

September 28, 2012

Donald S. Clarke
Secretary
Federal Trade Commission
Office of the Secretary
Room H-113 (Annex O)
600 Pennsylvania Avenue, NW
Washington, DC 20580

RE: Jewelry Guides, 16 CFR, Part 23, Project No. G711001

Dear Secretary Clarke:

This submission by the Accredited Gemologists Association (AGA) is in response to your request for comments regarding your comprehensive review of the Commission's Guides for the Jewelry, Precious Metals, and Pewter Industries, and your specific request for comments pertaining to lead-glass-filled rubies.

The AGA was founded in 1974 to provide continuing gemological education on new gemstone discoveries, new occurrences of known gemstones, treatments, synthetic materials, and imitations. We are currently the only gemological organization in the United States that is wholly independent of any trade group or organization, and focuses its efforts on establishing and maintaining high professional standards for the trade with regard to diamonds, colored gemstones, and pearls. We are a proactive organization that focuses on issues of importance to the public—and trade—and our membership has spearheaded consumer-oriented alerts on such serious situations as the telemarketing schemes of the 1980s. AGA members are all experienced gemologists, with highly respected credentials and many years experience.

Congress has declared that “unfair and deceptive acts or practices” shall not be allowed in U.S. interstate commerce, and it has empowered the FTC with authority to enforce that prohibition. Additionally, Congress authorized the FTC to adopt industry-wide trade regulation rules, and it has done so with respect to the jewelry industry with The Jewelry Guides. The Guides provide a roadmap for fair dealing by outlining when disclosures should be made to avoid unfair or deceptive trade practices as jewelry products are sold between wholesalers all the way down to retail consumers.

The current jewelry marketplace has changed considerably since The Guides underwent their last comprehensive review in 1996. Greater emphasis was placed on disclosure of treatments to diamonds and other gemstones to prevent deception and unfair dealing. Those revised guidelines have not worked as well as anticipated. Furthermore, as a result of the current loopholes present in the Guides pertaining to disclosure of treatments, there are now many more (and more extensive) treatments being used on many more gemstones, and many of these are being sold with no disclosure or inaccurate disclosure.

Current Gemstone Marketplace: A Triad Leading to Confusion and Deception

There are three general types of gemstones encountered in today's increasingly global marketplace. First is what we prefer to call "natural" gemstones, which we classify as having been created within the earth and not altered subsequently in *any* way, except for cutting and polishing. Second is what we refer to as "treated" gemstones, classified as having been created within the earth but subsequently altered by some treatment method to improve appearance, beyond cutting and polishing. Finally, there are "synthetic" gemstones, which are created not within the earth but in a factory or laboratory. Synthetic gemstones have essentially the same physical, chemical and optical properties of their natural counterparts, but typically sell for lower prices than earth-created gemstones. Of course, "imitation" gemstones are also manufactured to look like natural gemstones, but they have none of the physical, chemical and optical properties of natural stones.

This triad was not always the case. Prior to the last half of the 20th century, there were really only two categories of gemstones: *natural* and *synthetic*. Before the 1960s, use of treatments was the exception rather than the rule. The word "natural" was originally intended simply to separate "naturally occurring" stones—that is, those formed within the earth—from stones being created in laboratories/factories with the same physical/chemical properties of the naturally occurring stones. At that time, the term "natural" served a valuable purpose, its intent being to help protect the public from "synthetic" gems being misrepresented as "natural" gems.

But today there are essentially two types of "natural" gemstones, when defined as "created within the earth": *natural* (that is, as nature created them, with the exception of cutting and polishing); and *treated* (that is, the color and/or clarity have been improved in some way through human intervention). Man has used a variety of methods to enhance the beauty of gemstones, including heat, oil, dyeing, bleaching, coating, and filling. More recently, irradiation, lasering, and diffusion with chemicals have been added to the assortment of treatments routinely encountered by gemologists examining gemstones. Use of these treatments increases the supply of gemstones, and allows consumers in all income brackets to purchase jewelry to suit their taste and budget.

Treated "naturally occurring" gemstones, however, are less valuable than *natural* "naturally occurring" gemstones. Most consumers are unaware of the value differences because they don't even know there are two categories of "naturally occurring" – natural and treated. The word *natural* has itself become a problem. In light of the quantity of treated gemstones in the market, the word "natural" immediately preceding the name of a gemstone that has been treated is no longer a valid qualifier, but one that is misleading.

Take for example, corundum, the mineral called "ruby" when it is red and "sapphire" when it is blue or any of the many other colors in which it occurs. Red is also the rarest, so it is also the costliest. Throughout most of history, rubies and sapphires underwent very little treatment to enhance their appearance. But as demand for ruby and sapphire increased in the 1960s and 1970s, supplies were being exhausted. Anxious to meet this new demand, enterprising dealers discovered they could heat lesser quality corundum to improve its color and clarity. This new "treatment" went undetected for several years and quickly became routine.

Eventually, virtually all rubies and sapphires sold in jewelry stores worldwide were heat-treated, and seldom was that treatment disclosed to purchasers. Most jewelers were unaware of the new “heat treatment” and, therefore, they were not informing consumers that they were buying stones that they were different from those purchased by their parents and grandparents before them. Even the prices at which the treated material was initially sold did not raise questions because they were comparable to the prices of natural, untreated material. Eventually, however, prices dropped as more and more treated material entered the market and supply outpaced demand.

Once accepted within the trade, albeit, without disclosure, treatments were here to stay. Today there are numerous types of treatments being used on an ever-increasing number of gems. The issue is not that gems are treated—in fact, without the introduction of gemstone treatments, it is possible that only the wealthiest would be wearing lovely jewelry today—but the absence of disclosure that is the issue; *non-disclosure* has resulted in confusion related to what the term “natural” means today in the context of the description of a gemstone, and this has led to consumer deception and exploitation. These issues need to be addressed in the current revisions.

In the absence of explicit information with regard to treatments, it is reasonable for consumers to expect that the word “natural” when used in association with a specific gem or piece of jewelry, being considered for purchase, means a *natural* gemstone – that is, not altered or enhanced in any way by except for cutting and polishing.

All Gemstone Treatments Must Be Disclosed to Every Purchaser

While trade organizations began to take steps to remedy the disclosure issue in the 1990s, clear and forthright information pertaining to treatments—and the impact of specific treatments on beauty, durability, and value—is still not provided by most jewelers at any stage of transactions with customers. At one extreme, jewelers fail to provide *any* information on treatments. At the other extreme, some jewelers insist that gemstones have *always* been routinely treated, and that *all* gemstones are treated in some manner. This type of distorted information is not accurate and does not serve the interests of the public. To say that *all* gemstones are treated is as misleading as saying that *none* are.

Complicating matters further and adding to the confusion is that while most gems sold today are treated, and consumers are buying them unknowingly, there are also an increasing number of *natural* gems entering the market. Natural, untreated gems are still being mined, and natural gems also re-enter the market through estate dealers, auctions, and other sources.

Furthermore, natural gemstones (that is, those not treated in any way) are now receiving unprecedented publicity following major auctions at which they are reaching new record-setting prices, reinforcing the public’s perception that natural gemstones are rare and valuable. This, combined with the use of the word “natural” as currently permitted in the FTC guides, creates opportunities for deception and misrepresentation.

In today’s market—with so many stones now being “routinely” treated in some way—the FTC faces a new and daunting challenge: not only must the agency address ways to help ensure that consumers are informed about whether or not a stone was created within the earth rather than in a laboratory or factory, but now the FTC must do whatever possible to help ensure consumers are informed as to whether a

gemstone is a “naturally occurring gemstone” (that is, not “treated” in any way) or whether its appearance is the result of its having been “treated” after being unearthed.

The AGA has long believed that disclosure of *any* treatment to a gemstone should be the norm, not the exception. Disclosure of gemstone treatments must become an essential statement of fact, and although mandated by the current FTC Jewelry Guides. Section 23.22 (Disclosure of Treatments to Gemstones), it should no longer be “qualified” as it now exists.

It is unfair or deceptive to fail to disclose that a gemstone has been treated if:

- (a) the treatment is not permanent. The seller should disclose that the gemstone has been treated and that the treatment is or may not be permanent;
- (b) the treatment creates special care requirements for the gemstone. The seller should disclose that the gemstone has been treated and has special care requirements. It is also recommended that the seller disclose the special care requirements to the purchaser;
- (c) the treatment has a significant effect on the stone’s value. The seller should disclose that the gemstone has been treated.

Gemologists, bench jewelers, and many gemstone dealers can attest to the fact that *all* treated gems—regardless of the type of treatment—are covered by at least one of the sections above. Many are not permanent, but even in cases where they are, they usually need special care. Even “heating” alone can cause increased brittleness that will result in more damage in the course of normal wear. Finally, *all* treated gems in today’s market sell for less—often much less—than treated stones, no matter how minimal the treatment.

The AGA believes the time has come to revise the Jewelry Guides to mandate disclosure of *all* treatments to gemstones beyond cutting and polishing. The “shoulds” in Section 23.22 ought to be revised to “musts.” Sellers *must* disclose each and every treatment they know, or have reason to believe, has been applied to a gemstone offered for sale to another seller or retail customer.

We can appreciate the issues inherent in modifying the Guides in this direction. But the public desperately needs clarity, and the Guides need to ensure that the public is receiving the information necessary to make informed choices and to understand what they are buying.

Lead Glass-Filled Ruby: A Case Study in Misrepresentation and Deception

Although heat treatment of ruby and sapphire has become the norm over the past half century, a few years ago, our members began seeing a new ruby product at gem shows offered for a few dollars per carat. Most of these “rubies” were represented as being “treated by heat only.” It wasn’t long before we discovered this was not the case. Our members began receiving calls from bench jewelers who were finding that these “rubies” were not behaving like any ruby they’d ever handled, and that routine jewelry repair and manufacturing techniques were causing extensive and irreparable damage (for which they, the bench jewelers, suffered damage to reputation—and thus future business, as well as having been held financially responsible by retailers and/or consumers).

Gemological examination of the stones revealed unprecedented quantities of glass – a highly refractive *lead-glass* in particular – combined with some unknown quantity of corundum (the mineral known as ruby only when it occurs in a red color with good transparency, or “sapphire” when it is blue or any other color in which nature creates it), in short; a “blend” of two materials altogether different in terms of physical properties.

Subsequent research by AGA members, in association with several of the world’s leading gem-testing laboratories, revealed that the lead-glass became an integral part of the blended product and cannot be removed without destroying the entire “gem.” Furthermore, the properties associated with “ruby” are no longer the same since the properties associated with lead-glass are also present and inseparable. These are two critical differences between this product and treated rubies. [See Attachments 24-30]

Without the lead glass, there is no “ruby” in terms of color and transparency, but *with* the lead-glass, the physical properties are so altered that the resulting “ruby” lacks the characteristics that make “ruby” a ruby. The fusion of these two very different materials creates something that is neither ruby nor glass, but a new type of imitation that combines properties of both, each of which is inseparable from the other—in short, a new type of “composite” (an imitation created from two or more materials being joined together in some way, to imitate a rarer, and more costly gem). Composites can be formed from two or more parts of a genuine stone, or two or more parts of an imitation or synthetic, or from a combination of genuine and artificial.

This new product now being sold as “treated ruby,” at inflated prices, poses a serious threat to consumers that was unknown at the time of the last FTC review more than 10 years ago.

The AGA has numerous real-life examples—some of which are provided in documents submitted along with these comments—of the problems created as a result of selling this product as ruby when the most important physical characteristics associated with ruby—its toughness, hardness, and overall durability, ranking it next to diamond in terms of these characteristics—is not present in this new product. These composites are not only *less* durable, they are *very* fragile.

[See Attachments 1-14]

In addition, the lead-glass component has other adverse effects on the ability of anyone selling this product to be in compliance with current FTC guidelines related to a) identity of the stone; b) carat weight; c) quality; d) disclosure related to care requirements, and e) value.

The lead-glass products now in the market are being misrepresented specifically as to their “type,” “kind,” “quality,” “weight,” “durability,” and “value.”

- **Kind:** The lead-glass products are being misrepresented as to the “kind” of product; they are being represented as “treated ruby” when the altered material no longer has the properties of ruby. This lead-glass product is neither ruby nor glass, but a new type of imitation that combines properties of both glass and corundum, each of which is inseparable from the other.
 - They have been clearly identified by the two most highly respected gem-testing laboratories in the USA—the Gemological Institute of America (GIA) and American Gemological Laboratories (AGL) as products that are not genuine ruby. [See Attachment 30]
 - GIA identifies them as “*manufactured products*,” and AGL identifies them as “*composite ruby*.” [See Attachments 18-23 and 33]
 - Both labs include comments pertaining to presence of significant amounts of lead-glass, and the need for unusual care. The AGL laboratory states: “*the product has been heavily treated using a high refractive index lead-glass to fill fractures and cavities, vastly improving the apparent clarity and adding weight. The glass may be damaged by a variety of solvents.*” [See Attachment 22]
 - There are devastating consequences resulting from using traditional techniques on these lead-glass “rubies” at the bench—extreme and irreparable damage—a further indication that the product may look like ruby, but that it is a product that lacks the durability of ruby, a very important characteristic long associated with ruby.
- **Quality:** Because of the composition of the product, and the extensive amounts of lead-glass, no one can know the true quality of the product because it is impossible to conduct accurate color and clarity grading—the two most critical factors involved in determining the quality and value of any gemstone. Lead-glass products cannot be accurately graded for 3 primary reasons:
 - The high refractive index (RI) of the lead-glass conceals the fissures/fractures, making it impossible to determine how many there are, how deeply they penetrate into the stone, and thus, how great a risk they pose with regard to breakage in the course of normal wear.

What Is “RI” and How Does It Affect Quality Grading?

The refractive index of a stone relates to how the light moves through, and between, different media—in this case, ruby and glass. The greater the difference between the RI of each substance, the more easily one can see important internal characteristics; the closer the RI, the more difficult it is to see them. If the RI is essentially the same for both substances, one cannot distinguish where one ends and the other begins. This is why other types of glasses sometimes seen in ruby (usually silica glass) are different; they have lower RIs so one can actually see where the fracture is and properly grade the stone.

The RI of lead-glass is almost a perfect match to that of ruby. This means that as light moves through the stone, one cannot see where one substance ends and the other begins. This is why, in lead-glass products, one can't see the fractures, and thus can't evaluate the stone's clarity. It is virtually impossible to determine how deep or wide—how dangerous—any fractures or fissures might be. Even a single fracture can be extremely dangerous and severely affect the clarity rating, depending on where it is located and how far it penetrates into the stone, and thus its longevity and value.

Below one can see how the quantity of lead present affects the RI—the more lead, the higher the RI. It is clear that the percentage of lead present in the glass used on these rubies is very high.

RI's For Various Glasses:

Glass, Fused Silica	RI 1.459□
Glass, Pyrex	RI 1.474□□
Glass, Flint, 29% lead	RI 1.569□
Glass, Flint, 55% lead	RI 1.669□
Glass, Flint, 71% lead	RI 1.805□

The RI of corundum (ruby/sapphire) is 1.76-1.77; from the list above one can see that in order to have the same RI, the lead content in the glass must be in the range of 68-69%. The amount of lead in the glass also accounts for it weighing so much more than ruby, or other glasses used in “treated” material.

- The filler cannot be removed. Another important distinction between lead-glass fillers and other fillers used routinely to treat ruby/sapphire to improve appearance—and which can rightly be sold as “treated ruby”—is seen in whether or not the filler can be removed for any reason. Other fillers, including common silica glass, oil, or epoxy resins, can be removed in cases where this might be necessary to determine whether or not a coloring agent has been added to the filler, or to ascertain how much filler—how heavily filled—the stone is (as with epoxy resins used in emerald). In the case of the lead-glass filler used in these stones, the lead-glass used to create the product cannot be removed from the stone without destroying the stone's structural cohesiveness; attempts to remove the lead-glass result in the destruction of the stone (it crumbles or falls apart).
- The Lead-Glass Filler is Not Colorless. The lead-glass is usually tinted. When analyzed, the lead-glass used has been tinted in order to improve the color seen in the finished product, so one cannot know what the actual color was.

- **Weight:** Ruby weight is indeterminable with these products. We know that lead-glass weighs much more than ruby, but since the lead-glass cannot be removed, and its high RI makes it impossible without expensive, sophisticated instrumentation to ascertain exactly how much glass versus ruby is in a particular stone, it is not possible to accurately determine the weight of the ruby component. Therefore, one cannot calculate the actual ruby weight. The only thing certain about the ruby weight is that it is less than the weight indicated for the entire stone, and in many cases, much less.

This has been noted by respected laboratories around the world, and is indicated on the AGL reports on lead-glass products. One can only estimate the percentage of ruby versus glass in the stone based on the presence of characteristics found only in glass (bubbles, blue-flash, surface crazing), or only in ruby, but a precise weight cannot be known.

- **Durability:** Lead-glass products lack the durability of ruby:
 - Lead-glass is much softer than ruby (and other glasses used in treatments) and wears more quickly than ruby.
 - Lead-glass is much more vulnerable to scratching, chipping and breaking with normal wear than ruby.
 - Lead-glass is vulnerable to acid-etching by many commonly encountered substances, including lemon juice.
 - Lead-glass composites are quickly and irreparably damaged by techniques that have been routinely used for centuries on ruby or treated ruby; these techniques include the use of heat, chemicals, and acids used routinely in the course of making or repairing jewelry containing such products.
 - The “joins”—the planes—between the lead-glass and ruby also weaken the overall structure of the product, making them more susceptible to damage from an accidental knock or blow.
- **Value:** Lead-glass rubies are being sold to consumers for hundreds to thousands of dollars per carat, when the cost should be 5-10 times less than what they are paying. Within the trade, lead-glass rubies under 5 carats each originally entered the market at prices between \$1.00-5.00 per carat. Today, trade acceptance of these as “just another type of treated ruby” has resulted in sharply higher prices for the same sizes/qualities, now costing \$10.00-20.00 per carat. Jewelry containing these stones is being sold by some vendors to the trade at highly inflated prices, which are then even more highly inflated when sold to consumers.
 - Retailers purchasing jewelry pieces containing these stones are told they are rubies and are themselves paying very inflated prices for the pieces they buy, and then passing on their mistake to their customers at even higher prices. While they are easy to distinguish from rubies or treated rubies, most jewelry retailers have not taken the time to learn what the distinguishing characteristics are, but describe and price what they sell based on what they are being told by vendors, who often are doing the same thing with regard to their own sources.
 - The unscrupulous at all market levels are misrepresenting them knowingly, and selling them at huge profits.

It is for the foregoing reasons that the AGA believes it is essential that the FTC understand how these lead glass-filled ruby products differ from other products in the market that are accurately described as “treated ruby” (or sapphire, or other gemstone name), and how selling them as “ruby” or “treated ruby” violates current FTC guides.

It should be noted that while we discuss our research and experiences related specifically to ruby, we are also now seeing blue, green and yellow sapphires that are the same type of product, with the same issues for public and trade alike. These are also being treated with a high RI glass, resulting in different physical characteristics, a much lower value, and the need for special care to avoid breakage or severe and irreparable damage. [See Attachments 32-34]

The AGA cannot ignore what occurred with rubies and sapphires, when “treated” material first entered the market, and the potential for such a scenario to occur again, unless the current FTC Jewelry Guides are revised to help prevent it. There is already growing concern about just this sort of thing occurring with another gemstone family—the spinel family. The similarities are clear: demand for this beautiful, rare, natural gemstone is increasing dramatically, supply is decreasing, and prices are strengthening. Spinel is highly sought after not only because it is beautiful and rare, but also because connoisseurs are looking for *natural and untreated* gems, and the spinel family is one of the few gemstone families known to be “natural” and “untreated.” Until now, that is.

As we saw with sapphires and rubies, treatments to improve the quality of less desirable spinels are beginning to appear in order to meet rapidly increasing demand, and to take advantage of the rising demand in order to sell “treated” spinels, without disclosure, at much higher prices. But the difference between now and the 1960s is that we know about treated material entering the market; we know that treated and untreated spinels are not “the same thing,” and we know how to separate one from the other. Natural spinel is more rare and more expensive than treated spinel. However, if the FTC Jewelry Guides permit treated *and* untreated material to be sold as *natural*, it will lead again to confusion, misrepresentation, and exploitation, just as it did in the 1960s and 1970s. [See Attachment 31]

After considering all of the information provided above, including the historical and current market realities, the AGA strongly recommends that the FTC restrict the use of the qualifier “natural” so that it can precede the word “ruby,” “sapphire,” “emerald,” “topaz,” “spinel,” or the name of any other precious or semi-precious stone, to *describe only stones formed within the earth and which have not been artificially altered in any way.*

Furthermore, in order to ensure clarity and eliminate confusion, the AGA strongly recommends that the FTC revise the guides to require use of the word “treated,” or other similar word, to immediately precede the word “ruby,” “sapphire,” “emerald,” “topaz,” “spinel” or the name of any other stone that formed within the earth *and subsequently was altered to improve appearance, in any way, apart from cutting and polishing.*

A Few Comments About Pearls

The Commission has questioned whether it should amend the Guides to recommend any specific disclosures relating to freshwater pearls, and whether the Guides should advise the disclosure of treatments to pearl products, such as dyeing techniques that artificially color the final product.

The AGA believes a prudent course when using the term “cultured” to describe various types of pearls is to follow recommendations of the The World Jewellery Confederation (CIBJO). For CIBJO, the term “cultured” refers not just to the finished product but, more importantly, to the human intervention responsible for facilitating the growth of the pearl. Cultured pearls are, therefore, products that form as a direct result of the human intervention. The term “cultured” should precede any pearl product that is not either *natural* or an *imitation*. Use of the term “cultured” is appropriate for both seawater and freshwater pearl products whose formation and growth has been initiated and/or controlled by human intervention.

The term “cultured freshwater pearl” should be used to describe any freshwater pearl product that is not either *natural* or *imitation* in origin. Section 23.20 of the Jewelry Guides seems to imply that freshwater pearls in shapes other than round, or that are not bead nucleated, may not require disclosure as “cultured.” This was once a position advocated by the pearl industry. However, today this position is considered arcane.

With respect to disclosure of treatments to pearls, the AGA acknowledges that pearls, in general, and cultured pearls specifically, are routinely modified for use in the marketplace. These modifications have been commonly referred to as “processing,” and can include drilling, polishing, buffing, peeling and cleaning. The foregoing practices are used extensively enough to be considered common practices and, therefore, no specific disclosure is necessary.

However, more recent pearl treatments, such as bleaching, coating, cutting, dyeing, tinting, filling, heating, irradiation, oiling, waxing, and working (*e.g.*, removing blemishes) are quite another matter. These practices are less traditional and, therefore, should be disclosed in every transaction because they can have a significant influence on the apparent quality, and thus value, of the pearl.

Regarding permanence of these more recent pearl treatments, little is known about the long-term stability of color treatments in pearls as there are no major scientific studies published on the issue. However, dyeing, coating and waxing are not considered permanent and, therefore, should always be disclosed. These treatments are all assumed to require special care instructions.

The extent to which many pearls are modified through treatments is only recently becoming better understood. However, it is widely observed that there is a difference in value between a treated and untreated pearl. An untreated pearl is considered rarer than its treated counterpart. The relationship of a product’s rarity to its value is understood to directly influence value in virtually all other gem related categories. There is no reason to believe that pearl products would be different.

The AGA believes it is appropriate to require disclosure of treatments, even those that are permanent, at the time of sale. Such disclosure allows consumers to make informed choices when considering the purchase of pearls. Additionally, such disclosure protects the natural pearl market, which has experienced diminished demand as cultured and treated pearls have altered consumer expectations about what pearls should look like to an extent that nature can no longer compete. We believe complete disclosure of pearl treatments, except drilling, polishing, buffing, peeling and cleaning, will ultimately lead to higher consumer confidence in pearl products.

Conclusion

The AGA is committed to working with the FTC to develop industry guidelines that will serve all stakeholders. Consumers want to purchase jewelry to suit all socioeconomic levels. Vendors want to meet this demand with traditional gemstone products alongside treated gemstone products. Consumers can only make informed choices about such purchases if they know the truth about the products under consideration. Are the gemstones natural? Have they been treated in ways that affect their stability or value? Are there significant gaps in consumer understanding of these questions? As experienced gemologists, we know the answer to that final question is an unqualified “Yes!” The FTC can serve consumers by mandating gemstone treatment disclosure at all levels of trade, and use its public relations tools to educate consumers so they can make more informed and intelligent buying decisions.

On Behalf of the Accredited Gemologists Association

Respectfully Submitted by the AGA’s “FTC Review Committee”

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