



Biodegradability & Compostability Statement

A biodegradable product can be decomposed by microorganisms and other naturally occurring biochemical reactions. These products can be solids biodegrading into the soil (also referred to as compostable), or liquids biodegrading into water.

The biodegradability of printing ink depends on the ingredients used in its production. The two main categories of inks are petroleum-based and vegetable oil-based. UV inks and coating produced by Paragon Inks are based on petroleum raw materials and are therefore not classed biodegradable nor are they compostable.

However, the EU Standard EN 13432 Packaging - Requirements for packaging recoverable through composting and biodegradation; states that there are 4 criteria for evaluation for the whole packaging not just the ink, 1) biodegradability; 2) disintegration during biological treatment; 3) effect on the biological treatment process; 4) effect on the quality of the resulting compost.

For biodegradability it is therefore possible to meet the overall criteria for the final packaging if certain constraints are met with regards to printing inks;

- Ink film weight 1-5µm
- Each ink must not account for more than 1% of the packaging and collectively not more than 5%.
- Non use of heavy metals, including copper based pigments.

In case of a packaging formed by different components, some of which are compostable and some other not, the packaging itself, as a whole is not compostable.

It is possible to manufacture UV inks using raw materials from sustainable biodegradable sources, however there are a number of limitations

- Limited raw materials – limited range of linseed or soya based acrylated resins available,
- Costs – the cost to produce these resins are higher than the synthesised products,
- Reactivity – due to the low functionality of these resins the cure rates are considerably slower than the petroleum based equivalents,
- Photoinitiators and additives – are synthesised and have not yet, been able to be extracted from vegetables,
- Pigments – currently use organic pigment not vegetable based.

For these reason Paragon has not yet developed the vegetable based UV ink. We are in constant contact with our raw material suppliers and are being informed of any new developments in this area.

Note that UV inks are however much more environmentally friendly due to the non-use of VOC's when compared the other types of liquid inks.

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