

Scheme S1. Phosphate containing polyester synthesis reaction.

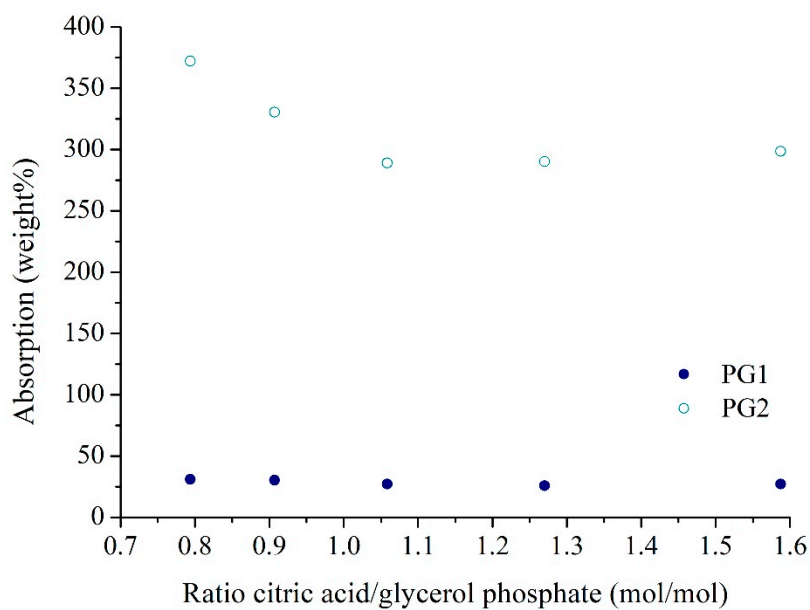


Figure S1. Water absorption of cured polyesters with phosphorylated glycerol: PG1 and PG2.

Table S1. Swelling and water absorption data for particleboard F

Sample	Swelling [Thickness%]	Absorption [Weight%]
F	74 ± 7	167 ± 14

From the ^1H -NMR data collected in **Table S2**, it was possible to calculate de mol% of phosphorylated and non-phosphorylated carbon atoms as follows:

If, P_s (parts per unit of substituted secondary alcohols) can be calculated according to **Equation (S1)**, non-substituted secondary alcohols would be $1-P_s$, correspondingly P_s would match the non-substituted primary alcohols. Hence, it was possible to calculate the overall non-substituted alcohols (P_{c+d}) by means of **Equation (S2)**. And from this, the percentage of substituted carbons can be calculated by **Equation (S3)**.

$$P_s = \frac{A_{c'}}{A_{d'}/2 + A_{c'}} \quad \text{Equation (S1)}$$

$$P_{c+d} = 2 * P_p + (1 - P_p) \quad \text{Equation (S2)}$$

$$\text{Percentage of substituted carbons} = \frac{A_{c'} + A_{d'}/2}{A_{c'} + A_{d'}/2 + A_{c+d}/P_{c+d}} * 100 \quad \text{Equation (S3)}$$

Table S2. Data obtained from ^1H -NMR.

Sample	Area _{c'} [3.88–3.66 ppm]	Area _{d'} [3.66–3.48 ppm]	Area _{c+d} [3.48–3.20 ppm]	-OH Substitution [%]
PG1	0.59	0.41	2.66	34
PG2	0.62	0.37	1.37	51