colorless	Always	Poor	Extra-Special (SC)	Extra-Special (SC)	Color fades, avoid light and heat
Pink	R	Irradiated to improve color	Rarely	Fair	Special (SC)	Special (SC)	Avoid heat
Yellow-Green	N	None	---	---	Normal	Normal	

Beryl (continued)	O	The penetration of colorless oil and resins into fissures to improve appearance	Commonly	Very Good to Fair	Special (SC)	Avoid high temperatures, steam cleaning, chemicals and ultrasonic
Red	R	Produced by irradiation	Usually	Variable	Normal/Special depending on method (SC)	Certain stones may fade in light or heat
Yellow						
Chalcedony	D	Dyed	Usually	Excellent to Good	Normal	
Agate	D	Dyed	Always	Excellent to Good	Normal	
Black (Onyx)	D	Dyed	Usually	Excellent	Normal	
Banded	D	Dyed	Commonly	Good to Fair	Special (SC)	Certain stones may fade in light or heat
Blue	D	Dyed	Usually	Good to Fair	Special (SC)	Certain stones may fade in light or heat
Green	D	Dyed	Usually	Excellent	Normal	
Carmelian	H	Heated to produce color	Occasionally	Excellent to Good	Special (SC)	Certain stones may fade in light or heat
Jasper	D	Dyed to produce color	Commonly	Fair	Normal	Avoid chemicals
Chrysoprase	W	Waxed	Commonly	Fair	Normal	
	N	None	----	----	Normal	
Chrysoberyl	R	Irradiated to change color	Rarely	Excellent	Normal	For safety requirements, if neutron irradiated, refer to code letter "R," page 7
Cat's Eye						
Transparent Varieties:	N	None	----	----	Normal	
Yellow	N	None	----	----	Normal	
Brown	N	None	----	----	Normal	
Green	N	None	----	----	Normal	
Citrine	H	Produced by heating various types of quartz	Usually	Excellent	Normal	

Coral	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
Black	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
White	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
Pink	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
Orange	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
"Gold"	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
Red	D,I	Assembled with polymers and dyed	Occasionally	Fair	Special (SC)	Avoid chemicals and solvents
Diamond	L	Laser drilled to improve appearance	Occasionally to Commonly	Very Good	Normal	
Colorless to Faint Yellow	C	Coated to disguise off-color	Rarely	Very Good to Poor Depending on Method	Variable	Recutting, steam cleaning, ultrasonic and occasionally alcohol may adversely affect color and appearance
	F	Surface cavities or fractures filled with a hardened substance	Occasionally	Very Good	Special (SC)	Recutting or extreme heat may remove filling material
Colored	HP	Heated with pressure to alter color and/or clarity	Rarely	Unknown	Normal	
	L	Laser drilled to improve appearance	Occasionally	Very Good	Normal	
	F	Surface cavities or fractures filled with a hardened substance	Rarely	Very Good	Special (SC)	Recutting or extreme heat may remove filling material
	R	Irradiated and/or heated to induce "fancy" colors	Occasionally	Excellent to Very Good	Normal except green	Avoid heating treated green stones as the color may change. Some green stones have been radium irradiated for safety requirements; refer to the NRC
	C	Coated to "fancy" colors	Rarely	Fair to Poor	Special (SC)	Recutting, steaming and ultrasonic may adversely affect color and appearance

Diamond (continued)	Colored	H	Heated to alter color	Rarely	Unknown	Normal	
Diopside (Chrome)	HP	HP	To create fancy colors	Commonly	Excellent		
	N	N	None	----	----	Special (SC)	Avoid sudden temperature changes and harsh chemicals
Emerald	O	O	The penetration of colorless oil, wax and resins into fissures to improve appearance	Usually	Very Good to Fair	Special (SC)	Avoid sudden temperature changes, steaming, chemicals and ultrasonic
	D	D	Dyed with color agents	Occasionally	Variable	Special (SC)	Avoid sudden temperature changes, steaming, chemicals and ultrasonic
Garnet							
Almandite	N	N	None	----	----	Normal	Avoid sudden temperature change
Demantoid	H	H	To improve color	Occasionally	Good	Normal	Avoid sudden temperature change
Grossularite	N	N	None	----	----	Normal	Avoid sudden temperature change
Pyrope	N	N	None	----	----	Normal	Avoid sudden temperature change
Rhodolite	N	N	None	----	----	Normal	Avoid sudden temperature change
Spessartite	N	N	None	----	----	Normal	Avoid sudden temperature change
Tsavorite	N	N	None	----	----	Normal	Avoid sudden temperature change
Hematite	N	N	None	----	----	Normal	
Iolite	N	N	None	----	----	Normal	
Ivory & Bone	B	B	Bleached to whiten and remove discoloration	Commonly	Good	Special (SC)	Avoid chemicals and ultrasonic, may discolor in time
	D	D	Dyed for artistic purposes	Occasionally	Good	Special (SC)	Avoid chemicals and ultrasonic, may discolor in time

Ivory & Bone (continued)	W	W	Impregnated with colorless paraffin wax	Occasionally	Good	Special (SC)	Avoid chemicals and ultrasonic, may discolor in time
Mammoth (Ivory)	I	I	Impregnated with colorless hardened substances to increase stability	Commonly	Good	Normal	
Jade							
Jadeite	W	W	Coated with colorless wax	Commonly	Fair	Normal to Special (SC)	Avoid ultrasonic
	B or W	B or W	Two-step bleaching and wax impregnation	Rarely	Poor	Special (SC)	Avoid heat, chemicals and ultrasonic
Green, White and Purple	B and S	B and S	Two-step bleaching and polymer impregnation	Commonly	Very Good to Good	Special (SC)	Avoid heat, chemicals and ultrasonic
	D	D	Dyed to imitate natural colors	Occasionally	Variable	Special (SC)	Avoid strong light, chemicals and ultrasonic, may discolor in time
Nephrite	D	D	Dyed selectively to alter color for artistic purposes in carvings	Rarely	Unknown	Special (SC)	Avoid chemicals, ultrasonic and strong light
Kunzite	H	H	Heated to improve color from certain locations	Commonly	Fair	Special (SC)	Natural and/or treated materials may fade — avoid ultrasonic and strong light
	R	R	Irradiated and heated to darken color	Commonly	Fair to Poor	Special (SC)	Natural and/or treated materials may fade — avoid heat, ultrasonic and strong light
Lapis Lazuli	W	W	Coated with colorless wax or oil to improve appearance	Commonly	Fair	Normal to Special (SC)	Avoid chemicals and ultrasonic
	D	D	Dyed to provide color and/or uniformity	Commonly	Variable	Special (SC)	Avoid chemicals and ultrasonic
Malachite	W	W	Coated with colorless wax	Occasionally	Fair	Special (SC)	Avoid chemicals and ultrasonic
	I	I	Impregnated with plastic and/or other hardened agents to improve durability and appearance	Rarely	Good	Special (SC)	Avoid chemicals and ultrasonic
Moonstone	O	O	Oiled to improve clarity	Occasionally	Fair	Normal	Avoid ultrasonic

Opal White, Black & Semi-Black	O	Impregnated with colorless oil, wax and resins	Rarely	Fair	Special (SC)	Avoid ultrasonic, heat and solvents
	I	Impregnated with colorless plastic to increase durability and improve appearance	Rarely	Good	Special (SC)	Avoid heat and solvents
Matrix	D	Sugar solution inling in acid bath to darken background and enhance color play and intensity	Commonly	Good	Special (SC)	Avoid solvents and repolishing
	O	Infusion of unhardened essentially colorless substances into voids to improve appearance	Occasionally	Fair	Special (SC)	Avoid heat, chemicals, ultrasonic and repolishing
Fire Opal	N	None	-----	-----	Special (SC)	Avoid heat
Cat's Eye	I	Impregnated with colorless resins to give durability and improve appearance	Usually	Good	Special (SC)	Avoid heat, chemicals and ultrasonic
Hydrophane	O	Impregnated with colorless oil, wax and resins to hide crazing	Commonly	Fair	Special (SC)	Avoid heat, solvents and ultrasonic
	D	Dyed with colorants	Occasionally	Good	Special (SC)	Avoid acids and oils
	I	Impregnated with colorless plastic to improve appearance and increase durability	Commonly	Good	Special (SC)	Avoid heat and solvents
Pearl Natural	B	Bleached to improve color and appearance	Usually	Very Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	D	Dyed with or without chemical treatment combined with heat to produce gray to black	Rarely	Very Good to Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	B	Bleached to improve color and uniformity of white color only	Usually	Excellent	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	D	Dyed to give rose, blue or golden overtones	Usually	Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic

Pearl (continued) Cultured	D	Dyed blue, black and other colors includes use of colored nuclei	Occasionally	Variable	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	D	Dyed all colors (freshwater)	Usually	Very Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	R	Irradiated to produce blue, gray, black and bronze colors	Occasionally	Very Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
	D	Chemical treatment combined with heat to produce gray to black	Commonly	Very Good to Good	Special (SC)	Avoid chemicals, cosmetics and ultrasonic
Wabe "Pearl"		See Assembled Materials on page 21	-----	-----	Extra-Special (SC)	Avoid household chemicals, cosmetics, abrasives and sudden shock
Peridot	O	Penetration of colorless oil, wax and resins into voids to improve appearance	Rarely	Good to Fair	Special (SC)	Avoid sudden temperature changes, harsh chemicals and ultrasonic
	F	Surface fractures filled with a colorless hardened substance	Rarely	Good	Special (SC)	Avoid sudden temperature changes, harsh chemicals and ultrasonic
Rhodonite	D	Dyed to "even out color"	Occasionally	Poor	Special (SC)	Avoid chemicals and ultrasonic
Ruby	H	Heated to improve color and appearance (residue of foreign substance is not visible under 10X magnification)	Usually	Excellent	Normal	
	D	Dyed with colored oil to improve appearance	Rarely	Poor	Special (SC)	Avoid household chemicals and ultrasonic
	F	Intentional filling of surface cavities and fractures with a foreign material, including glass, which is visible under 10X magnification	Commonly	Fair to Poor	Special (SC)	Fracture filling requires special care. Avoid heat, ultrasonic and common household chemicals. See page 21
	R	Irradiated to change color	Rarely	Unknown	Normal	For safety requirements, if neutron irradiated, refer to code letter "R" on page 7

Ruby (continued)	U	Diffusion of an element or elements (with the exception of hydrogen) into the lattice of a stone during the application of heat to create artificial color or asterism. Effects may be throughout the stone or at or near the surface. See Symbols for Specific Forms of Enhancement, page 7	Occasionally -----	Excellent or Good when effect is not near surface Normal or Special when effect is near surface	Normal Special (SC)	Avoid repolishing or recutting when effect is near surface (1)
Sapphire	H	Heated to produce, intensify or lighten color and/or improve color uniformity and appearance	Usually	Excellent	Normal	
	U	Diffusion with an element or elements (with the exception of hydrogen) into the lattice of a stone during the application of heat to create artificial color or asterism. Effects may be throughout the stone or at or near the surface. Most colors may be produced. See Symbols for Specific Forms of Enhancement, page 7	Commonly -----	Good when effect is not near surface Normal or Special when effect is near surface (1)	Normal Special (SC)	Avoid repolishing or recutting when effect is near surface
	R	Irradiated to provide temporary intense yellow or orange color	Occasionally	Very Poor	Extra Special (SC)	Fades quickly in light or heat
Serpentine	D	Dyed various colors	Commonly	Good to Fair	Special (SC)	Dye may fade
	W	Impregnated with colorless wax	Commonly	Very Good to Good	Special (SC)	Avoid ultrasonic
Sodalite	D	Dyed	Rarely	Fair	Special (SC)	Dye may fade
Spinel	N	None	-----	-----	Normal	
Spodumene Green	R	Irradiated to produce green color	Rarely	Poor	Extra Special (SC)	Color fades in light or heat

Spodumene (Continued) Yellow	R	Irradiated to produce yellow color	Rarely	Poor	Extra Special (SC)	Color fades in light or heat
Sugilite	D	Improvement of color	-----	Fair	Normal	Avoid chemicals
Tanzanite	H	Heated to produce violet-blue color	Usually	Excellent	Special (SC)	Avoid sudden temperature changes and harsh abrasives
Topaz Blue	R	Irradiated brown and often heated to produce blue color	Usually	Excellent	Normal	For safety requirements, if neutron irradiated, refer to code letter "R," page 7
Yellow/Orange	R	Irradiated to intensify color	Occasionally	Variable	Special (SC)	Avoid heat and strong light
Pink/Red	H	Heated chromium-bearing pinkish-brown to orange stones	Usually	Excellent	Normal	
Brown	N	None	-----	-----	Special (SC)	May fade in exposure to sunlight
Green	R	Irradiated to produce a green color	Occasionally	Poor	Extra Special	Color fades in exposure to sunlight
Green	U	Diffusion of color at or near surface. See Specific Forms of Enhancement, page 7	Usually	Good	Special (SC)	Avoid repolishing or recutting
All Colors	C	Any substance applied to the surface of the gemstone to artificially modify color and/or appearance	Commonly	Poor	Special (SC)	Avoid repolishing or recutting, steaming, chemicals or ultrasonic
Tourmaline	N	None	-----	-----	Normal	
Chrome Vanadium	N	None	-----	-----	Normal	
Cat's Eye	H	Heated to improve color	Rarely	Excellent	Normal	
Yellow/Orange	R	Irradiated to improve color	Rarely	Very Good	Normal	

Tourmaline (continued) Green, Blue	H	Heated to improve color	Commonly	Excellent	Normal	
	O	The penetration of colorless oil or resins into voids to improve appearance	Occasionally	Good to Fair	Special (SC)	Avoid temperature changes, steaming, chemicals and ultrasonic
Pink, Red, Purple	H	Heated to improve color	Occasionally	Excellent	Normal	
	R	Irradiated to intensify color	Commonly	Good	Normal	
Turquoise	O	Penetration of colorless oil or unhardened resins into voids to improve appearance	Occasionally	Good to Fair	Special (SC)	Avoid temperature changes, steaming, chemicals and ultrasonic
	D	Penetration of coloring agents into voids to improve appearance	Occasionally	Fair to Poor	Special (SC)	Avoid temperature changes, steaming, chemicals and ultrasonic
Zircon Green, Brown Yellow Blue and Colorless Red Pink	I	Impregnated with plastic to create or improve color and increase durability	Commonly	Good	Special (SC)	Avoid hot water and household chemicals
	W to enhance or create color	Impregnated with colorless oil or wax	Commonly	Fair to Poor	Special (SC)	Avoid hot water and household chemicals
Zircon Green, Brown Yellow Blue and Colorless Red Pink	D	Dyed to improve color	Rarely	Poor	Extra-Special (SC)	Avoid hot water and household chemicals
	N	None	---	Good	Special (SC)	Avoid harsh abrasives
Zircon Green, Brown Yellow Blue and Colorless Red Pink	H	Heated to improve color	Rarely	Good	Special (SC)	Avoid harsh abrasives
	H	Brownish crystals are heated to these colors	Always	Good	Special (SC)	Avoid strong UV light
Zircon Green, Brown Yellow Blue and Colorless Red Pink	H	Heated to change brownish crystals to red	Commonly	Good	Special (SC)	Avoid harsh abrasives and strong UV light
	H	Improves color to pink	Usually	Good	Special (SC)	Avoid harsh abrasives and strong UV light

INFORMATION REQUIREMENTS FOR MAN-MADE MATERIALS THAT RESEMBLE NATURAL GEMSTONES

INTRODUCTION

This manual sets forth proper methods to comply with FTC Guides regarding synthetic, simulated and imitation stones. Historically, materials have been produced to duplicate or imitate the appearance of natural gemstones. When non-natural materials or other gemstone substitutes are offered for sale, it is the seller's responsibility to inform buyers that these "man-made materials" are not "natural gemstones." This information is required by the Federal Trade Commission (FTC).

Such information is required at each and all levels of gem and jewelry commerce. Those specially responsible to inform buyers include sellers of the uncut and cut/polished non-natural materials; manufacturers and wholesalers of jewelry containing non-natural materials; retailers, including sales over the counter, catalog, catalog showrooms, mail order rms, internet, television or other media sales programs; and advertisers.

Anyone who is uncertain about these requirements may write the American Gem Trade Association, 3030 LBJ Fwy., Ste. 840, Dallas, TX 75234 or the Jewelers Vigilance Committee, 25 W. 45th St., Ste. 1406, New York, NY 10036.

PURPOSE

This manual provides an easy-to-understand shorthand system for labeling. Each of the broad non-natural material categories has been assigned a code consisting of two or more letters. Each code identifies the nature of material from which it was made.

The appropriate code is to be used within the trade on every tag, stone paper, container, invoice, memorandum or other commercial document each time a seller offers for sale or sells one of these materials to a buyer within the trade.

However, codes and abbreviations are not sufficient when dealing with the consuming public. In order to clearly disclose the nature of these products, and to make it perfectly clear that they are not natural gemstones, plain language, not codes or abbreviations, must be used in all advertising and promotion, stone papers, containers, sales slips, invoices, memoranda or other commercial documents. For example, the word(s) "Synthetic" or "Laboratory Grown," "Imitation," "Assembled," or some other word or phrase of like meaning must be used in place of, or in addition to, abbreviations or code symbols.

Trade names used to promote various products must be accompanied by a specific reference to the actual composition of the material(s) the product contains.

TAG CODES AND DEFINITIONS

I. SYNTHETIC STONES

The term "synthetic" is scientifically correct and is appropriate for use within the trade. When communicating to the consumer, retail jewelers have the option to call these materials either synthetic or by some other word or phrase of like meaning so as to clearly disclose the nature of such product and the fact that it is not a natural gemstone, such as "man-made" or "laboratory grown."

SYN The tag code may be used to describe "synthetic" materials that have essentially the same optical, physical and chemical properties as a naturally occurring counterpart. The code name may not be used as a noun; thus a stone must not be referred to as a "synthetic." In all cases, the name of the stone must also be used; thus, a stone must be referred to as "synthetic ruby," "laboratory grown sapphire," or "Chatham-Created emerald," etc.

Examples: SYN Emerald, Ruby, Sapphire (various colors and colorless), Spinel, Alexandrite, Cat's Eye Alexandrite, Amethyst, etc.

The Tag Code may not be used with the consuming public; only plain language is acceptable.

Synthetic stones are as stable in color and composition as their natural untreated counterpart.

II. IMITATION PRODUCTS – SIMULANTS (SUBSTITUTES)

IMIT "IMIT" is the tag code used for a manufactured product fabricated in such materials as glass, ceramic or plastic designed to imitate or resemble the appearance, but not duplicate the characteristic properties, of a natural gemstone.

These materials may require special care; avoid household chemicals, cosmetics, abrasives and sudden shocks.

"IMIT" is also the tag code for a simulant, which is defined as a man-made single crystal product that is used to simulate the appearance, but not duplicate the characteristic properties of the natural gemstone it imitates.

Examples are: synthetic Spinel, synthetic Sapphire, synthetic Quartz, YAG, GGG, strontium titanate, and synthetic Cubic Zirconia produced in various colors to imitate gemstones of different species.

This category also includes non-single crystal materials such as imitation Lapis Lazuli and imitation Coral.

NOTE: Trade names used to promote various simulant products in these categories must be accompanied by a specific reference to the actual composition of the simulant crystal material.

TAG CODES AND DEFINITIONS

III. ASSEMBLED MATERIALS

ASBL "ASBL" is the tag code for products made of multiple layers or combinations of manufactured and/or natural material fused, bonded or otherwise joined together to increase stability and/or imitate the appearance of a natural gemstone, create a unique design or generate unusual color combinations.

EXAMPLES:

ASBL Opals – (Various Combinations) Doublets and Triplets

ASBL Garnet – Glass Doublets

ASBL Sapphire – Synthetic Sapphire Doublets

ASBL Colorless Beryl – joined by green bonding (Triplets)

ASBL Mabe "Pearls" color coated, dyed, bleached, lled with hardened substances and a Mother of Pearl back. Sometimes coating can be plastic or polymer to protect the thin nacre.

ASBL Bonded material such as Turquoise, Lapis, etc.

The "ASBL" coded stones require special care; avoid household chemicals, cosmetics, abrasives and sudden shocks.

IV. COMPOSITE MATERIALS

CMP "CMP" is the tag code for products made of disparate parts or elements in their construction.

EXAMPLES:

CMP Rubies – Lead Glass Filled Composite

CMP Sapphires – Lead Glass Filled Composite

CMP Emeralds – Pieces Bonded with Polymer

CMP Turquoise – Reconstructed and Bonded with Polymer

The "CMP" coded stones require special care; avoid household chemicals, heat, abrasives, ultrasonic and sudden shocks.