



Zinflam Thermal Balance 100

Product Specification	Characteristics	Units	Specification Value	
			min	max
	Appearance		Fine Powder	
	Colour		white	
	Moisture	%	--	1.0
	Lead (Pb)	ppm	--	5.0
	Cadmium (Cd)	ppm	--	3.0
	Iron (Fe)	ppm	--	15.0
	Copper (Cu)	ppm	--	3.0

Typical Chemical-Physical Characteristics	Characteristics	Units	Value
	Odour/Taste		Odourless
	Refractive Index		1.57
	Crystal Density (at 20 °C)	g/cm ³	2.8
	Oil Absorption	% w/w	24
	Water Solubility (gr TB100 / 100 gr H ₂ O at 20 °C)	% w/w	< 0.1
	Particle size distribution values		
	d10	µm	1.0
	d50	µm	3.5
	d99	µm	21.0

Product description: This product consists of boron-based compounds additives blend, recommended to produce polyolefin film for the greenhouse and agricultural sector particularly in **warm geographical areas** such as the Mediterranean basin with the aim of plant thermal stress reduction between day and night.

Applications: TB 100 in the manufacturing of polyolefin-based greenhouse film produces two key benefits:

- 1) Average recorded temperature reduction during daytime, thanks to the penetration reduction of the NIR (Near Infrared Region) solar spectrum responsible of heating the greenhouse.
- 2) Positive "greenhouse effect" overnight with the reduction of heat loss (barrier function towards long IR re-emitted from the ground).

The obtained film with this additive is characterised by an opaline colour, with a good ratio between direct light vs diffused light producing good qualitative and quantitative effects due to thermal stress reduction, particularly during daily hours and it contributes to a greater uniformity in the passage of the PAR band.

The additive does not interfere with any UV stabilizers, antifog, anti-mist. etc... Such additives are normally used in the production of greenhouse films.

Loading levels: it is recommended to use TB 100 via a pre-dispersed form in polyolefin polymers whose is easy to reach a final active substance concentration of 50% by weight inside the masterbatch.

Exposure : central Italy (140 Kly/ year)

Film PE-COEX-25/50/25- film thickness 200 micron

Control : blank

TB 100 : 5,0% (*)

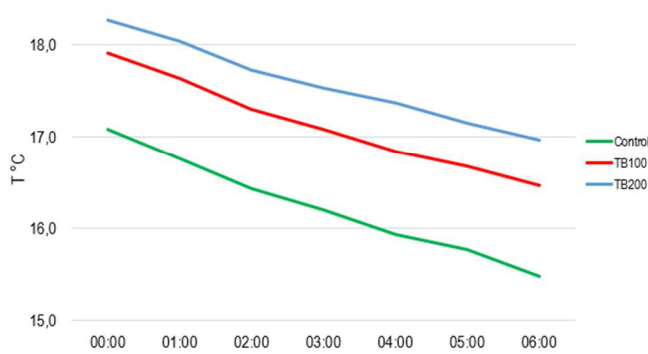
TB 200 : 5,0% (*)

(*) only in the core layer

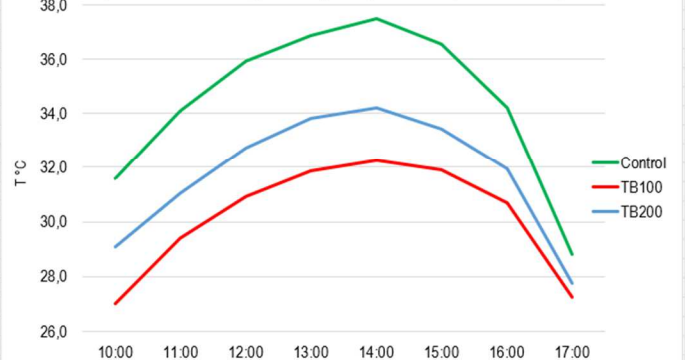


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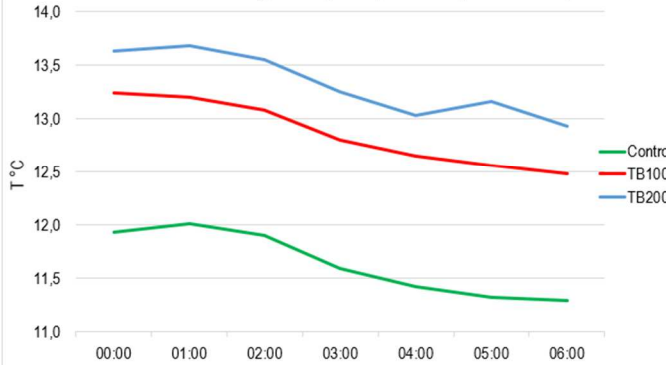
September 2022 avg. hourly temperature (00:00-06:00)



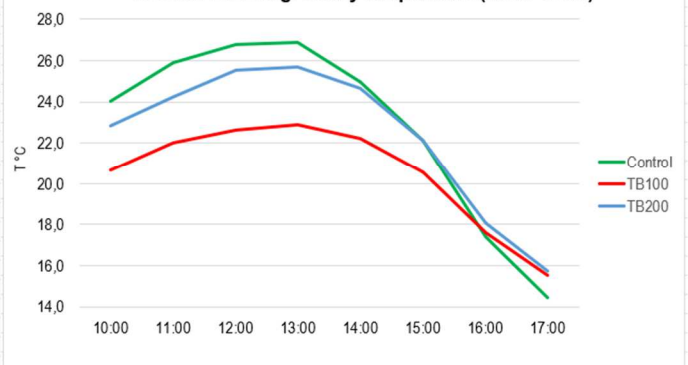
September 2022 avg. hourly temperature (10:00-17:00)



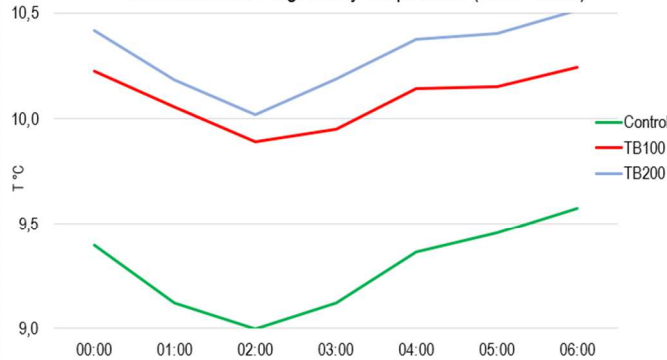
October 2022 avg. hourly temperature (00:00-06:00)



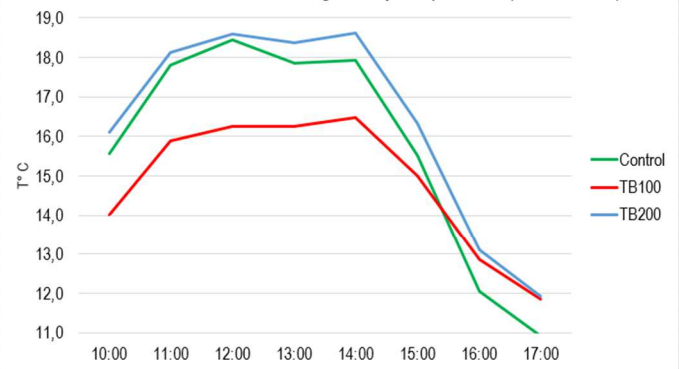
October 2022 avg. hourly temperature (10:00-17:00)



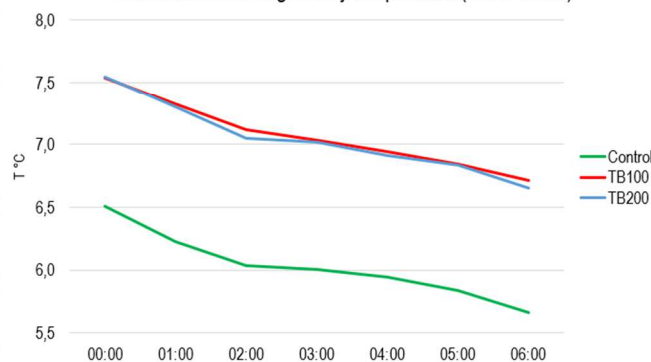
November 2022 avg. hourly temperature (00:00-06:00)



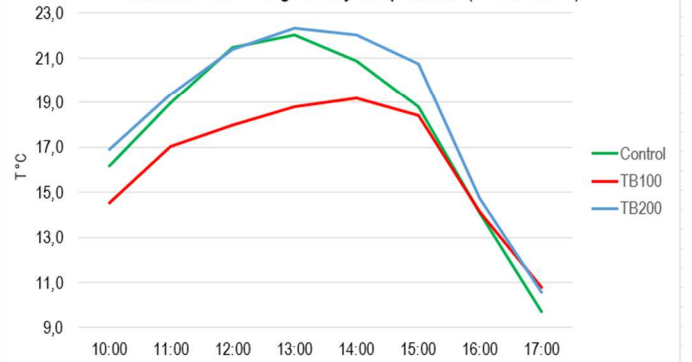
November 2022 avg. hourly temperature (10:00-17:00)



December 2022 avg. hourly temperature (00:00-06:00)



December 2022 avg. hourly temperature (10:00-17:00)





- Shelf Life** If correctly stored, the product is chemically and physically stable. Store product in a dry, well-ventilated warehouse.
- Packaging** **Standard Packaging** 25 kg Bags; 1000 kg Big Bags.
- Safety Data** Please refer to material safety data sheets for any information regarding hazards identification or handling and storage of this product.

FORMULATION	TB 100	TB 200	
<i>Nominal thickness (µm)</i>	200	200	
<i>IR effectiveness (%)</i>	>80%	>85%	8.8 EN 13206
<i>Light Transmittance (%)</i>	88,41	83,20	ASTM D- 1003-00
<i>Diffuse luminous trasmittance (%)</i>	47,72	48,39	
<i>Haze (%)</i>	53,90	58,08	



