

SUPERECO



A Degradable/Biodegradable packaging film

Products:

- SUPERECO 1011 MMB
- SUPERECO 2011 MMB
- SUPERECO 1012 SMB
- SUPERECO NP 2011 MMB
- SUPERECO 2011 MLB



Packing freshness, it is overall protection of environment

The trouble with plastics:

PACKAGING IS SEEN AS FUNCTIONAL BUT NOT ECOLOGICAL!

This is a finding of a March 2005 study of consumer expectations from packaging by the group MV2 for Europack. The study found that consumers are concerned with the fate of the packaging after use. In general, those surveyed saw packaging as functional but not good for the environment. A summary of the responses to the question about the qualities that they look for in packaging (% of respondents that agreed or strongly agreed that the listed attribute is important) is as follows:

Here you can find the results of the study			
Food Product		Heath and beauty Product	
Good protection of product	92 %	Easy to handle and transport	92 %
Easy to handle and transport	88 %	Good protection of product	92 %
Biodegradable	56 %	Biodegradable	48 %
Can be used again	42 %	Ecological	40 %
Ecological	41 %	Can be used again	26 %

Plastics, and particularly plastic films and bags, are widely used today because of their excellent properties:

- *Low cost*
- *Light weight*
- *Easy to convert*
- *Transparent or opaque, mat or glossy; rough or smooth*
- *Rigid or flexible*
- *Flexible at low temperature resistance (frozen products) and resistant at high temperature (hot filling, cooking or sterilisation in situation).*
- *Permeability or oxygen barrier, same for oils and humidity depending upon requirement*
- *Chemically inert, designed for contact with food or medicine*
- *Hygienic and stable*

This makes them ideal as single use packaging materials. Unfortunately, they have one major drawback – their inertness means that they persist for a long time in the environment when they are discarded. How long this is, is not really known. Plastics have only been in general use for 50-60 years. But it is this feature of plastics, and particularly plastic packaging, that the survey respondents found to be of concern.

A Technological Breakthrough:

Now there is a new technology that captures all of the benefits of conventional plastic packaging and addresses its one drawback – its persistence in the environment when it is discarded. Nature Pack now offers “**SUPERECO**”, a biodegradable biaxially oriented polypropylene (BOPP) film. This product comprises conventional polypropylene to which is added a proprietary formulation that accelerates the degradation of the packaging when it is discarded.

PRODUCT

SUPERECO films belong to family of degradable/biodegradable materials at which It has been treated to get what we call ‘acquired degradability/biodegradability’.

The technology consists by the addition of the special additives to the polymer which allows a controlled degradation/biodegradation. Those special additives coming from a strong R&D support and are incorporated in a low concentration. The concentration is calculated depending upon the shelf life needed for the packaging.

FILM STABILITY

SUPERECO films keep all its intrinsic mechanical and optical properties during converting period, especially as for example for fresh food packaging from converter to end user.

Film has guaranteed shelf life of 6 months under normal storage conditions.

The film always keep its degradability/biodegradability property in from the moment has been produced and will be triggered and accelerated when exposed to high levels of heat, temperature, UV light and mechanical stress.

It is advised to keep the film in its protection cover before and after the converting operations until packing the fresh product.

FILM DEGRADATION

Degradation period for **SUPERECO** films depends on the thickness of the film and further operation such as printing, coating, etc.

A virgin film of 35 μ , when it is discarded in a landfill, will still be stable for a period of 4 to 6 months, then the oxo-degradation step will start. This will take approximately 12 to 18 months, depending upon specific bacterial environment in the landfill.

A virgin film of 20 μ will follow the same cycle, but the degradation time will be approximately from 8 to 15 months. Then the biodegradation process starts as a second step.

FILM CONVERTING

SUPERECO films are not different from other standard films as BOPP and CPP for all possible converting operations. They do not require any changes as process parameters, equipments, inks, lacquers, varnishes, solvents, etc. and/or additional surface treatment to improve some properties such as barrier or printability.

SUPERECO FILM PROPERTIES

- *Degradable/biodegradable in landfill after disposal*
- *Low noise and crackle free*
- *Low density (g/cm³)*
- *High yield (m²/kg)*
- *Excellent mechanical properties*
- *Good perforation resistance*
- *Scratch resistance (under normal conditions)*
- *Excellent processability and machinability*
- *High clarity and gloss*
- *Good moisture barrier*
- *Resistant to chemicals, solvents, greases and oils*
- *Excellent ink and coating adhesion*
- *Excellent hot tack and heat seal strength (for specific grades)*
- *Low static property (for specific grades)*
- *Good puncture resistance (for specific grades)*

RECOMMENDED STORAGE CONDITIONS

Degradable/Biodegradable **SUPERECO** films are the only plastic packaging materials that have the functional properties to be used in almost every kind of packaging applications. With a little care, these properties last for a long time, otherwise the converter can face some problems.

Degradable/Biodegradable **SUPERECO** films are unique products which has maintained all properties of standard films except the property of degradation/ biodegradation under specific conditions. When these conditions are achieved, films start to degrade by combination of heat and UV in a first step and become biodegradable by absorption with micro-organism naturally present in the soils in a second step.

Degradable/Biodegradable **SUPERECO** films keep their properties within proper handling and storage conditions. But some structural differences may occur within improper conditions. Storage areas without proper protection can cause the films to be exposed to excess heat, UV light and humidity.

Then, maximum precautions should be taken to maintain all properties of degradable/biodegradable **SUPERECO** films during the required useful life:

1. The temperature should be preferably 30°C and not more than 40°C during handling and storage.
2. Rolls should never be exposed to excess humidity.
3. The arriving rolls should be carried and stored as packed by Super Film. Care should be taken to keep the rolls within this protection until the films converted. The converted films should also be covered by the same or alike material for protection.

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