



## Deliverable 3.3

Report on and sample of new developed PGVL-polymer, produced in kg-scale with Mw: 800-10.000 Da

**Demonstration of solvent  
and resin production  
from lignocellulosic biomass  
via the platform chemical  
levulinic acid**

*The project leading to this application has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 720695*

## About GreenSolRes

The need to establish economic and sustainable large-scale operations for the conversion of renewable resources to chemical building blocks is becoming increasingly urgent in the context of climate change and depleting fossil fuel reservoirs. Pathways for manufacturing of bio-based fuels and chemicals have been developed but most of them rely on sugar and starch crops for feedstock. GreenSolRes aims at a sustainable and competitive industrial production of the platform chemical levulinic acid (LVA) from lignocellulosic wastes and residues originating from forestry and agricultural sector. Further, the conversion of LVA into industry relevant building blocks  $\gamma$ -valerolactone (GVL), 1-methyl-1,4-butanediol (MeBDO) and 2-methyltetrahydrofuran (2-MTHF) will take place by new catalytic methods developed during the course of this project. Finally, these chemicals will be upgraded to solvents and resin monomers for the production of high added value adhesives and consumer products. This project was started in September 2016 and has a duration of five years.

### Project Coordinator



### Project Office



### Consortium

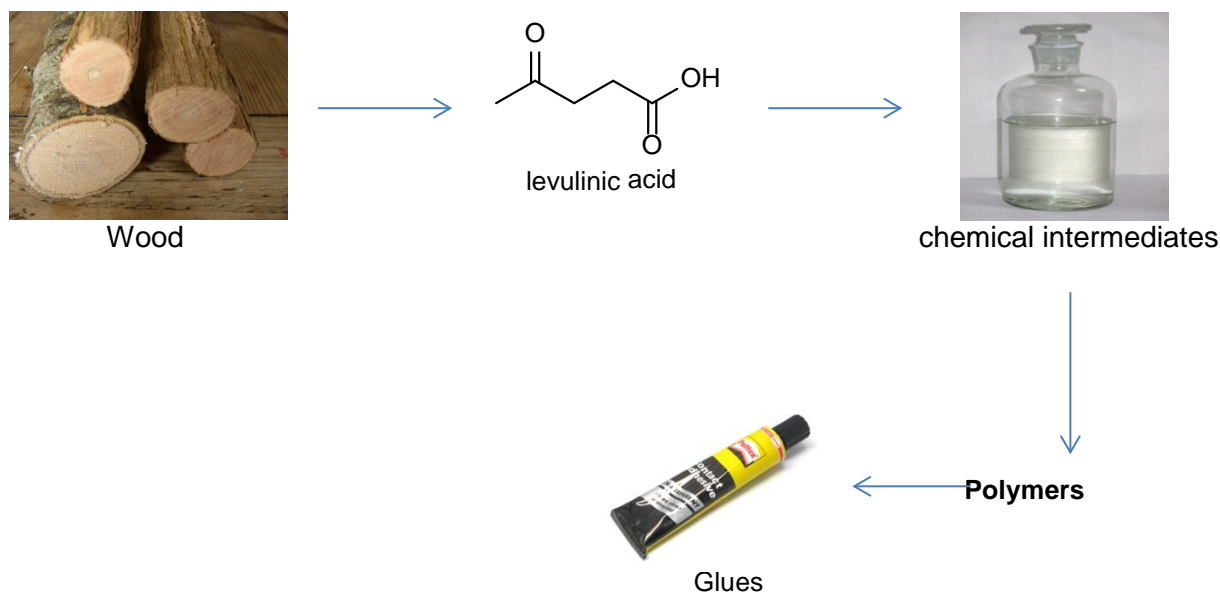


## About this document

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## Publishable Summary



**Scheme 1.** General scheme available for public.

The processes of production of levulinic acid from wood, as well as synthesis of chemicals from levulinic acid are very well established (first 2 steps in the scheme above).<sup>1, 2</sup> The goal of this project was to prepare polymers from these intermediates, which could be used for the production of glues. One kilogram of the polymer was successfully produced (step 3 in Scheme 1) and delivered to Henkel. Henkel is currently examining the use of this polymer in glue formulations.