

Drug Testing via Hair analysis

Sample preparation with FRITSCH Laboratory Mills

In order to proof the consumption of drugs (cocaine, cannabis products, amphetamines) even after long periods of time, hair is frequently analyzed.

Working with the Mini-Mill PULVERISETTE 23

Hair is dissolved in certain acids and then analyzed with gas chromatography or the mass spectrometer. The dissolving in the acid is accelerated and improved through the enhancement of the specific surface area of the sample. Here the **FRITSCH Mini-Mill PULVERISETTE 23** is used.



Fig. 1: Sample of hair

Comminution process

In a 15 ml steel bowl, 300 - 500 mg hair is weighed in. As a grinding body a 15 mm steel ball is used. After a grinding duration of 5 minutes a fine powder is attained (< 100 µm), which can be used for the following analysis.



Fig. 2: Ground hair sample being ground 5 minutes

Comminution larger sample amounts

For larger amounts or for the grinding of two samples simultaneously, the **FRITSCH Planetary Micro Mill PULVERISETTE 7 classic line** can be used. In a 45 ml grinding bowl made of zirconium oxide or sintered corundum, silicon nitride approximately 0.1-1 g of hair is weighed in and 7 x 15 mm grinding balls are added. The grinding time is 5 - 20 minutes. Afterwards a fine powder is obtained (< 100 µm), which can be used for additional analysis.



Fig. 3: Hair sample after grinding 10 minutes



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