

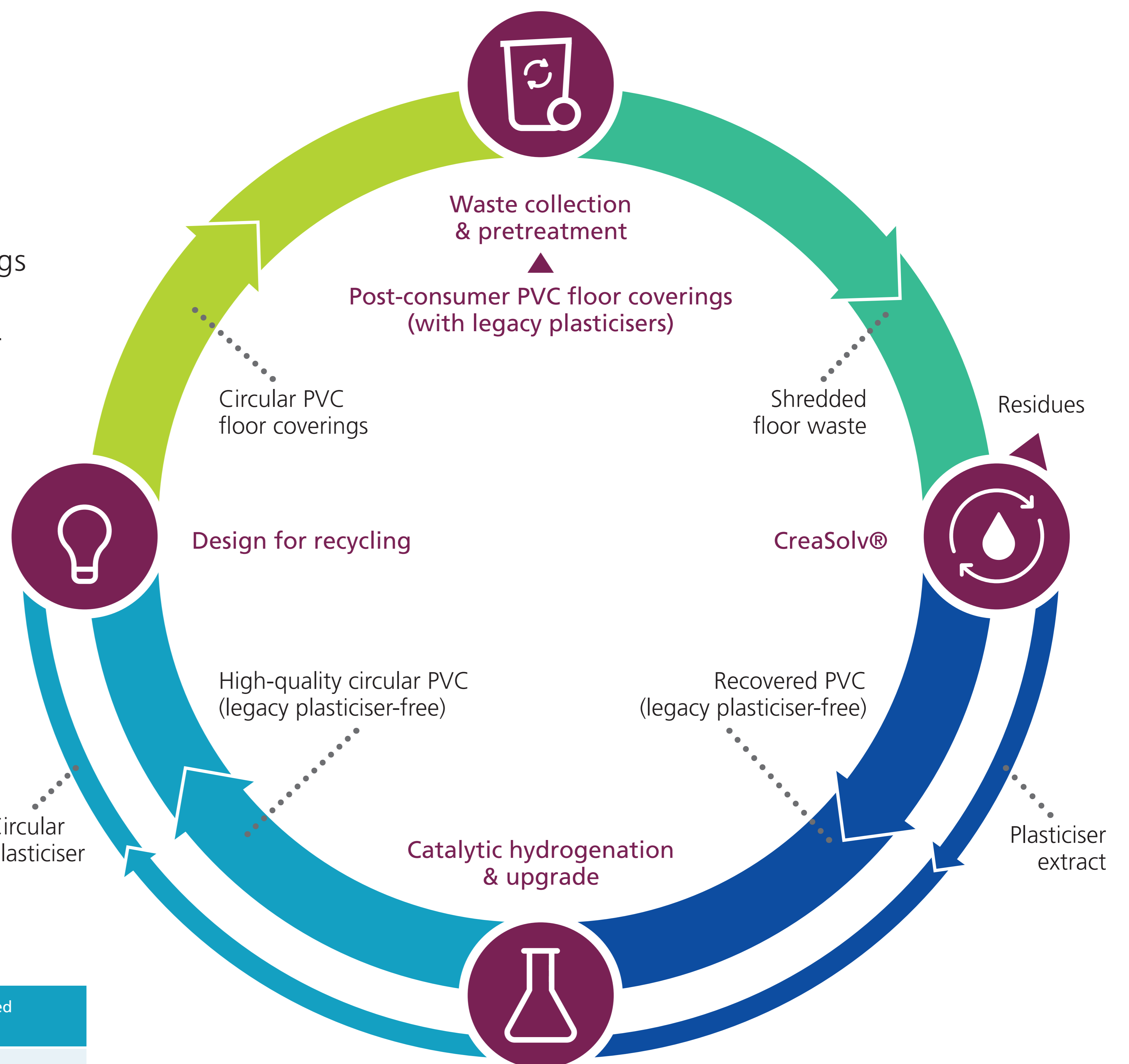
Environmentally friendly recycling of post-consumer PVC floor coverings

Focus of Circular Flooring:

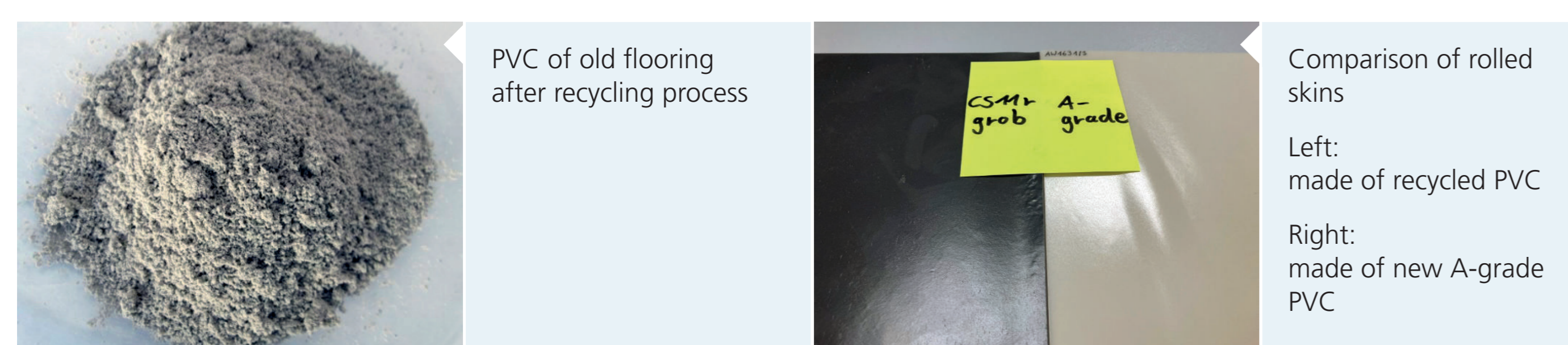
The EU project Circular Flooring is focused on the recovery of a PVC compound from post-consumer PVC floor coverings and the separation of legacy plasticisers in order to create a recycled material for the manufacturing of new PVC floor coverings.

Achieved Project outcomes:

- Market study justified PVC Flooring recycling
- Feasibility of phthalate reduction in PVC recyclate through solvent-based purification
- Feasibility of phthalate hydrogenation
- Process implementation in pilot plant (TRL 6), processing at scale
- PVC recyclate with acceptable properties for reprocessing



| Key performance indicator of rPVC | Ideal limits | Acceptable limits | Achieved limits |
|------------------------------------|---------------------------------|---|--|
| Concentration of phthalates | < 1000 ppm | < 1000 ppm | < 1000 (500) ppm |
| Concentration of remaining solvent | < 1000 ppm | < 1000 ppm | < 1000 ppm |
| Particle shape | Powdery particles, free flowing | | |
| Particle size | < 400 µm | To be evaluated by production tests of demonstrators (~ < 1000 – 750 µm) | 100 - 2000 µm dp 50 = 1000 µm 3 wt% dp < 400 µm 90 wt% dp < 1400 µm |
| Molecular weight | 120.000 – 135.000 g/mol | > 85% of input PVC | 122.000 – 160.000 g/mol |
| K-value | 65 – 70 K | 65 – 70 K | 67 K good, very universal |
| Porosity | 10 – 20% | 10 – 20% Higher values are no problem | 2-48 % 10% in technical scale |



Benefits for the European Society:

- Contribution to establishing a circular economy in the EU
- Reduction in consumption of primary resources
- Removal of undesirable legacy plasticisers from the life cycle and their safe destruction
- Recovery of the inherent value of plastic waste
- Increase in recycling rates of plastic waste
- Reduction of greenhouse gas emissions

PROJECT PARTNERS:



FOR MORE INFORMATION



Further information and videos:
www.circular-flooring.eu

@Circ_Flooring

LinkedIn Group: Circular Flooring – Pioneering Recycling Process for PVC Waste

