

## Brief information

### "PCF and sustainability study on the binder of ECCO Adhesives Sp.z.o.o ."

#### General information on the company and product

The company ECCO Adhesives Sp.z.o.o. manufactures a biological binder for which a product carbon footprint has been calculated. Twelve employees produce at the 37-552 Mlyny site in Poland.

A Product Carbon Footprint (PCF) and a comprehensive sustainability assessment were carried out by an experienced specialist institute. The results clearly show the ecological advantages of the biogenic binder from ECCO Adhesives compared to conventional synthetic products.

#### 1. climate friendliness and low carbon footprint

The binder examined causes only 1.23 kg CO<sub>2</sub> equivalents per kilogram and is therefore significantly below the values of conventional UF resins (1.83-2.04 kg CO<sub>2</sub>-eq/kg) and MUF resins, whose values are generally even higher.

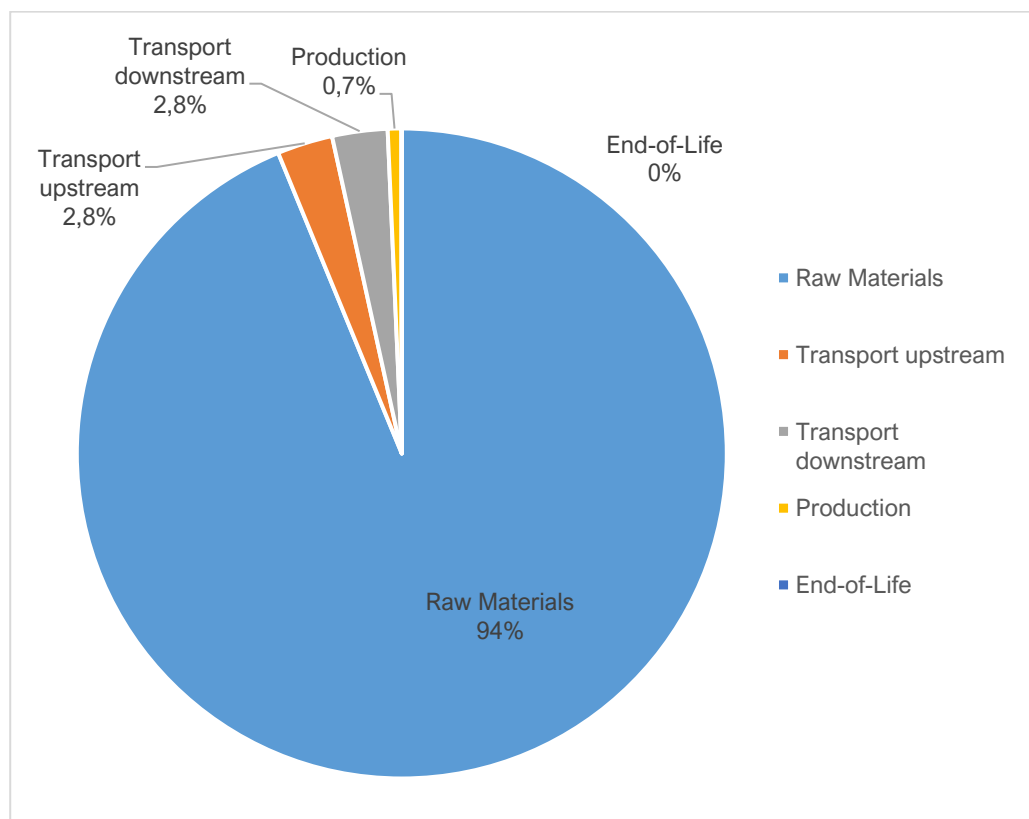


Figure1 - Shares in the composition of the PCF

The energy requirement in production is only 12-15 kWh per cubic meter, while conventional binders such as MUF require between 160 and 200 kWh.

### 2. avoidance of harmful emissions

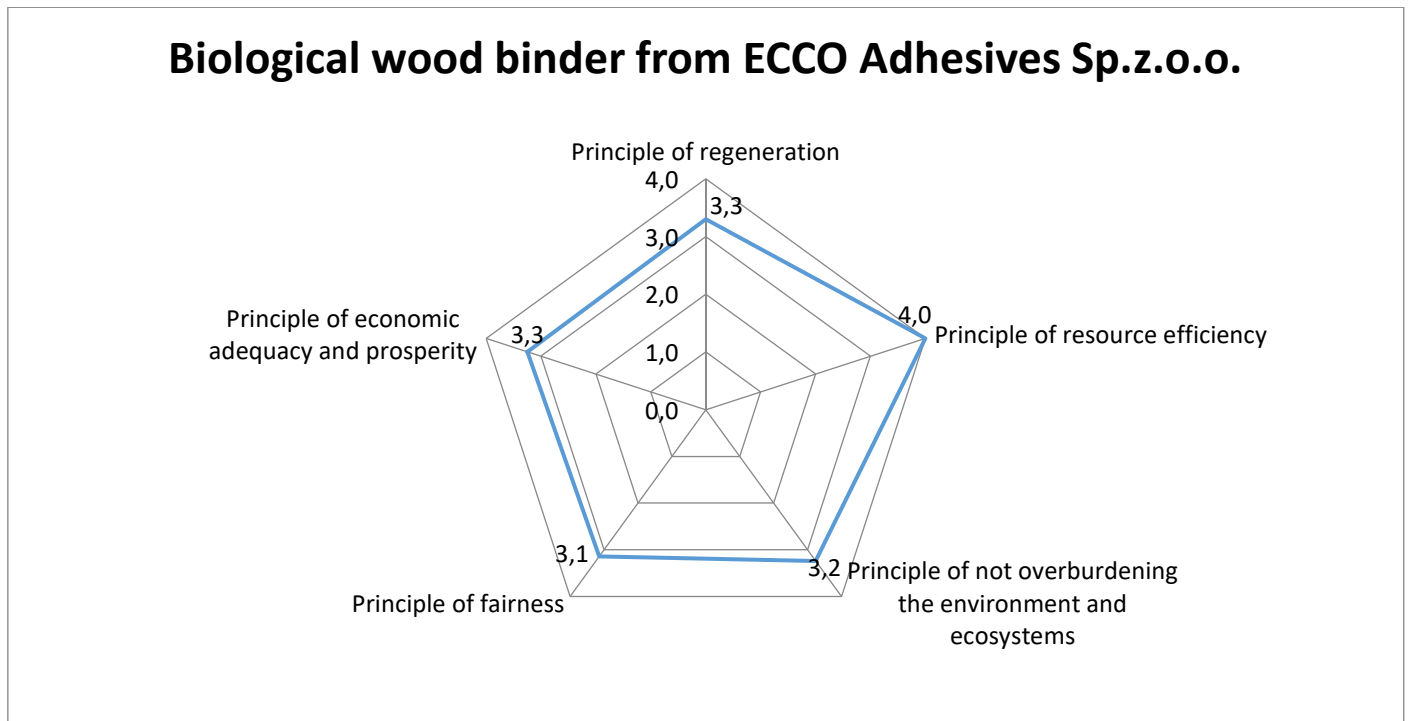
In contrast to synthetic resins, the biogenic binder is completely formaldehyde-free. In addition, the emissions of volatile organic compounds (VOC) are around 50 % lower than with UF resins. Due to the absence of toxic substances, it is particularly suitable for interior applications, furniture production and even food packaging.

### 3. environmental compatibility at the end of life and recyclability

Thermal recycling only produces biogenic CO<sub>2</sub> emissions, which are returned to the natural carbon cycle. The recyclability is significantly improved due to the high degradability of the binder matrix. Biological recycling via composting is generally possible, which ensures the return to the natural organic cycle.

### 4. sustainability assessment

In the assessment according to the five principles of strong sustainability, the product achieves excellent results: 4.00 points for resource efficiency, 3.30 for regeneration, 3.24 for environmental and ecosystem protection, 3.14 for fairness and 3.25 for economic appropriateness.



### 5 Industrial practicability

The binder exhibits high shear strength and ageing resistance. It can be processed at room temperature and can also be stored at low temperatures without becoming unusable. This makes it an uncomplicated and versatile solution for industrial applications.