

## Comminution of latex products in FRITSCH laboratory mills

Latex, the milk-like plant sap of the tropical rubber tree (*Hevea brasiliensis*), was already brought to Europe from America 500 years ago.

A special property of latex is its extraordinary elasticity, which cannot be matched by any synthetic product. Protective gloves made of latex are used in the food industry, hairdressing and by cleaners. However, latex gloves can cause allergies in frequent users. To prevent allergic reactions, latex products were comminuted for further analysis in the Variable Speed Rotor Mill PULVERISETTE 14 *premium line*.

### Comminution in the Variable Speed Rotor Mill PULVERISETTE 14 *premium line*

For the test, the PULVERISETTE 14 *premium line* with the cutting rotor was used. To ensure a better air flow during the comminution process, the small volume Cyclone separator was connected.

The mill was operated at a speed of 20,000 rpm. The latex products were manually pre-shredded down to a feed size of 1 cm.



Fig. 1: Latex pre-cut down to 1 cm

### Second step

The next step was to place the pre-crushed pieces in a suitable vessel and embrittle them with liquid nitrogen N<sub>2</sub>. Sieve shells with trapezoidal perforation 1 mm in the cutting rotor were used. The crushed sample was collected in the collecting vessel and the sample glass of the small volume Cyclone separator. The small volume cyclone was used passively without a vacuum.

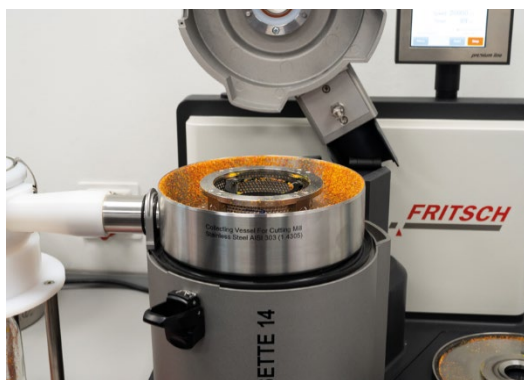


Fig. 2: PULVERISETTE 14 *premium line*



Fig. 3: Sample in sample glass of the small volume Cyclone separator

The trapezoidal perforation of the sieve shells 1 mm used in the cutting rotor were completely residue-free the after comminution and not clogged.

Finally, the latex sample was packed for further use.

**In conclusion**

FRITSCH has suitable instruments in its portfolio for the comminution of latex products. These products can then be analysed in a further analysis for the use of solvents and toxic substances during production.



Fig. 4: Latex sample comminuted with 1 mm sieve shells with trapezoidal perforation

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