



Production of cellulose carbamate using new synthesis method

Cellulose carbamate (CCA) is targeted principally for current viscose using industry (Rayon-fiber and Cellophane-film manufactures).

CCA in nutshell

- CCA is in dry (delivery) state a stable powder that can be stored like any cellulose. The production of CCA and the application is separated totally - industrial logistics is now as usual.
- Application phase is also free of CS₂ emissions.
- No environmental pollution - no occupational hygiene problems

Invention

The invention concerns the production method ("synthesis") of CCA. The new synthesis technology works without any extra processing aids (no need for liquid ammonia or pre-radiation of pulp) using only cellulose and urea as active materials. The synthesis is solvent-free, it is based on standard industrial equipment and the scale-up of production is simple. The efficiency of the synthesis is high and all the residuals can.

Solution benefits

- Replace existing viscose process with CCA and get rid of air and water pollution
- Flexible production – tailored products also in small scale batches
- Replacement of synthetic binding agents by CCA (self adhesive property)
- Benefit of biodegradation of CCA-material vs. synthetic materials
- Benefit of built-in antimicrobial property of CCA in food contact applications
- Use as an ion exchange material in purification applications
- Adding some other active chemicals into cellulose body in synthesis phase (immobilization)



Why partner with VTT?

10 reasons for technology partnering with VTT

1. Key factor in Finland's success story with a track record to prove it
2. Licensing and co-venturing opportunities
3. Portfolio of more than 1,000 patents and inventions
4. New business and product concepts based on strong IP and world class research
5. Combined experience of more than 2,000 motivated researchers in eight focused areas of technology
6. Active member in hundreds of scientific & business communities
7. Excellent track record as coordinator and partner in EU projects
8. Collaboration with TOP 50 R&D companies in Finland
9. Global R&D partnership with 50 Fortune 500 companies
10. Market driven multi-disciplinary solutions

Application areas

- (Rayon) fiber industry
- (Cellophane) film industry
- Sausage casing manufacturing
- Nonwoven industry
- Paper converters
- Filter manufacturing

Additional information

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