



RAINBOW BIO II WRAP GUARD

Rural Tree Planting

Rainbow is one of the UK's leading manufacturers and suppliers to the forestry, horticulture and landscaping markets, we are committed in our mission to take harmful plastics out of the countryside.

We are all aware of the vital role tree guards play in protecting millions of newly planted saplings from animal browsing, and the effects of herbicide application. However, the potential environmental impact of discarded plastic guards in our woodlands and forest habitats has inspired us to develop a new generation of tree guard – the Rainbow Bio II Wrap.

Featuring a vertical split that creates a natural overlap, the Rainbow Bio II Wrap will grow with the tree whilst also allowing easy installation and removal.

Raw Materials

Only plants (not oil) are used to make this product, and the materials used are certified as being 100% bio-based, ensuring a sustainable alternative.

Toxicity

Unlike oil-based plastics, the Rainbow Bio II Wrap Guard is completely non-toxic when biodegraded. In fact, only water, CO₂ and biomass remains.

Carbon Footprint

The biomaterials used have a carbon footprint of up to 5x lower than oil-based plastics.

Sourcing

By only using post-industrial waste and off-cuts from factories manufacturing products from biopolymers, this means that the 'plants' used in these guards aren't competing with other food sources and therefore help contribute to a more productive biopolymer value chain.

End Of Life Options

After its useful life, the product can be recycled or composted to create healthy soil nutrients, or used for energy generation, Recent research has shown various applications made from the same base material degrade faster than an orange peel in a municipal composter. Alternatively, in hard to reach areas, these can be left to biodegrade in situ and will, slowly over time, start to degrade and breakdown into water CO₂ and biomass.

Product Specification

| | |
|--------------------------|---|
| Name | Rainbow Bio II Wrap Tree Guard |
| Material | Recycled Polylactic Acid with bio-UV stabilisation system |
| Sizes | Nominal diameters of 38mm (1 ^{1/2} "), 50mm (2") expandable to 50mm (2") and 65mm (2 ^{5/8} ") |
| Colours Available | Green Tint |





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The following table shows the required size for maximum protection from specific animals.

| Animal | Length of Wrap |
|--------|----------------|
| Vole | 20cm |
| Rodent | 45cm |
| Rabbit | 60cm |
| Hare | 75cm |

First Aid

| | |
|---------------------|--------------------|
| Eye Contact | Not applicable |
| Skin Contact | No harmful effects |
| Inhalation | No effect |
| Ingestion | No harmful effects |

Protective Equipment

| | |
|------------------------|---|
| Eye Protection | Recommended during installation due to risk of tree top shoots entering the eye |
| Skin Protection | Protective gloves recommended during installation due to risk of cuts on fingers during quick opening of wraps on large installations |

Fire Protection

| | |
|-----------------------------|--|
| Ignition Temperature | 338°C |
| Recommendation | In the event of fire, use CO2 foam as the preferred material |
| Important Notice | When on fire, PLA will give off Carbon Monoxide Gas so avoid all fumes and use breathing apparatus |

Storage and Handling

| | |
|------------------|--|
| Stability | Highly stable below 55°C |
| Packaging | Cartons not to be stacked more than 6 high |

Physical Properties

| | |
|-------------------------------------|--------------|
| Tensile Strength | 263 Mpa |
| Glass Transition Temperature | 55-60°C |
| Specific Gravity | 1.36 kgs/cm3 |





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Resistance to Chemicals

| | |
|-------------------|---|
| Solubility | Soluble in Chlorinated Solvents, Benzene and Dichloromethane. Insoluble and largely stable to Acids, Oils, Greases, Petrol, Water and Alcohols. |
|-------------------|---|

Environmental Issues

The material used in the manufacture of the Rainbow Bio II Wrap Tree Guards have passed all required tests against EU guidelines at an independent laboratory to be classed as fully compostable.

Instructions for Installation

- Plant your whip
- Push cane into the ground next to the whip and secure in place with hammer or mallet
- Remove a single Rainbow Bio II Wrap Guard from the larger wrap
- Slot the Rainbow Bio II Wrap Guard over both the plant and the cane ensuring it touches the ground

