

Supporting information

Scaling up lignin-based polyols for PU coatings

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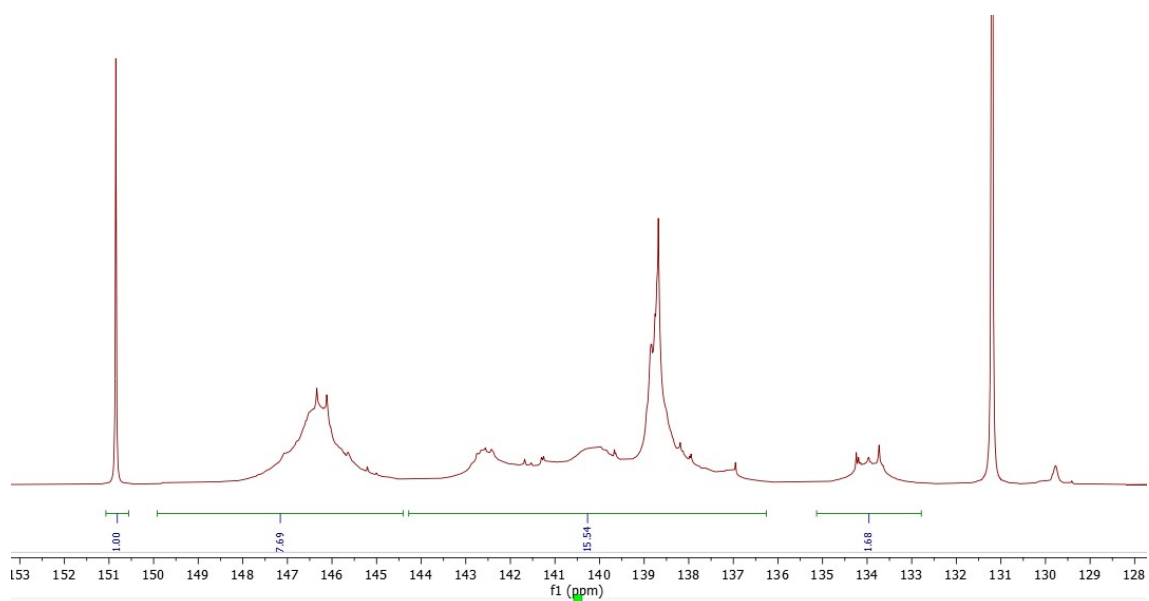
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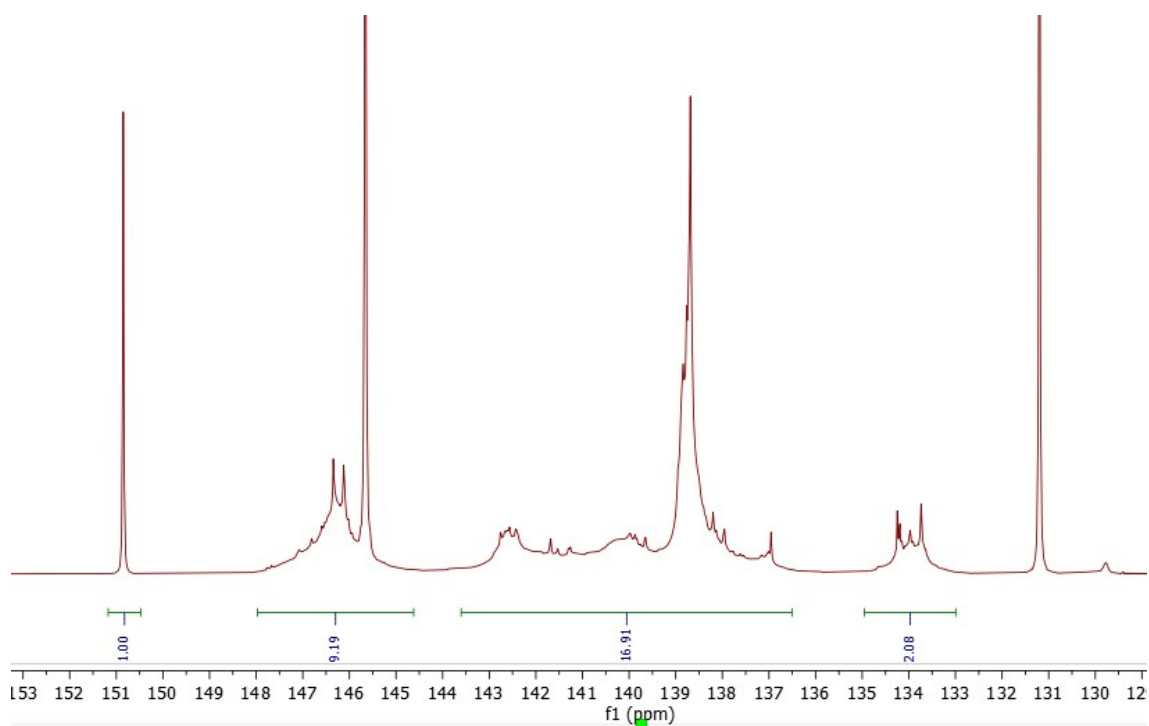
31P NMR Spectra

Quantification of OH groups in lignins by 31P NMR

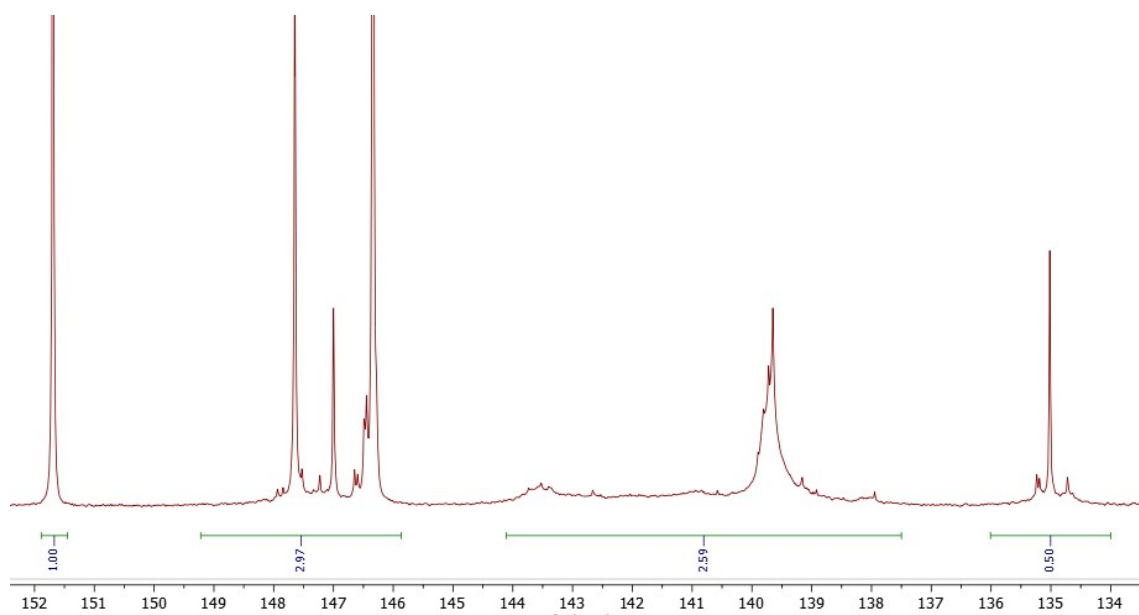
Lignin	Phenolic (mmol/g)	OH	Aliphatic (mmol/g)	OH	COOH (mmol/g)	Total (mmol/g)
Lineo®	4,33		2,12		0,41	6,86
FKL100	5,57		3,01		0,68	9,18
FKL65	5,00		2,04		0,68	7,72
LPO2	0,58		1,12		0,18	1,87
LPO5	1,75		2,70		0,27	4,73



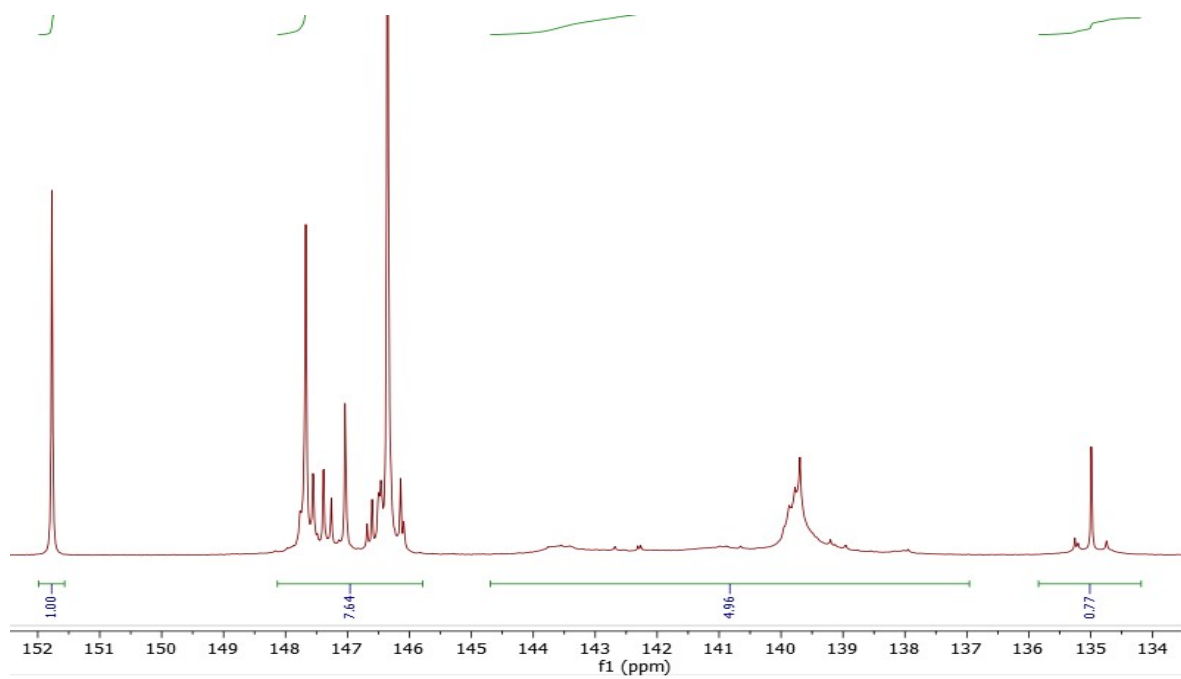
S1. ^{31}P NMR spectra of starting lignin (Stora Enso Lineo®)



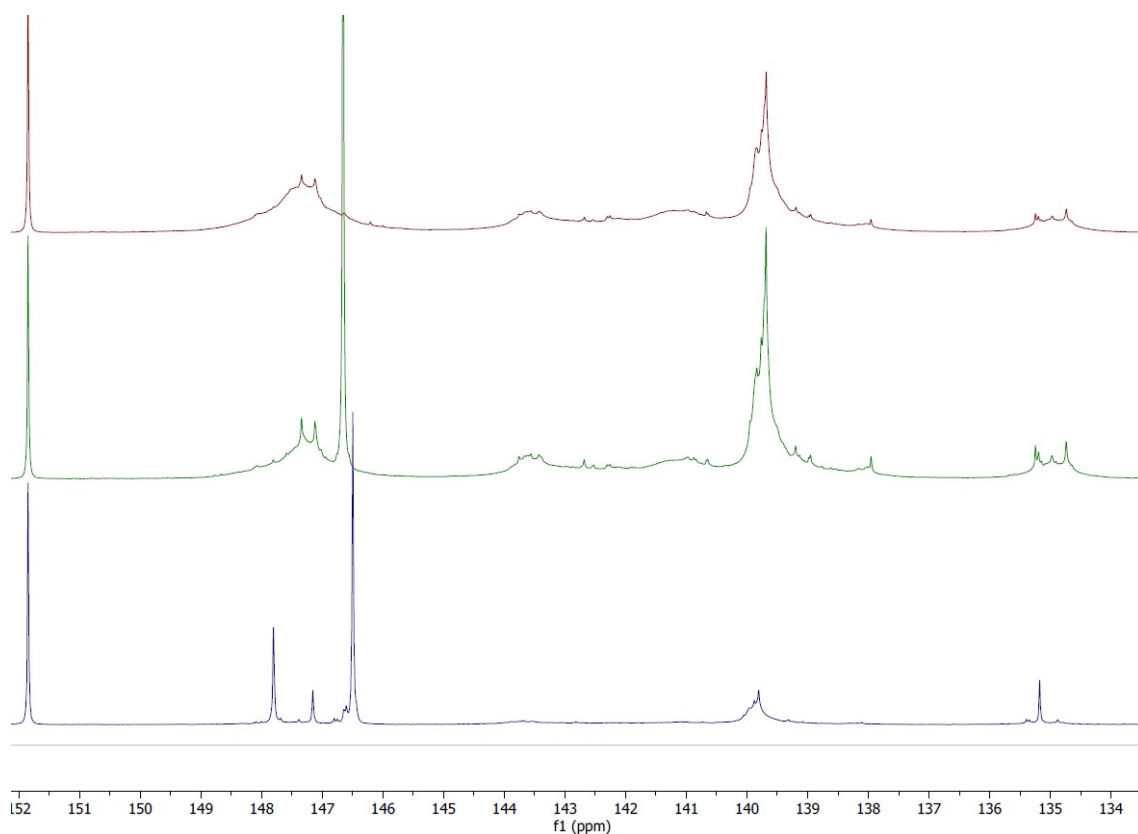
S2. ^{31}P NMR spectra of FKL100



S3. ^{31}P NMR spectra of LPO2

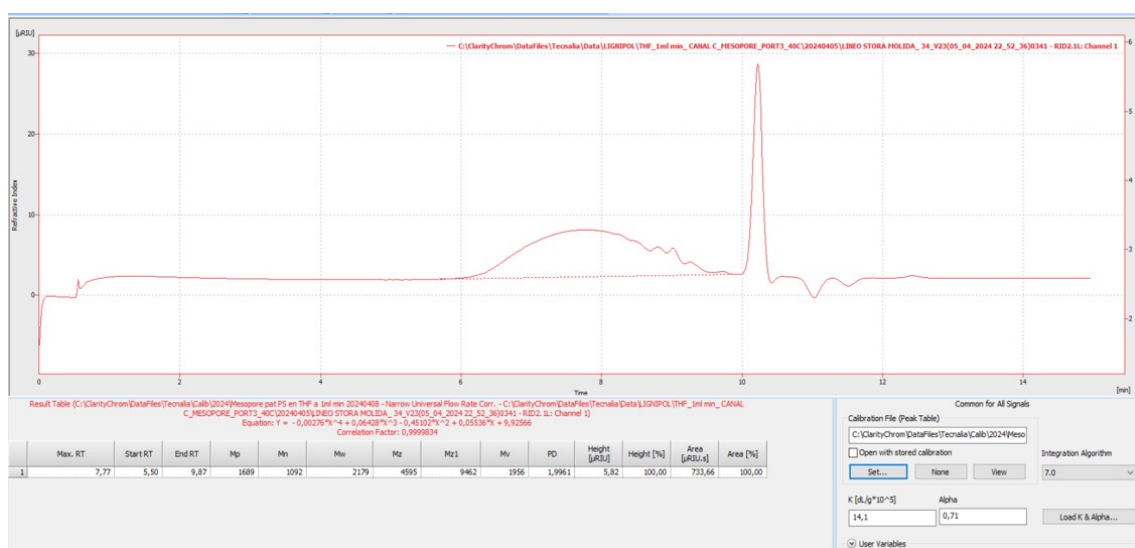


S4. ^{31}P NMR spectra of LPO5

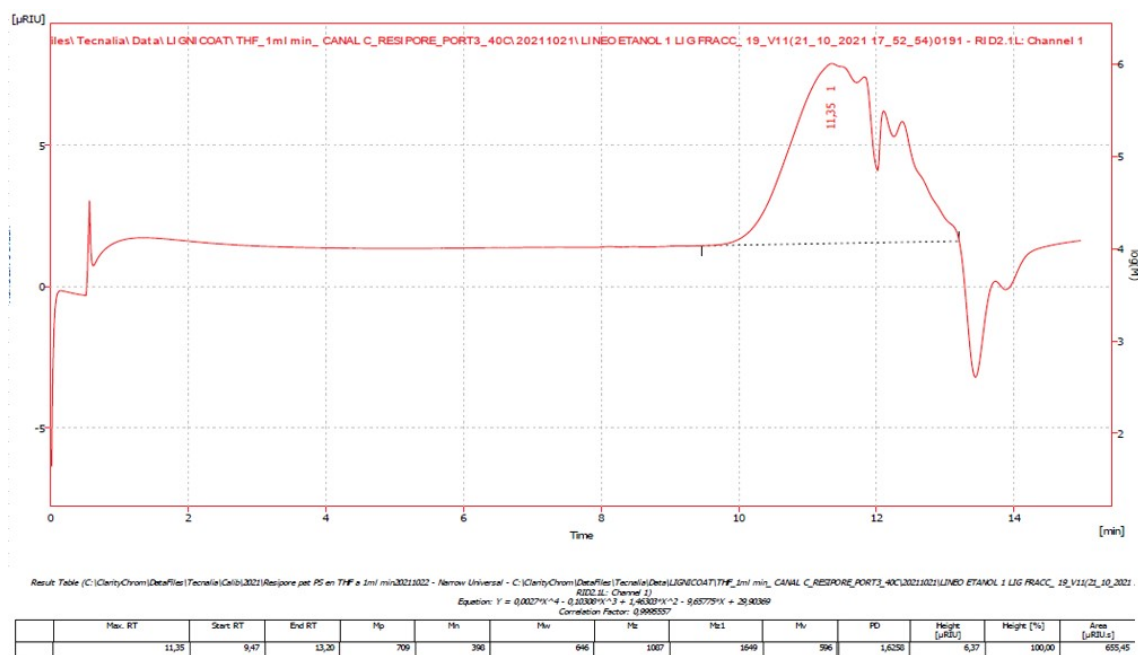


S5. Stacked ^{31}P NMR spectra of Lineo® lignin (top) FKL100 (middle) and LPO2 (bottom).

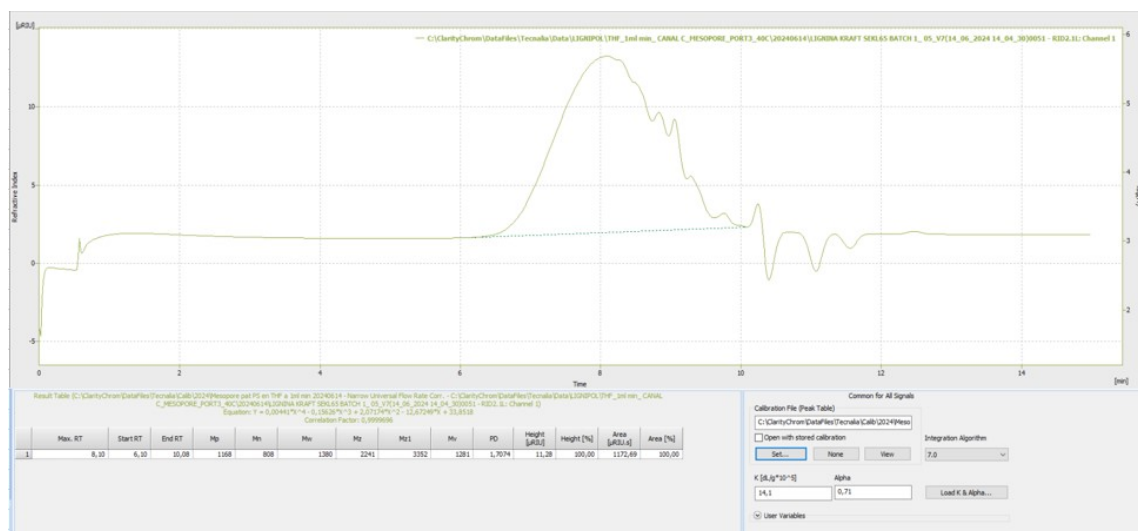
GPC Chromatograms



Lineo® lignin



FKL100



FKL65

Coatings

Scheme of LPO-PUD synthesis

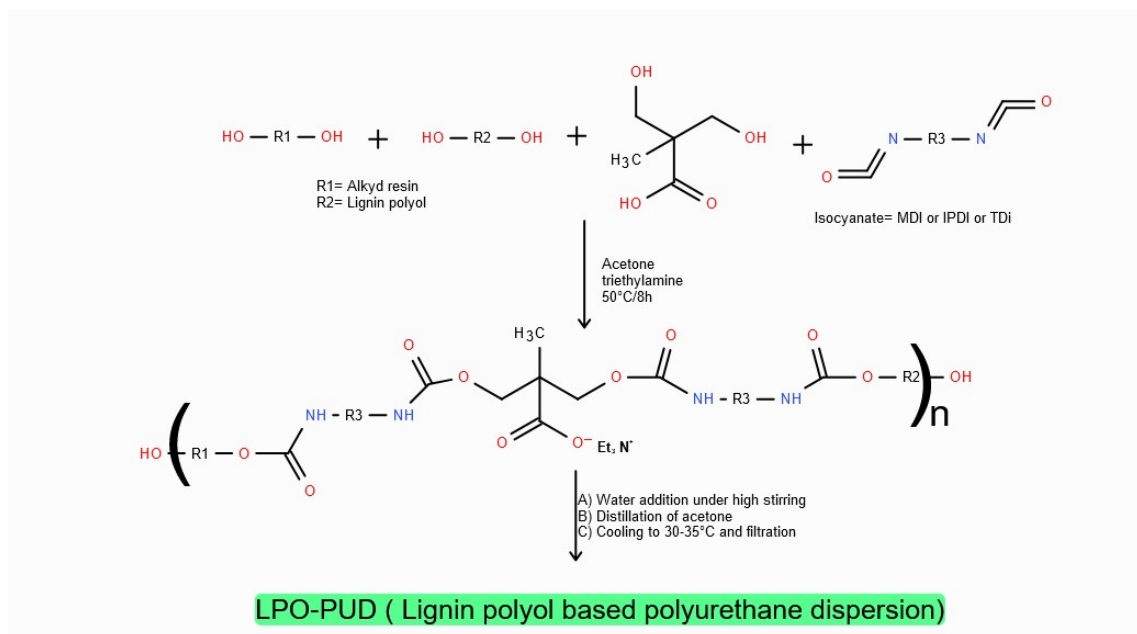


Table S1. Properties of the coatings

	Tack-free time	Adhesion	Impact		Flexibility
	Glass (100μm)	Metal (110μm) – J+7			
PUD (reference)	30 min	Class 0	< 5 cm	Flex	
LPO-PUD	30 min	Class 0	< 5 cm	Flex	