

Unstable *Surface-Treated* Colored Diamonds Put Jewelers At Risk But Simple Tool Provides Quick ‘n Easy Method to Spot Them!

A Special Report from the Accredited Gemologists Association

Fancy-color diamonds are the rage, in every color. Natural-color yellow and brown diamonds are in high demand, and for the select few fortunate enough to afford them, demand is growing for rare colors such as pink and blue. Such stones may be too costly for most people in larger sizes, but the market is hot for natural-color melee, in black, yellow, and even rare shades of pink and blue, and the market is strong for colorful pavé diamond creations debuting in top designer lines.

Colored diamonds are also creating lots of buzz in the broader market arena, thanks to technology and its application to the gem world. Today there are a variety of treatment techniques that can transform off-color diamonds into a dazzling array of desirable “fancy” colors, at a fraction of the cost of their natural counterparts. But “treated color” diamonds *are not all the same*. Not knowing how diamonds you are buying and selling have been treated, and whether or not the resulting color is permanent, can have costly consequences in terms of disclosure laws and, more importantly, customer relationships.

Not all treatments used to produce colored-diamonds yield comparable results

When buying treated-color diamonds, retailers need to know what type of treatment has been used. The dilemma for many jewelers is that they may ask vendors what treatment was used but the vendor may not know. Even worse, some vendors have been misled into believing that stones they are buying and selling have been treated by a method that produces permanent results when this is not the case, and misleading terms have caused confusion as well. Treated-color diamonds reportedly treated by an *infusion* technique—the very term suggesting that the resulting color penetrates into the stones—were recently examined at several gem testing labs. John Koivula, Chief Gemologist at GIA, and Chris Smith, Vice President of AGL, explained that these “infusion-treated” diamonds were off-color stones to which a surface coating had been applied, and only on the pavilion. As they explained, this technique can be used to produce any color you want, even custom colors, but it is not permanent.

Irradiation techniques, HPHT annealing, and multi-step processes combining radiation with HPHT and other steps (such as *Imperial Red*® diamonds from Lucent Diamonds) all produce permanent results. Numerous colors can be produced by these methods. But stones produced by these methods, while much more affordable than their natural counterparts, can still be quite costly, depending on the process used, the quality of stones necessary to withstand the process, and the particular color that has been created.

Diamonds treated by techniques that provide temporary results are much less expensive. They also pose serious risks to jewelers. According to members of the Accredited Gemologists Association (AGA) at their annual conference in Vegas, there is particular concern about colored diamonds in which the color results from a surface coating only. “The number of such stones in the market is increasing, in virtually every color—including shades of yellow, pink, and blue that look just like natural stones—and in every shape and size, including melee,” reported Richard Drucker, Publisher

of The Guide, and currently Vice President of the AGA. “And given the range in sizes and colors, it’s a potential nightmare for jewelers, designers and manufacturers unless there is a way to quickly and easily spot them,” warned author and consumer advocate Antoinette Matlins.

Treated-color diamonds, especially in melee sizes, are of particular concern. They have colors that look very natural and, unlike colored diamonds in larger sizes which usually have laboratory reports confirming whether color is natural or the result of HPHT, radiation, or some combination of techniques, this is rarely the case with melee sizes. There are numerous tests a gemologist can perform in a laboratory, such as boiling in sulphuric acid (which will remove the coating quickly and reveal the true color), but this is not practical in a retail environment, and other tests for detecting coatings require gemological training and a well-equipped lab. Since no one can afford to send every small diamond to a lab, the issue becomes clear: how can jewelers protect themselves from inadvertently buying and selling surface-coated diamonds?

“We decided to put the carbide scribe to the test,” explained Matlins, “because research by several gem testing laboratories revealed that the coating on surface-coated stones could be scratched by a carbide scribe.” By taking a carbide scribe – a simple tool that looks like a pen – and dragging its carbide point across one of the facets, the point will scratch through the coating. It won’t scratch the diamond, just the coating, which can be seen immediately with the loupe.

To test this observation, each participant at the conference was given a high quality carbide scribe to use on the diamonds they were examining. They scratched crown facets and pavilion facets. In the case of the fancy-colored diamonds examined, in 100% of cases where the diamond had been surface coated, the carbide scribe quickly and easily revealed it. Facets on the crown as well as the pavilion were tested and revealed that all of the surface-coated colored diamonds were coated on the pavilion only—no “scratches” appeared on the crown facets, but “scratches” *did* appear on pavilion facets. The tell-tale scratch was immediately visible with the loupe.

Tinted off-color diamonds can also be coated to produce “colorless diamonds”

Smith and Koivula also pointed out that coating techniques are not new and were used over 50 years ago to make diamonds appear *whiter*; the technique could improve color by 6 – 7 grades. These stones are referred to as *painted* diamonds, and they still pop up in the market, in every size and shape. They will not have a laboratory report from GIA or other respected labs, because the labs won’t issue reports on such stones, but they can have a counterfeit report. Painted diamonds may have a coating over the entire stone, or just the pavilion, or simply around the girdle. The AGA did not have any of these stones to test, but gemologists present who had encountered such stones confirmed that the carbide scribe also scratched the surface coatings used to produce them. They pointed out that the coatings were often applied to the entire diamond, but could also be on just the pavilion, or crown or the coating might have been applied only to the girdle area.

Using a carbide scribe on all diamonds, on a crown facet as well as a pavilion facet, is not difficult or time-consuming. If the scribe scratches the surface of the diamond, it is definitely coated. (Note: In the case of colorless diamonds, after checking facets on the crown and pavilion, if no evidence of coating is seen, then examine the girdle area with magnification—if only the girdle is coated, you will see brush strokes around the girdle, from the actual brush used to paint the girdle. However, you will *not* see brush strokes around the girdle, or anywhere else on the stone, if the coating has

been applied to the entire stone or across the entire pavilion or crown because a different technique is used to apply coatings to larger areas. Be sure to test with the scribe first). Most colorless “painted” diamonds have a surface coating that has been applied to the entire stone or to the pavilion or crown, and the carbide scribe is ideal for detecting them as well as surface-coated fancy-color diamonds.

In short, a carbide scribe should be used on any diamond that jewelers are buying and selling without laboratory documentation.

How to Use the Carbide Scribe

Participants, including retailers with no gemological training, found that using a carbide scribe was quick and easy, and something anyone could do. Here’s how to do it:

1. You must make sure you are testing a diamond and not a diamond imitation such as CZ.
2. The scribe must be a carbide scribe.* There are several different types of “scribe” for marking various materials, such as stainless steel scribes, but only a carbide scribe will scratch through the surface coatings being applied to diamonds.
3. Insert carbide point into the scribe (instructions are included). Be careful when handling the scribe and avoid dropping it; carbide is very hard, but it is also brittle and the point can break if you drop it and it lands point-first on a hard surface.
4. Hold the diamond, or piece of jewelry, in a way to ensure a firm grip and then drag the carbide point across a facet with reasonable pressure. Start with a facet on the pavilion.
5. Examine the facet. Does it appear to have a scratch where you just dragged the scribe across the surface? If so, the stone is coated.
6. If there was no scratch, repeat the process on a table facet. If there is a scratch, the stone is coated.
7. Where colored diamonds are concerned, if there is no scratch on the pavilion or table, it is not surface-coated.
8. If testing a colorless diamond, if there are no scratches on pavilion or table, examine the girdle area with the microscope to search for brush strokes. If there are not brush strokes, the diamond is not coated.

CAUTION: Do not use a carbide scribe on any gemstone except diamond. The carbide point is extremely hard and will scratch all other gemstones.

* Professional quality carbide scribes are available from the *Accredited Gemologists Association* at www.accreditedgemologists.org or call AGA headquarters at 619 501-5444. The cost is \$20 for a high quality scribe with interchangeable points. Includes 2 carbide points—one “fine” and one “standard”—which are easily stored within the scribe. Replacement points are also available.