Global Standard

Powder Tester
For the Powder Characteristic Evaluation

HOSOKAWA MICRON CORPORATION
R & D division / Shuji Sasabe
Carr’s method

Dr. R. L. Carr tested over 2800 different dry materials.

Thanks to Dr. Carr’s method and Hosokawa’s developments we now are able to express the flow- and floodability of dry materials into reliable values.
Powder Tester model PT-X

- The 9th version of POWDER TESTER since 1968
POWDER TESTER is widely used all over the world. Over 3,500 units of POWDER TESTER have been delivered to industries in 40 years.

Powder Tester is involved in more than 5,000 patent applications only in Japan.
1. Scope

1.1 This test method covers the apparatus and procedures for measuring properties of bulk solids, henceforth referred to as CARR Indices.

1.2 This test method is suitable for free flowing and moderately cohesive powders and granular materials up to 0.0 mm in size. Materials must be able to pour through a 7.0 + or − 1.0 mm diameter funnel outlet when in an aerated state.

1.3 This method consists of eight measurements and two calculations to provide ten tests for CARR Indices. Each individual test or a combination of several tests can be used to characterize the properties of bulk solids. These ten tests are as follows:

1.3.1 Test A: Measurement of CARR Angle of Repose
1.3.2 Test B: Measurement of CARR Angle of Fall
1.3.3 Test C: Calculation of CARR Angle of Difference
1.3.4 Test D: Measurement of CARR Loose Bulk Density
1.3.5 Test E: Measurement of CARR Packed Bulk Density
1.3.6 Test F: Calculation of CARR Compressibility

Prepared by Dr. C.C. Huang
**Basic Concept of Carr’s Evaluation**

<table>
<thead>
<tr>
<th>Compression</th>
<th>Aerated Bulk Density</th>
<th>Packed Bulk Density</th>
<th>Compressibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shear Property</td>
<td>Angle of Repose</td>
<td>Angle of Collapse</td>
<td>Angular Difference</td>
</tr>
<tr>
<td>Others</td>
<td>Cohesiveness</td>
<td>Dispersibility</td>
<td>Uniformity</td>
</tr>
</tbody>
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Flowability

Floodability
Features

- Angle measurement
- User friendly Touch panel operation
- Bulk Density
- Electronic control
- CE conformity
- RoHS correspondence
- Shortening of measurement time