Packaging and the Environment – The plain facts

Introduction

Kite Packaging provides a wide range of packaging solutions and in line with this we have produced an impartial summary of frequently asked questions.

Is there any legislation concerning packaging and the environment that I should be aware of?

Yes: There are 2 main legal directives as well as some industry specific ones, for example hazardous chemicals.

Heavy Metals (EU Directive 94/62/EC, Part 3):

This legislation requires all packaging to meet the minimum requirement that "On or after 30th June 2001, no person who is a responsible person shall place on the market packaging if the sum of the concentration levels of lead, cadmium, mercury and hexavalent chromium either in the packaging or in any of its packaging components exceeds 100 ppm". This may not be the case with recycled materials from the Far East, but certainly all packaging produced in Western Europe should meet this requirement.

Kite only works with suppliers who adhere to this directive and we can accordingly supply a statement of conformity.

'Packaging Regulations' (The Producer Responsibility (Packaging Waste) Regulations 2007):

Initially brought out in 1997 under the Governments 'Polluter Pays' principle all UK businesses with an annual turnover greater than £2m, that perform an activity on packaging, and handle 50 tonnes of packaging per year are obligated and will need comply. Due to the complexity of this process over 90% of companies choose to join a compliance scheme such as Kite Environmental Solutions. The aim is to encourage those companies who are obligated to try to reduce the amount of packaging (by weight) that they use, by cross charging the cost of re-cycling for those who introduce packaging into the UK. The legislation was further amended to include the Consumer Information Obligation, which requires sellers of packaging to provide details about reduction, re-use, recycling, recovery and landfill of packaging to their customers. Further information about the Packaging Regulations is available on our web site.

Can I specify recycled materials in my packaging?

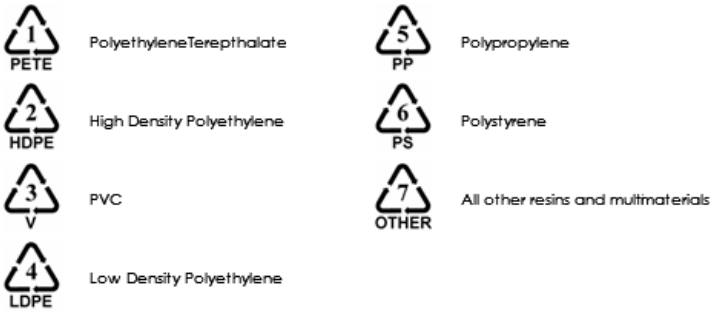
Yes: Many packaging items include recycled product as part of their raw materials. Most of the corrugated packaging Kite supply has high or completely recycled paper content, including a reasonable proportion of post consumer waste. Whilst polythene is easy to recycle, most of it is used in non packaging applications.

Is packaging made using recycled raw materials as strong as that using virgin ones?

No: Although the difference can be very small, often <5%.

Can my packaging be recycled?

Yes: Nearly all packaging is fairly easy to recycle and more importantly there are effective systems in place to do it. Plastics need to be of a single polymer type to aid recycling and there are 7 codes to help this.



If I send my packaging to be recycled or use recyclable packaging, will it reduce my Packaging Waste obligation?

No: Unfortunately not, although by doing so you may obtain PRN's to help you towards your target, but this is often offset by other costs, so not usually beneficial.

Is or can my packaging be Bio-degradable, compostable or oxy-degradable?

Possibly: Most packaging is ultimately capable of breaking down under one of the above headings, but a practical time scale is clearly the issue and increasingly, these terms are being frequently misused. It is becoming a particular issue with plastic packaging.

Bio-degradable and compostable

This can be considered to be the same thing, and essentially means that under conditions of warmth and moisture the packaging will break down (degrade) with the help of micro-organisms to form a residual material, which when mixed with soil or other organic compost will sustain healthy plant life.

The technical details

To claim a product as such, a manufacturer or supplier must ensure that it meets the stringent **BS EN 13432:2000** standard, which is quite a challenge. The requirements for packaging to be considered recoverable were initially stated as part of **EU Directive 94/62/EC** (as above on heavy metals). This was further amplified by EN 13432 and four other supporting directives with respect to organic recovery.

EN 13432 not only specifies the time scale of breakdown but also the effects as it degrades and the quality of the resulting compost. The four criteria are:

- The initial phase of biodegradability must show a degradation of at least 90% within 6 months as defined in EN 14046.
- The resulting compost must then have residual material content of less than 10%, of the original mass for particles >2mm as defined by EN 14045.
- No negative affect on the composting process
- Low levels of heavy metals and the absence of negative effects on the final compost.
- The only plastic based products that may currently be able to claim to meet BS EN 13432 are likely to be **PLA (Polylactic Acid)** based. Most paper based packaging will already comply.

Oxy-degradable

This is a particular phrase used in relation to most common plastics that have an additive to help degradation within a realistic time scale. Polypropylene (PP), high density (HDPE), low density (LDPE) and linear low density (LLDPE), can all use a small amount of the additive, <4% is typically is added to the polymer during the extrusion process and does not affect the performance until it is triggered by UVA & UVB light sources. The additive then acts as a catalyst to help the degradation process and, as with PLA based films, dependent on the conditions the product will degrade to an acceptable level.

Some not so widely published facts

- One of the issues is that for the degradation process to take place effectively, the temperature has to be around 58°C + and there has to be a relative humidity of about 80% +. Clearly outside of a specific facility or in a colder climate, this has to be taken into consideration as the process will almost certainly require outside help, including an energy source, before it starts to degrade at an acceptable rate.
- Interestingly the main bi-product of the bio-degradation process is CO2. Although some manufacturers claim their products to be carbon neutral this is actually very difficult to measure.
- Currently PLA biopolymers require more energy to produce than standard polymers.
- Most UV triggered plastics cannot be recycled in the normal way if the degradation process has already started.