



# Biodegradable Spiral Tree Guard

The new Treebio range has been developed in response to requests from clients, landscapers and foresters for biodegradable tree protection products. Green-tech recognises that as an industry we need to reduce the use of plastic products and search for suitable alternatives that will protect the tree whilst also protecting the environment. The spiral contains biodegradable polymers that will break down in a variety of tree planting applications from forests to highways. It has been tested within a range of temperature extremes, along with typical levels of UV radiation.

## The Biodegradable Material Facts

The material used in the manufacture of Green-tech's Bio Spiral Tree Guards have passed all required tests from EU Guidelines at an independent laboratory to be classified as fully compostable. The material has gained the DIN CERTO certificate. The materials are classed as fully biodegradable and are made primarily of polylactic acid, a repeating chain of lactic acid which undergoes a two-stage degradation process. The moisture and heat present in a compost pile, and to a lesser degree in soil-attacks the polymer chains and splits them into much smaller parts of polymer and eventually pure lactic acid. Finally, Micro-organisms found in compost and soil will consume the lactic acids as nutrients as a food source for them. The result is Carbon Dioxide, Water and Humus which is a soil nutrient.

This whole process is temperature and humidity dependant where the polymer in pieces of less than 2mm thick will completely break down within 6 summer months when in contact with soil. The Spiral Tree Guard will be attacked initially by UV degradation to start the break up process and Biodegradable stabilisers are added to the material before the manufacturing process to stabilise the spiral sufficiently to withstand this UV degradation for 4/5 years in the place of use.

The main function of the spiral tree guard is to protect young trees from destruction by animals. The following table shows the required size for maximum protection from specific animals.

Animal	Length of Spiral
Rodent	45cm
Rabbit	60cm
Hare	75cm
Possum/Sheep/Deer	100cm - 150cm

Green-tech endeavour to ensure that the information given on this technical data sheet is accurate, but accept no liability for its use or its suitability for particular application.

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Green-tech's Bio Spiral Tree Guards are manufactured with ventilation holes as standard, which we recommend using to minimise mildew damage. However, should weed control be necessary around the young tree using sprayed herbicides, we recommend a Spiral Tree Guard without any ventilation holes which can be manufactured upon request.

The standard Bio Spiral Tree Guard is 38mm in diameter, which is sufficient for most 1-2 year old trees, for bushier trees and ferns, we recommend using the 50mm diameter version, or even the 68mm diameter.



### Product Specification

<b>Name</b>	Green-tech Bio Spiral Tree Guards
<b>Material</b>	Polylactic Acid with UV stabilisation system
<b>Sizes</b>	Manufactured in Nominal diameters of 38mm (1 <sup>1/2</sup> " ) and 75mm (3")

### First Aid

<b>Eye Contact</b>	Not applicable
<b>Skin Contact</b>	No harmful effects
<b>Inhalation</b>	No effect
<b>Ingestion</b>	No harmful effects

### Protective Equipment

<b>Eye Protection</b>	Eye protection is recommended when installing the Bio Spiral Tree Guards due to risk of tree top shoots entering the eye.
<b>Skin Protection</b>	Wear Protective Gloves for installing Bio Spiral Tree Guards to remove risk of cuts on fingers during quick multi-opening of the Guards on large installations.

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### Fire Protection

Ignition Temperature 338°C.

In the event of a fire, use CO2 Foam as preferred material.

When on fire PLA will give off Carbon Monoxide Gas so avoid all fumes and breathing apparatus must be used.

### Storage and Handling

Highly stable product below 60°C.

Cartons not to be stacked more than 6 high.

### Physical Properties

<b>Tensile Strength</b>	263 Mpa
<b>Glass Transition Temperature</b>	60°C
<b>Specific Gravity</b>	1.36 kgs/cm <sup>3</sup>

### Resistance to Chemicals

PLA is soluble in Chlorinated Solvents, Benzene and Dichloromethane.

It is however insoluble and largely stable to Acids, Oils, Greases, Petrol, Water and Alcohols.



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