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 Treebio spiral is manufactured from raw materials derived from plants rather than traditional petro chemical fossil fuel sources. It has been tested within a range of temperature extremes, along with typical levels of UV radiation.

The Biodegradable Material Facts

The plant-based raw materials used in the manufacture of the Treebio spiral are certified as biodegradable and conform to DIN CERTCO EN 13432 guidelines, these guidelines maintain a "positive list" of base materials, intermediates and additives which are certified for use in the manufacture of compostable packaging products. Although the Treebio spiral does not fall within the compostable packaging and biodegradable single-use plastic market, its components and raw materials do.

The Treebio has been designed to last for 4 years, the UV stabilizer additive present within the spiral will migrate over the course of 4 years through the process of photodegradation. Once the UV stabilizer additive has migrated, a second additive will facilitate the breakdown or shatter of the spiral into pieces typically less than 3 cu mm in size. These pieces will then end up on the forest floor surrounded by grass, earth and leaf allowing the biodegradation process to begin. The shattered pieces of the spiral will then combine with the micro-organisms and bacteria found in soil until they ultimately revert back to base organic materials, CO2 and water. It will biodegrade completely in industrial composting facilities but we cannot give any definite times of breakdown in these circumstances as there are far too many unknowns and variables for us to cover in any test programme.

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
Sheep/Deer	100cm - 150cm

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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

Name	Green-tech Bio Spiral Tree Guards
Material	Polylactic Acid with UV stabilisation system
Sizes	Manufactured in Nominal diameters of 38mm, 50mm and 68mm

First Aid

Eye Contact	Not applicable
Skin Contact	No harmful effects
Inhalation	No effect
Ingestation	No harmful effects

Protective Equipment

Eye Protection	Eye protection is recommended when installing the Bio Spiral Tree Guards due to risk of tree top shoots entering the eye.
Skin Protection	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

Tensile Strength	263 Mpa
Glass Transition Temperature	60°C
Specific Gravity	1.36 kgs/cm^3

Resistance to Chemicals

PLA is soluble in Chlorinated Solvents, Benzene and Dichloromethane.
It is however insoluable and largely stable to Acids, Oils, Greases, Petrol, Water and Alcohols.

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