



# TYPE II Criminals: Turning ‘50 Shades of Brown’ Into ‘Virgin Whites’

July 10, 14 by Chaim Even-Zohar



The greatest menace in the diamond industry – today and tomorrow – comes from the nasty breed of people defined as Type II Criminals, who abuse gem-quality synthetic or natural diamonds to defraud. In earlier issues, we mentioned “the hidden stockpile” of Type IIa brown diamonds above 1.8 carats that De Beers has removed from its mining production and simply does not sell. Other mining companies, however, sell (and often auction) these Type IIa brown stones, and it has subsequently surfaced that industry players have become more sophisticated as they try to invent ways to avoid HPHT treatment detection.

To be precise in my definition of Type II Criminals I am conveniently combining two distinct– albeit equally reprehensible – activities. Basically there are those who fail to disclose synthetics and those who fail to disclose HPHT processed brown IIa’s. Both activities expose the product to consumer confidence risks and must be combated. However, these two products have very different and distinct issues surrounding their sourcing, disclosure and distribution. The two “products” are not the same, do not pose the same threat to the industry, do not affect the same segment of the markets and represent two different types of disclosure issues (not one).

This article mainly addresses one of these two activities: the “masking”.

## **The Practice of ‘Masking’**

Recently, the GIA detected a few instances of what can only be described as major fraud, or what is referred to as the practice of “masking.” In short: one takes a lower value large Type IIa brown stone, and through a detectable HPHT treatment, the stone becomes a perfect D color with F clarity worth hundreds of thousands or even millions of dollars – provided, of course, that the buyer never finds out that the diamond started out as a Type IIa Brown. [Someone familiar with the production says that even without the HPHT treatment some of the larger stones will cost hundreds of thousands of dollars. Even in the mid-range of product, raw material costs will be in the tens of thousands of dollars.]

How does one prevent the consumer from finding out about the stone’s original color? The answer, found by unscrupulous criminal elements, is masking. After the brown stone has been transformed into a perfect white diamond, it is subsequently subjected to irradiation – slightly altering the diamond’s crystal lattice and knocking some carbon atoms out of place – for the sole purpose of masking (hiding) the HPHT treatment. In other words: the irradiation itself isn’t done to improve the stone; it is only done to make it virtually impossible for a laboratory to conclude that the stone started out in life as a cheap Type IIa brown!

Only a few highly experienced labs (GIA, HRD, De Beers Research Center, and some others) have the ability to discover “masking.”

Let’s be very specific about this. So-called multi-process treatment involving consecutive applications of HPHT annealing, followed by electron irradiation, and possibly some further conventional annealing at atmospheric pressures has been common in the world of color enhancement. Each phase has a specific objective to reach the desired color or non-color. But masking only has a criminal purpose: it doesn’t improve the color or beauty of the stone. On the contrary, the only purpose of masking is to try to hide evidence of the previous treatment. This is fraudulent, and one senior GIA executive, in an off-the-record briefing, expressed the opinion that when masking is discovered, it is one of the rare instances when a lab ought to call the police. An undisclosed converted Type IIa brown stone may rightly be viewed as a multi-million-dollar fraud.

## **Treatments to Escape Detection of Treatments...**

The first detection of undisclosed production of HPHT color-enhanced diamonds for all diamonds in general dates back to 1996. The first formal announcement of HPHT treatment of gem diamonds, a process discovered by General Electric (GE), came in 1999 from Lazare Kaplan International (LKI). Together with GE, LKI had ambitious plans for its enhancement program, endeavoring to complete the natural geological processes and “allow the diamond to reach its colorless potential.” The industry thought otherwise, though, and gemologists and scientists worked overtime to devise ways to “differentiate” between natural diamonds and HPHT-enhanced diamonds. Undoubtedly, the greatest “prize” in color enhancement is the Type IIa brown diamond. De Beers and its contracted producers are still so scared of what the trade – i.e., the company’s sightholding clients – would do with these diamonds that it decided to stockpile rather than sell them.

Gradually, however, De Beers moved from controlling some 80 percent of the market to merely 35 percent, and it is – to the best of my knowledge – the

only producer to withhold the Type II Browns from the market. Occasionally, this policy is internally reviewed. About a year ago, in a discussion at the DTC Executive Committee, there were divided views. Some felt that there was no reason anymore for continuing the ban on sales of these goods.

The De Beers share of production of Type IIa brown diamonds has dwindled. Its previous main source (South Africa's Premier Mine; now Cullinan) has been sold to Petra Diamonds. Another top source for large (20 carats, 30 carats, and larger) Type IIa brown stones is the Letšeng mine in Lesotho mine, now owned by Gem Diamonds. By not participating in the market, De Beers is actually enhancing the income of its competitors. There is less competition.

A recent joint study by Russian, U.S. and German scientists says it all: "HPHT treatment of light brown Type IIa diamonds is of special importance in the business. These diamonds are the starting material for production of colorless gems of high color grades. The proportion of the colorless type IIa stones in the market steadily increases both in size and in color grade. Whereas it was almost impossible to encounter a perfect 15-carat HPHT-treated diamond in 2003, now it is not the case. Modern HPHT apparatus allows to process diamonds of any reasonable size resulting in polished gems of highest quality the weight of which may exceed 30 carats." 1

The GIA is seeing an increasing volume of Type IIa colorless diamonds in the 3- to 20-carat range, and most of these stones were submitted without proper disclosure. The head of the GIA laboratories, Tom Moses, confirms this trend. No one purchasing a large Type IIa natural diamond with a high color grade can have any confidence about the natural color origin of the stone. Masking will not be detected by most of the labs. Moreover, some irradiation may also occur in natural stones without having undergone any treatment.

In respect to undisclosed Type IIa brown treated stones, researchers found that undisclosed goods had already entered the market before the HPHT treatment became public knowledge. The sophistication of unscrupulous elements in our business and their reliance on masking has brought us back to square one. Says scientist D. Fisher: "Today, the virginity of almost all Type IIa diamonds has to be carefully tested with reliable means of identification of HPHT treatment. Without such testing no one can be confident about the natural origins of color of a type IIa diamond, if it is bought from third parties." 2

The challenge is how to detect stones maliciously treated to hide previous treatments.

### **More than 10% of Type IIa's are Treated**

Diamantaires instinctively know that virtually all of the large important multi-million-dollar stones are Type II. Basically, what differentiates between Type I and Type II is the content levels of nitrogen and boron, the major impurities that determine many of the properties of a diamond. Type II diamonds are those containing no measurable amount of nitrogen. There is a further division between Type IIa and Type IIb diamonds, and what makes Type IIa so special is that it does not contain boron, making it impurity-free.

Of the world's natural diamond output, 98 percent are Type I (and 90 percent of these have high-nitrogen content). There are very few truly pure diamonds in nature. Type IIa diamonds amount to less than 2 percent of all recovered

diamonds so far – though the frequency of their occurrence increases with size.

This 2% figure refers to volume, not to value. In that respect it is misleading. By value it is significantly more and diamond markets should be measured by value not units. [In the past Australia may have been about the largest diamond producer, while its output, then at \$8 per carat, made it an extremely low value mine. The same can be said about the DRC.] What is the value of Type II diamonds? Honestly, I wouldn't know. Might be anywhere between 5%-10% by value. What we do know is that all the following are Type IIa diamonds: the Golden Jubilee stone (545.7 carats); Cullinan I (530.2 carats); Cullinan II (317.4 carats); Centenary (273.8 carats); and the De Beers Millennium Star (203 carats) and a host of other famous Fancy Blue and Fancy Pink which puts bidders at Sotheby's and Christie's into a frenzy. Though these big stones are foremost in one's mind, I also recognize that the majority of HPHT-treated Type IIa diamonds that get color grades from D to G and clarity grades from IF to VVS are less than 2 carats in size (in the rough). As De Beers only withholds diamonds larger than 1.8 carat from the market, the volume of its stock cannot be so high; but its value is nevertheless potentially enormous, depending on how these goods will eventually be sold. Since the recognition of HPHT treatment is most difficult for Type IIa diamonds, and only Type IIa diamond treatment can result in high colors, these diamonds are most desirable for treatment. Experts estimate that "at present [i.e. 2013] 10% of all cut high color high clarity type II-a diamonds are HPHT treated." Of these, 80 percent are converted into colorless; about 10 percent acquire pink; and the rest becomes light yellow.

Though generalizations need to be avoided, it is nevertheless a fact that many labs cannot detect HPHT – so we don't really know how many of these stones are on the market, unwittingly, gem labs have essentially created a risk free operating environment for repeated and even proven offenders. When the lab fails to discover, the falsely marketed HPHT-enhanced stones have become "legitimate" as un-treated. One rates the lab mostly by the "discount" or "premiums" of the certificates, which is related to the "flexibility" in their grading. Has anyone ever checked the technical capabilities of different labs? This has never become an issue as, in the end, the labs have by and large defined their real constituency as the "trade" not the "end consumers." [Incidentally, the surest guarantee that a stone has not been HPHT'ed is if there is a presence of fluorescence. I have always been puzzled why fluorescent stones trade at a discount; might it be that they are less valuable because they cannot be HPHT'ed?]

### **Reviewing the De Beers Position**

Either by design or as an unplanned spill-over effect, by keeping its stock of Type IIa Browns off the market, De Beers has not allowed the market for these goods to grow, i.e., as the volume of these diamonds was so small and intermittent, no one invested in marketing them or preparing the customers for the treated stones. As such, in a way, De Beers has hurt the broader market as it has been easier to sell such stones illegitimately. This is kind of like the current dilemma with synthetics, but of course that the latter's production will only grow

.Previously, Diamond Intelligence Briefs reported that De Beers hasn't sold its Type IIa brown diamonds for decades – even though we know about an

exception with a southern African company in which a “brown diamonds experiment” was conducted, which involved 12 large stones; it was not successful. We also know that, at some time, discussions were held with Lazare Kaplan International, which has a color-enhanced brand and would clearly sell the polished with appropriate disclosure – but no sale materialized. The official rationale for withholding the goods from the late 1990s was to protect consumer confidence in natural diamonds. The producers agreed to this policy. However, it was not just a blanket prohibition forever but, rather, dependent on the development of detection equipment. A person familiar with the agreements told DIB that it had been agreed that as soon as future market developments - including technological developments - reduce the risk to consumer confidence, then the large Type IIa brown diamonds could be sold normally through the DTC’s selling mechanism.

Today, gem labs can detect the treatments, and some of the labs are even capable of detecting the masking that would hide the HPHT treatments. As large Type IIa stones would be offered to GIA, HRD or other prestigious labs in any event, detection is assured. The occasional crooks may still get away with cheating – but that’s inevitable in any event.

Today, the only ones that benefit from De Beers withholding these goods from the market are all the non-De Beers producers, which face less competition this way. Let there be no misunderstanding: large treated and fully disclosed Type IIa colorless goods remain a problematic item to sell to consumers. In that respect, demand is limited. Thus, De Beers (which would produce fewer Type IIa Browns as a percentage of overall production than some other producers) is really favoring the competition. As one Botswana official said to DIB: “We have mined the goods anyway; we have incurred the costs; so why shouldn’t we be getting the relevant income?” The formal reason we had a few decades ago – lack of detection equipment – was true then, but it isn’t true today.

### **It’s a Matter of ‘Image’**

When making inquiries about the sale of Type IIa brown diamonds that never took place a few years ago, the real “obstacle” to selling these goods emerged. The sales price offered for these large goods was at a small discount to the selling price of the resultant HPHT-treated rough. Though there are, indeed, some “50 shades of brown,” to paraphrase a popular erotic book, only a few of these shades would have value when sold without treatment. The money comes from the treatment. It’s just that simple.

And that’s the true dilemma: can De Beers, Botswana, Namibia, Canada and other producer partners collect a “treatment premium” on the sale of natural diamonds? Isn’t that tantamount to De Beers acknowledging that it “accepts” treatment for their natural output? These are interesting questions that need to be resolved within the upper echelons of De Beers itself.

There are ways around it. De Beers doesn’t need to set a selling price in the same manner as DTC boxes are priced. As the withholding mainly impacts larger stones – of “special” or “exceptional” sizes – the company might easily divert these goods to its auction platforms and through the Okavango Diamond Company’s selling mechanism. In this manner, the selling price would be fully set by the market.

The vast majority of Type IIa brown large goods is out there in the market. No consumer confidence is strengthened or weakened by De Beers withholding

some of this material. The rationale for not selling these diamonds has fallen away. The De Beers sightholders who want the Type IIa brown materials will find them anyway – and, hopefully, will sell the polished with the appropriately required disclosures. So why shouldn't these clients get these goods from their own trusted supplier? Doesn't the supplier trust its clients?

We put several of these questions to De Beers. – DTC spokesman David Johnson kindly confirms "that we don't have any comment to make on this." We didn't expect it would. At this stage, this should be an internal De Beers discussion followed by a dialogue with its producer partners. We hope this will happen.

Inga A. Dobrinets, Victor G. Vins, Alexander M. Zaitsev, "HPHT-Treated Diamonds: Diamonds Forever", Springer Publishers, Heidelberg, 2013, page 3. [DIB relied heavily on this splendid text.]

Dr. D. Fisher, "Brown Diamonds and HPHT Treatment," 9th International Kimberlite Conference, Extended Abstract No. 9IKC-A-00405, August 2008, Frankfurt, Germany.