

GROUND COFFEE SPECIFICATIONS ANALYSIS

The table below is our analysis and summary of the coffee industry's grinding practices.

Developed as a result of an industry survey in the 1940's. The lower portion is our distillation of current industry standards and reflects a certain adaptation to modern brewing methodology.

The upper chart of the table refers to the CBC (Coffee Brewing Center) historical standards, which were

| GRIND | E.P. | REGULAR | ADC | DRIP | FINE | VENDING | "EUROPEAN" | | | |
|---|---|-----------------|-------------------|--------------------------|-----------------------|--------------------|-----------------|-----------------|-----------------|-----------------|
| | | | | | | | COARSE | MEDIUM | FINE | |
| Other Names | Regular | Um | Autodrip Silex | All-Purpose Universal | Silex Food Service | Single Cup Vend | NS | NS | Espresso | |
| Historical CBC Specifications | No(s) 10/14 Sieves | NS | 33% | NS | 7% | 0% | NS | NS | NS | |
| | No(s) 20/28 Sieves | NS | 55% | NS | 73% | 70% | NS | NS | NS | |
| | Pan | NS | 12% | NS | 20% | 30% | NS | NS | NS | |
| | Particle Size (μ) * | NS | 1020 | NS | 840 | 720 | NS | NS | NS | |
| | Avg. Sieve Mesh (Opening) | NS | 16 (0.0390") | NS | 20 (0.300") | 24 (0.278") | NS | NS | NS | |
| | Avg. Particle Dia. (Cells) † | NS | 26 | NS | 21 | 18 | NS | NS | NS | |
| | Avg. Particle per gram | NS | 1200 | NS | 2200 | 3500 | NS | NS | NS | |
| | Exposed Granule Area (CM ²) | NS | 46 | NS | 57 | 67 | NS | NS | NS | |
| Actual North American Coffee Industry Norms | No (s) 10/14 Sieves | 35% | 27% | 17% | 8% | 2% | N/A | N/A | N/A | |
| | No (s) 20/28 Sieves | 42% | 60% | 65% | 65% | 62% | 10% | 48% | 22% | |
| | No. 35 Sieves | N/A | N/A | N/A | N/A | N/A | 35% | N/A | 58% | |
| | No. 48 Sieves | N/A | N/A | N/A | N/A | N/A | 35% | N/A | 65% | |
| | Pan | 13% | 13% | 18% | 27% | 38% | 20% | 52% | 20% | |
| | Particle Size (μ) * | 1050 | 925 | 825 | 775 | 645 | 400 | 600 | 480 | |
| | Avg. Sieve Mesh (Opening) | 16 (0.0390") | 18 (0.0360") | 20 (0.0328") | 22 (0.0300") | 26 (0.0242") | 40 (0.0165") | 28 (0.0232") | 32 (0.0195") | 42 (0.0138") |
| | Avg. Particle Size (Cells) † | 26 | 23 | 21 | 19 | 16 | 10 | 15 | 12 | |
| | Avg. Particle per gram | 1,100 | 1,600 | 2,300 | 2,800 | 4,800 | 20,000 | 6,000 | 12,000 | |
| | Exposed Granule Area (Cm ²) | 45 | 50 | 58 | 62 | 74 | 118 | 80 | 102 | |

Notes: All sieve mesh sizes refer to Tyler screens.

* μ = Micron = 0.001 mm
† 40 Micron per Cell

NS No Specification
N/A Not Applicable
(screen not used)

MODERN PROCESS EQUIPMENT, INC.

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SIZE CONVERSION TABLE

| U.S. Mesh | Tyler Mesh | Inches | Microns |
|-----------|------------|--------|---------|
| 4 | 4 | 0.1850 | 4699 |
| 5 | 5 | 0.1560 | 3962 |
| 6 | 6 | 0.1310 | 3327 |
| 7 | 7 | 0.1100 | 2794 |
| 8 | 8 | 0.0930 | 2362 |
| 10 | 9 | 0.0780 | 1981 |
| 12 | 10 | 0.0650 | 1651 |
| 14 | 12 | 0.0550 | 1397 |
| 16 | 14 | 0.0460 | 1168 |
| 18 | 16 | 0.0390 | 991 |
| 20 | 20 | 0.0328 | 833 |
| 25 | 24 | 0.0276 | 701 |
| 30 | 28 | 0.0232 | 589 |
| 35 | 32 | 0.0195 | 495 |
| 40 | 35 | 0.0164 | 417 |
| 45 | 42 | 0.0138 | 351 |
| 50 | 48 | 0.0116 | 295 |
| 60 | 60 | 0.0097 | 246 |
| 70 | 65 | 0.0082 | 208 |
| 80 | 80 | 0.0069 | 175 |
| 100 | 100 | 0.0058 | 147 |
| 120 | 115 | 0.0049 | 124 |
| 140 | 150 | 0.0041 | 104 |
| 170 | 170 | 0.0035 | 89 |
| 200 | 200 | 0.0029 | 74 |
| 230 | 250 | 0.0024 | 61 |
| 270 | 270 | 0.0021 | 53 |
| 325 | 325 | 0.0017 | 43 |
| 400 | 400 | 0.0015 | 38 |

Modern Process Equipment, Inc.

Performing a Grind Analysis Utilizing the Ro-Tap Method Modern Process Equipment, Inc. • Chicago, Illinois

I. Supplies Required:

A) 600 g. x 0.1g. scale (typical)



B) Ro-Tap screens required:

Regular/Drip Grinds (800 micron average)

| Tyler | U.S. |
|-------|------|
| 10 | 12 |
| 14 | 16 |
| 20 | 20 |
| 28 | 30 |
| Pan | Pan |



Fine Grinds (600 micron average)

| Tyler | U.S. |
|-------|------|
| 20 | 20 |
| 28 | 30 |
| 35 | 40 |
| 48 | 50 |
| 60 | 60 |
| Pan | Pan |

C) Sample pans

D) Ro-Tap screen shaker Model No. RX-29.



*Note: Equipment for (B) and (D) above may be purchased at: W.S. Tyler 8570 Tyler Blvd., Mentor OH 44060
Telephone No.: 800.321.6188*

II. Procedure:

A) Insure the screens are clean. This should be accomplished by using an oil cutting solution and allowing the screen(s) to dry properly.

Note: On grind tests at 800 micron-type grinds, screens should be cleaned every four (4) tests. On grind tests at 600 micron-type grinds, screens should be cleaned after every test.

B) Weigh approximately 100 g. of ground coffee into the sample pan and pour into top screen of stacked pans.



C) Allow to shake on Ro-Tap shaker for five (5) minutes.



