## Task:

<table>
<thead>
<tr>
<th>Application field:</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material:</td>
<td>Plastic Toys (Doll / Clothes / Car / Hairs)</td>
</tr>
<tr>
<td>Feed size:</td>
<td>0-60 mm</td>
</tr>
<tr>
<td>Feed quantity:</td>
<td>50 g (per sample)</td>
</tr>
<tr>
<td>Material specification(s):</td>
<td>Elastic, fibrous</td>
</tr>
<tr>
<td>Customer requirement(s):</td>
<td>&lt; 4 mm (powder is preferable)</td>
</tr>
<tr>
<td>Subsequent analysis:</td>
<td>HPLC High Performance Liquid Chromatography</td>
</tr>
</tbody>
</table>

## Solution:

| Selected instrument(s): | SM 2000 Heavy-Duty Cutting Mill  
As the SM 2000 was discontinued we recommend to use the SM 300 now  
MM 301 Mixer Mill  
As the MM 301 was discontinued we recommend to use the successor model MM 400 |
| Configuration(s):       | SM 2000:  
Standard hopper;  
Bottom sieves of stainless steel, square holes 4 mm  
MM 301:  
Screwable Grinding Jar 25 ml of stainless steel,  
Grinding Ball 1 x 20 mm of stainless steel |
| Parameter(s):           | SM 2000: 750 rpm  
MM 301: Amplitude 30/s |
| Time:                  | 15-20 min. (per sample) |
| Achieved result(s):    | 1. Pre grinding < 4 mm  
2. Fine grinding 300 - 500 µm |
| Remark(s):             | The fine grinding was done under pre cooled conditions.  
Cooling the filled, closed jars in liquid nitrogen before grinding |

The application report is based solely on the processing of the available sample material in the indicated amount. No legal claims shall be derived from this test report.  
Subject to technical modification and errors.  
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**Recommendation:** For sample preparation of different plastic toys the Cutting Mill SM 100 and the Mixer Mill MM 301 are suitable under the above mentioned conditions.