



PRODUCT CODE: KR-OXO 100% DEGRADABLE POLYTHENE
Controlled Life Plastic Technology

PRODUCT DESCRIPTION:

Oxo-degradable film produced with d₂w[®] Controlled Life Plastic Technology from Symphony.

PROPERTIES:

DEGRADATION PROCESS

The degradation process starts with the heat from the extrusion and continues in two steps.

Step one: Chemical degradation is accelerated by increased ultraviolet light and/or heat and film stress, where over time the molecular structure of the product reduces significantly. The film will become fragmented. This process is irreversible in the presence of oxygen and once the molecular structure reduces to sub 40000 the film becomes water wettable.

Step two: This is called bio-degradation, where the micro -organisms attach themselves and consume the remnants.

RESULT & DEGREE OF DEGRADATION

100% of the product will degrade, leaving nothing more than a small amount of carbon dioxide, water and biomass.

ENVIRONMENTAL CONDITIONS NEEDED FOR DEGRADATION

Significantly, the KR-OXO film does not need a biologically active environment to start degrading – this will happen even if the plastic is left in the environment! This is very important if we are to address the serious litter problems caused by waste plastic. In the presence of oxygen, the other factors that accelerate degradation, are ultraviolet light, heat and film stress (such as pulling and tearing). Once the process is initiated, it is irreversible and will continue in aerobic parts of a landfill and even in water.

COMPARISON WITH BIO OR PHOTO DEGRADABLE

Oxo-degradable product degrades over time and is speeded up by increased light, heat or stress and slowed down by a reduction in these. It is irreversible.

Renewable - Bio-degradables will only degrade once buried and there is a highly microbial presence. These technologies emit methane when degrading - 23 times worse than CO₂. These materials are not compatible with standard PE Recycling.

Photo degradables will only degrade with UV light.

Oxo-degradable products with d₂w[®] Controlled Life Plastic Technology will degrade even if unfortunately discarded as litter. With this property, oxo-degradable products are especially suitable for flexible plastic products.

TIME NEEDED FOR DEGRADATION

The standard formulation should give a minimum of 12 months full useful product life; however this is variable and bags may start to show signs of degradation from as little as 3 – 6 months depending upon storage conditions. Always keep items in their original packaging, in ambient conditions away from direct light and heat.

MECHANICAL AND OPTICAL PROPERTIES AND FOOD APPROVAL

No difference to conventional non-degradable PE films. The product has food approval, according to Directive 2002/72/EC.

RECYCLING OF **KR-OXO 100% DEGRADABLE POLYTHENE**

The product can be recycled like conventional non degradable PE films.

CONTROLLED LIFE PLASTIC TECHNOLOGY

The speed of degradability can largely be controlled, by special formulation for any particular application.

The levels of uncontrollable variables – in particular heat, light and stress – to which the plastic is exposed, do, however, affect the actual speed of degradation. Higher than expected levels of these, will speed up the process and lower levels will slow it down (but will not stop it). The bags/film may become weak and can also give off an odour during degradation due to these variables.

Manufacturers typically build a significant safety margin into the degradation time, this then ensures that the properties of the plastic remain intact for the full useful life of the product on question.

STORAGE AND HANDLING OF FINISHED PRODUCTS

A degree of care is needed. Please ensure the first in first out (FIFO) rule is followed.

Always keep items in their original packaging, in ambient conditions away from direct light and heat. **The cooler and darker the better.** On the rare occasion, should the bag give off an odour, this often will not affect the performance and/or fit for purpose use of the bag. Beyond this sort of 'common sense', no special requirements apply.

Please note:

Jason Packaging does not accept any liability for the premature degradation of any bags or film it manufactures as it has no control over the variables that can affect the normal speed of degradation. (refer to Controlled Life Plastics Technology & Storage and Handling sections above)