



NMP3 - CT - 2004 - 500311

Sustainpack

Innovation and sustainable Development in the Fibre Based Packaging Value Chain

Instrument: **IP**

D5.41. Modified fibres for composite production

Due date of deliverable: 061130 (month 28)

Actual submission date: 070606 (month 36)

Start date of project: **2004-06-01**

Duration: **4 years**

Organisation name of lead contractor for this deliverable: STFIPackforsk AB

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

WP 5.1.2 Physico-chemical modifications

D5.41. Modified fibres for composite production

Objective

The objective of this deliverable is to send physically and chemically modified pulp fibres to Girona for production of PLLA extruded composites.

All samples are hammer milled. The pulp was BTCA-treated prior to milling unless otherwise stated. About 300 g (dry weight) of each sample were produced.

The following samples have been sent:

- Reference spruce sulphate pulp (industrially made kappa 34)
- BTCA-treated sulphate spruce pulp. After swelling in dilute alkali and washed the pulp was treated with 1 % butyl tetra carboxylic acid (BTCA) also containing 1% NaH₂PO₄. The consistency was 10:1 and the soaking time one hour. After soaking the pulp was de-watered and dried at 90 °C. After drying the sample were treated at 150 °C for 30 minutes. The pulp was cross linked after hammer milling.
- BTCA-treated sulphate spruce pulp treated with Octadecyltrimethyl ammonium bromide (CTAB).
- BTCA-treated sulphate spruce pulp treated with Tetraoctadecylammonium tetrafluoroborate.
- BTCA-treated bleached sulphate birch pulp treated with Octadecyltrimethyl ammonium bromide (CTAB)
- BTCA-treated bleached sulphate birch pulp treated with Tetraoctadecylammonium tetrafluoroborate.

The following samples were not hammer milled prior to treatment:

- BTCA tetra- tetraoctylammonium chloride treated BTCA-spruce pulp. The pulp was first treated with 1% BTCA, thereafter with 1 mM tetraoctylammonium chloride.
- BTCA ctab- Octadecyltrimethylammonium bromide treated BTCA spruce pulp. The pulp was first treated with 1% BTCA, thereafter treated with 1 mM octadecyltrimethylammonium bromide.

