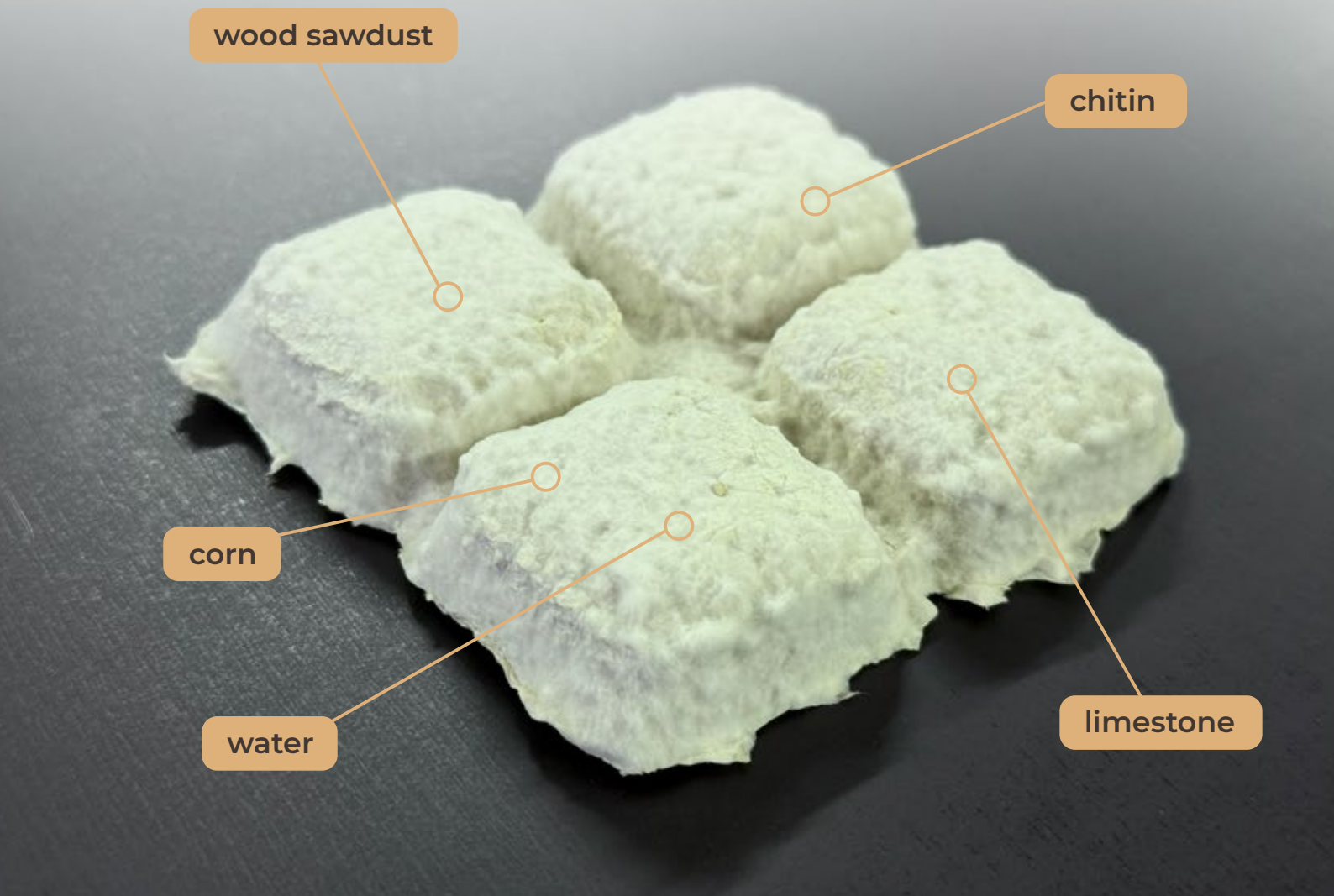
MYCO

Technical data sheet

Basic information

Myco material is a commercially available biocomposite.



Myco SafePads test results

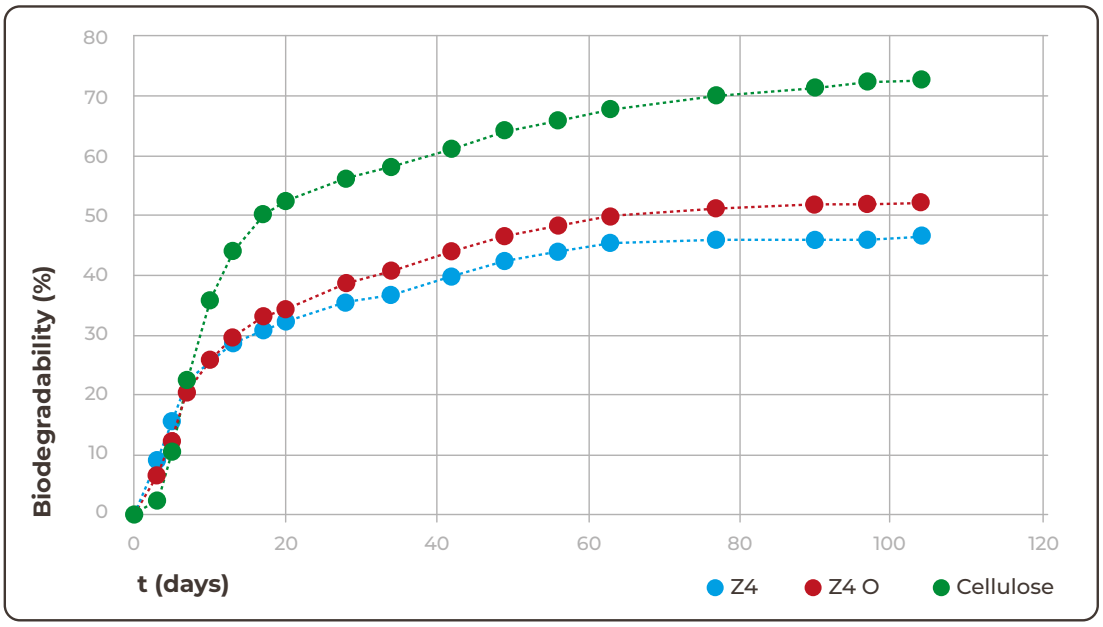
Myco SafePad is a paper capsule filled with Myco material.

Hazard designation

1. Danger to human health: No specific dangers.
2. Safety hazards: No specific dangers.
3. Environmental hazards: No specific dangers.

Biodegradability

Biodegradability was determined according to ASTM D5988-18 (aerobic degradation in soil at 21 ± 2 °C for 104 days). The degradation history of samples Z4 (pure Myco material), Z4 O (SafePad) and control cellulose is shown in the following graph.



Acute toxicity

The hypocotyl growth inhibition test of Lactuca sativa was performed according to EN ISO 11269-1. The control sample (clean soil) showed an average root length of 19.71 mm.

Sample	Average root length (mm)	Growth inhibition (%)
Control	19,71	0,0
Myco material	19,16	2,8
SafePad	16,44	16,6

Table: Acute toxicity results (mean of n = 5)

These values are well below the 50 % toxicity limit and therefore the samples are considered non-toxic. The test confirmed that minimal growth inhibition is not able to significantly affect the biological function of the plants, which is crucial when assessing their impact on agricultural production and forest regeneration.

Content of hazardous substances

The analysis of selected metals and organic contaminants was carried out in accordance with Decree No. 273/2021 Coll. and No. 153/2016 Coll.
The values are given in mg/kg dry matter (dried at 105 °C).

Indicator	Myco material	SafePad	Limit (273/2021 Coll.)	Limit (153/2016 Coll.)
As	2,79	3,90	10	15
Cd	< 0,10	< 0,10	1	0,4
Cr	3,34	< 2,50	100	55
Cu	2,86	< 2,50	100	45
Hg	< 0,01	< 0,01	1	0,3
Ni	< 2,50	< 2,50	65	45
Pb	< 2,50	< 2,50	100	55
Zn	37,6	29,10	300	105
PAH*	< 0,50	< 0,50	3	1

** PAH = polynuclear aromatic hydrocarbons*

Table: Content of hazardous substances in mg/kg (dry weight, average of n = 3)

Indicator	Unit	Myco material	SafePad
Mo	mg/kg dry weight	< 0,50	< 0,50
Ca	mg/kg dry weight	8,01	7,25
Mg	mg/kg dry weight	3,49	2,80
K	mg/kg dry weight	4,79	2,79
P	mg/kg dry weight	2,07	0,62
Humidity	%	8,09	8,46
pH		4,60	4,60
Combustibles	% dry weight	96,70	97,40
Total N	% dry weight	0,85	0,59
Impurities > 20 mm	%	< 0,50	< 0,50
Unwanted additives > 5 mm	%	< 0,50	< 0,50

Table: Other indicators (average of n = 3)

Conclusion

Overall, it can be concluded that the samples Z4 without packaging and Z4 with packaging show **favourable tested parameters in terms of environmental protection**. The biodegradability of both materials is high, toxicity is minimal and the content of hazardous substances meets the legislative limits. These properties make them suitable for use in agriculture and forestry, where they can contribute to environmentally friendly land applications and minimise ecological load. At the same time, their use in sustainable practices represents a promising step towards reducing environmental

UNI EN 13432:2002 Certification

In the process.

Physical-mechanical properties

The analysis of selected metals and organic contaminants was carried out in accordance with Decree No. 273/2021 Coll. and No. 153/2016 Coll. The values are given in mg/kg dry matter (dried at 105 °C).

Moisture sensitivity: **RH > 50 %** (slight variations in colour tone may occur on the surface).
Odour: **no or light natural odour**
Material appearance: **compact and durable, available in white**

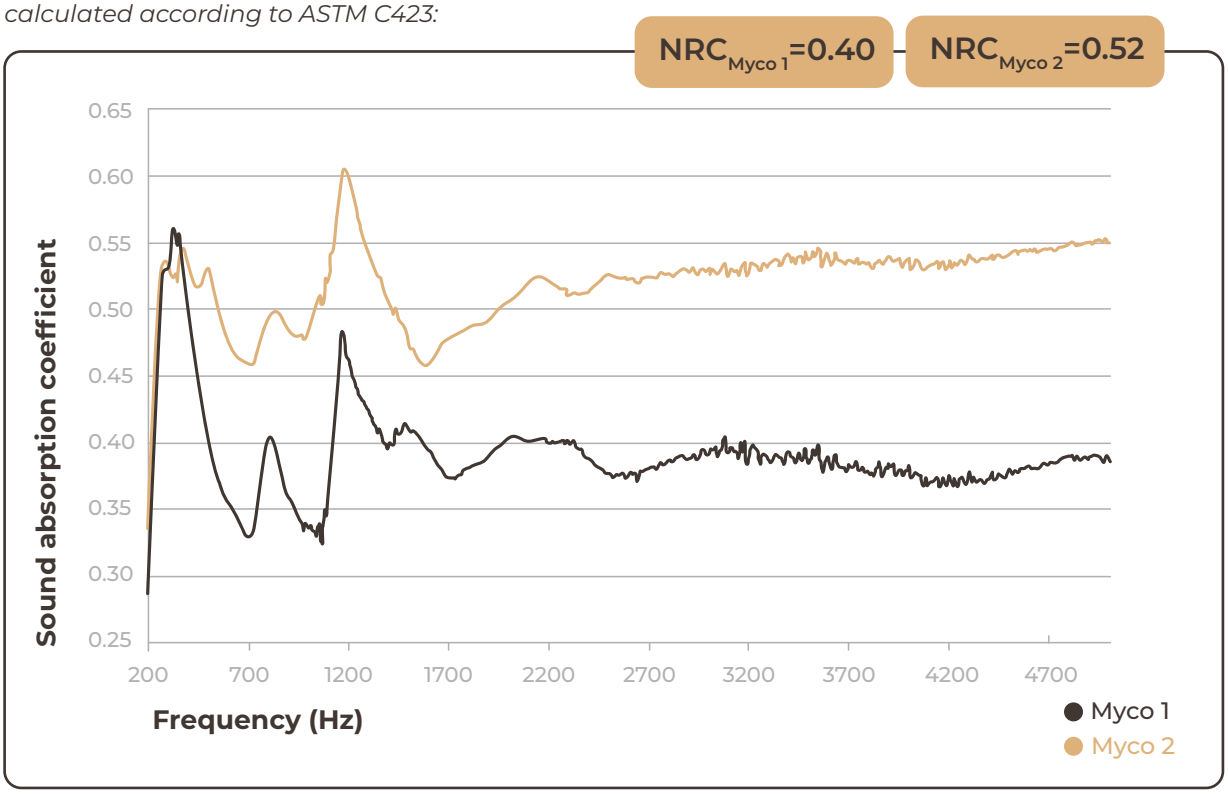
UV sensitivity according to EN 15187 excellent: **grey 5/5, blue range > 6**
Dimensional stability according to EN 1604: **< 0.4% (40°C; RH = 70 %), -2.0% (70°C; RH = 90 %)**
Volume weight depending on substrate composition: **100-220 [kg·m^{-1}]**
Coefficient of thermal conductivity: **λ = 0.046 [W·m^{-1}K^{1}]**

Test bodies: 100 x 100 x 14 mm
Strength at 10% deformation: **σ_{10} = 100 ± 10 kPa**

Classification of reaction to fire class according to EN 13501-1: D-2s-dO
VOC emise: **unmeasured (µg/m2h)***
**VOC results determined in the chamber for 28 days*

Acoustic properties

Measured according to EN ISO 10534-2, sound absorption coefficient calculated according to ASTM C423:



	α 250 Hz	α 500 Hz	α 1000 Hz	α 2000 Hz	NRC
Myco 1	0.47	0.40	0.34	0.40	**0.47**
Myco 2	0.51	0.53	0.48	0.51	**0.51**

Based on the measured values, Myco material can be classified in **sound absorption class D**, which is good for natural wood-based materials.

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