Liver Pate Hardness & Consistency, by Cutting

TVT Texture Analyzer
The TVT Texture Analyzer (Figure 1) offers rapid and objective analysis for different products. The following parameters can be characterized for your product category:

- Hardness
- Consistency
- Stickiness

Both international standard methods as well as customer tailor-made profiles are available.

Figure 1: TVT Texture Analyzer

Scope
- Determination of hardness & consistency of liver pate by single cycle cutting test.

Method Description
The recording of the measurement data commences once the probe reaches the pre-set trigger force. The probe will then cut the sample to a pre-defined distance. After cutting, the probe returns to its starting position.

Calibration
Make sure the instrument is correct calibrated before the measurements. How to perform the calibration can be found in the User's Manual.

Load cell (recommended)  5 – 10 kg

Probe
Wire cutter, 90 mm frame, 0.4 mm wire
P-CW9004, (Figure 2)

Part Number: 67.13.95

Figure 2: 67.13.95 (P-CW9004)
**Profile settings**

**Setting Parameter**

Single Cycle Compression

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample height [mm]</td>
<td>45.0</td>
</tr>
<tr>
<td>Starting distance from sample [mm]</td>
<td>5.0</td>
</tr>
<tr>
<td>Compression [mm]</td>
<td>30.00</td>
</tr>
<tr>
<td>Initial speed [mm/s]</td>
<td>2.0</td>
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<tr>
<td>Test speed [mm/s]</td>
<td>1.7</td>
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<tr>
<td>Retract speed [mm/s]</td>
<td>10.0</td>
</tr>
<tr>
<td>Trigger force [g]</td>
<td>30</td>
</tr>
<tr>
<td>Data rate [pps]</td>
<td>200</td>
</tr>
</tbody>
</table>

**Sample preparation**

Take the samples from their packaging just before testing and place under the probe, Figure 3. Storage and handling of the samples influences the result and should thereby be kept constant. Avoid touching the sample with the hands if possible. The sample can be used for more than one cut, just make sure the cuttings are well separated. Samples with inclusions need more replicates than homogeneous samples.

![Sample set-up](image)

Figure 3: Sample set-up

**Curve Description**

In Figure 4 typical Force-Time curves are illustrated. The maximum peak force shown for the yellow curve is due to an inclusion. The force at target distance or the plateau force if any is here defined as the hardness of the sample. The area is the total work of cutting and a measurement of the consistency. Also the slope, when the wire is cutting through the surface can be of interest.
Data Analysis
The force required to cut the sample to a certain distance is here defined as hardness and can be measured in the units [g] or [N]. Except raw data (force, time and distance) the program also directly provides calculated results such as mean value and standard deviation.