

## Inspecting natural rubber analytically

### Requires the production of a homogeneous composite sample

#### Differences in production require an analytical evaluation

Latex the white milky juice of the rubber tree, is sold in liquid or solid form as natural rubber. For the production of the liquid state, the tree juice is thickened and stabilized with ammonia.

For the production of the solid state, the suitable chemicals are added to the juice of the plant and will coagulate. This solid is washed in various ways, dried and molded mostly into thin slabs.

This now shaped and marketable product is extremely elastic; it is considered viscoelastic. The differences in the

production of this commercial product require an analytic evaluation of the crude materials, before they can be used for further processing.



Fig. 1: Rubber slabs prior to comminution

#### Comminution with the Cutting Mill

This crude rubber can only be comminuted manually with cutting tools with great effort. An embrittlement with liquid nitrogen enables the comminution of small amounts with the **Universal Cutting Mill PULVERISETTE 19 large**. Much more elegant and also very suitable for larger amounts are the embrittlement and the grinding of the material along with dry ice with the PULVERISETTE 25.

During the test the sieve with 8 mm square perforation was used. The resulting material has a uniform grain size. An additional comminution to an even smaller degree would be possible.



Fig. 2: Rubber processed with dry ice: This processing prevents the granulate from sticking together and it therefore remains free-flowing or pourable.

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