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Blown Film Resin - Biodegradable, Dissolvable, Flushable

Biograde WS-50

- A fully biodegradable resin for dissolvable film applications
- Water soluble, biodegradable and compostable
- Used for thin and thick gauge film applications

Description

Biograde WS-50 is a water soluble, biodegradable and compostable resin for manufacture of plastic film based on thermoplastic starch (TPS). The solubility of the film is controllable and it dissolution increases with water temperature and agitation. Biograde has developed an optimum formulation which is cost effective and produces a strong film with excellent mechanical properties.

Applications

"Environmentally friendly" Biograde WS-50 can be used to make:

- Dissolvable laundry bags (for 100% infection control)
- Dissolvable dog poo bags for toilet disposal
- Dissolvable scallops bags for seeding juvenile scallops
- Dissolvable Pigment Bags
- Dissolvable bags for industrial chemicals (measured dose applications)
- Dissolvable bags for agro-chemicals (measured dose applications, no exposure to chemicals by operator, ease of use and convenience).

Properties and Attributes:

Biograde WS-50 possesses the following properties:

- good clarity and gloss
- Flushable and compatible with septic/sewage systems
- Non-toxic (also no eco-toxicity)
- Intrinsic antistatic properties
- Excellent tensile strength & elongation
- Highly resistant to oils, fats and fatty acids
- Printable without corona treatment
- High oxygen barrier properties
- Soft and compliant hand feel



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Biograde WS-50 is perfectly positioned to be integrated into a modern organic waste recycling system as it is compatible with commercial composting, aerobic digestion and anaerobic digestion.

Application Data:

Dissolvable laundry bags overcome cross infection in handling of heavily soiled laundry particularly. These bags been specifically designed for the Aged and Health care industries, primarily being used within Aged care facilities, Hospitals and Nursing Homes.

The Flushable Dog Poo Bag provides a convenient, environmentally friendly solution for people tackling the issue of pet waste. The flushable bag is perfect for people wanting to clean up after their dog or cat rather than dispose of the waste in their garbage bin.



Dissolvable Pigment Bags are for packaging pigments for the cement, coatings, clay products, chemical, and other industries that use pigments in colouring products. The dissolvable bags provide a convenient, low dusting solution to handling pigments and coloured oxides for cement products, stains and sealers used in products for the construction and related industries.

Dissolvable bags made with WS -50 can be used to contain OP (organophosphate) sheep dips to eliminate operator exposure to the concentrate. The package consists of a closed transfer system, where there was no contact between the operator and the OP dip concentrate during dip charging and replenishment.



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The dissolvable packaging is the ideal solution since the operator simply adds the packaged product to the dip bath, thus removing the need to come into contact with the concentrate. The water-soluble sachet packed inside an outer translucent bag that could be handled perfectly safely by dip operators. The operator simply selected the correct number of sachets required for dipping, opened the outer bag using a tear strip and then dropped the inner water-soluble sachet into the dip bath containing a known amount of water.

Processing Conditions

Biograde WS-50 resin can be processed on standard LDPE or LLDPE film blowing equipment.

Specific Instructions for Film Blowing of Biograde WS-50 Resin:

1. The resin is very sensitive to temperature during the film blowing process. Please be cautious of the temperature used during extrusion and film blowing. As a reference, the film-blowing temperatures successfully used by the manufacturer are: 160 to 185 deg. C.
2. Before blowing the film, the film blowing extruder needs to be purged and cleaned of residual polyethylene and then the WS- 50 resin can be used as the last cleaning step, after which the temperature can be adjusted to the correct settings.
3. The screw rotation speed should be slow at first and then fast to match the haulage speed which is first slow and then fast as well.
4. The inside and outside aeration should be gradually changed from weak to strong. Cold aeration is better; 10-15 deg.C works to avoid film blocking problems.
5. The preferred blow-up ratio is 1:2.5 or 1:3. The height from die orifice to the nip roll should be higher than 2.5 m to ensure full cooling and prevent film blocking. A screw with a blow up ratio of 1:28 is recommended.
6. The optimum sealing temperature for bags manufactured with WS-50 is 150 deg. C.

Biodegradability

Biograde WS-50 is a completely biodegradable polymer suitable for the manufacturing of film-type products. It does not contain any non-degradable polymers such as PE, PP, PS and PVC.

The plastic film is completely compostable as demonstrated by its 100% disintegration after 3 months and > 90% mineralization in less than 6 months.