



UNW1980x Anti-Counterfeit taggant and detector

Introduction

The taggant UNW1980x is a key component for forming a secure solution for companies who are interested in deterring counterfeiting and/or diversion of their products. The taggant is made from non-organic material and is essentially indestructible. The taggant can withstand very high temperatures and will not deteriorate under extreme environmental conditions such as extreme temperatures, UV exposure and high humidity.

Description

The taggant uses a non-organic material that has very specific characteristics. These characteristics can be interrogated via the use of a custom designed detection system (VI1170 see the next section) that has been specifically programmed to search for the required signal. Due to the extreme robust nature of this taggant the user may mix the taggant with a multitude of materials including UV curable inks, or almost any plastic. The characteristics of the taggant are unaffected by exposure to Ultraviolet light and/or humidity and extreme temperatures. The taggant crystal structure can be manufactured in sizes typically < 10um. When added to any electronic components it can easily go through a reflow oven with no changes in characteristics.

Detector system VI1170

Since the taggant will be embedded into a wide variety of product it is necessary to have a means for detecting the presence of the taggant and thus the authenticity of the product. The taggant has a specific and repeatable response to a given stimuli. That specific characteristic can be detected by the use of the VI1170 hand held inspection device shown in Figure 1 below. The VI1170 has a built in stimulus source and detection system that will search for the presence of the taggant. The VI1170 is an ergonomic design constructed of an anodized aluminum housing and operates on three (AAA) batteries and will provide 1000 scans on a new set of batteries. The VI1170 has a single button that is used to commence the detection process. If the taggant is detected by the VI1170 it is indicated by an audible tone and /or a vibration of the device. Upon release of the trigger the unit automatically goes into an extremely low power mode to maximize the battery life.



Figure 1

Forensic Analysis

A customization of the taggant crystals morphology can be provided for an extremely high level of forensic analysis. The customized morphology may be used as evidence to prove beyond any reasonable doubt the authenticity of the product. Please contact ZBA directly for any specific inquires

Applications

- 1) Injection mold into plastic (pre-loaded pellets can be supplied).
- 2) Bubble jet printed
- 3) Mixed into high volume printing application such as;
 - a. Silkscreen inks
 - b. Flexo
 - c. UV curable inks
 - d. Gravure
 - e. Varnish
 - f. Holograms
- 4) Mixed into ceramic and can be fired during the normal production process
- 5) Mixed into paints and dyes
- 6) Easily mixed with adhesives.



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Typical Properties of the taggant

Crystal powder	5-10	microns
Color	White	
Operating temperature	-60 to 265	C
Storage Temperature	-60 to 300	C
Non-destructive detection	YES	
Field detectable	YES	
Detectable to naked eye	NO*	

Can be seen visually with special equipment.