

Speckin Forensics, LLC.

2601 Coolidge Road, Suite 202
East Lansing, Michigan 48823
517-349-3528 • FAX 517-349-5538

110 E. Boulevard, Suite 1700
Fort Lauderdale, Florida 33301
954-763-6134 • FAX 954-688-4941

THE DETECTION OF MASTIC ON PLASTIC

Erich J. Speckin

The detection of mastic on many different surfaces is usually not a difficult task. Most of the time when some residue of the mastic is left, with the use of ultra violet or infrared luminescence, the mastic will be made clearly visible. However, when the mastic has been chemically washed and no residue is present, the detection of a previous sticker becomes more difficult. A laser can aid in this detection.

Key words: Laser, mastic, infrared, ultra-violet, PVC, plastic.

In 1979 when lasers were first introduced, my partner and father, Leonard Speckin, was involved in a case where a coincidental finding was noted. A vinyl notebook was examined using a laser and the luminescent image of a price sticker was noticed on the inside cover. However, no residue of mastic was apparent. The image under the laser light was so clear that the handwritten amount was visible. This was not important to the case at hand but was filed away in my father's mental notations only to be used fifteen years later.

Our firm was contacted by an attorney to determine if a warning sticker had been removed from a product or never placed on it. A known type of the same product was obtained to get a reaction to the mastic at a known wavelength to compare to the questioned product. Ultra-violet light disclosed strong fluorescence. It was also detectable using infrared luminescence. However, when the questioned product was examined under the same light sources, no residue from the mastic could be detected. A short difference was noted in the area of the product that should have contained the mastic, as opposed to the surrounding areas. It was then brought to my attention that before a conclusion is drawn that a sticker had never been placed on the product, it must be examined by using laser illumination. An argon laser was used at 514nm and 3 watts. The known showed a reaction to the laser at this wavelength.

When the questioned was viewed under the same wavelength, the mastic was visible. It was so clear that the size could be measured with calipers and matched exactly to the known sticker, as well as the radiused corners. This is probably because the ultra-violet will detect the mastic and the laser detects the interaction between the mastic and plastic that couldn't be removed even when the mastic had been physically removed and the surface had been chemically washed.

Whenever a question arises whether a sticker has ever been on a surface, especially plastic or PVC, it should be examined with the aid of a laser before a conclusion is rendered as to the absence of a sticker.