

APPLICATION BULLETIN

BACKGROUND/ CHALLENGE

Pigments are a crucial component when producing high quality cosmetic products including lipsticks, blushes, eye shadows, and nail polishes. In order to bring out the best in pigments, they need to be milled down to a smooth, silky texture with even color distribution (hue, depth/strength, brightness) and refractive index.

A cosmetics company needed to mill iron oxide pigments for their new line of product. They needed a machine capable of creating pigment particles with consistent color uniformity, gloss, opacity, and texture. In addition, the company required a machine that could achieve the finished product despite the stickiness of the iron oxide and allow for quick and easy cleaning so that contamination between different colors could be avoided. They found their solution in Sturtevant's Micronizer Jet Mill.



STURTEVANT[®] PERFORMANCE

The cosmetics company worked with Sturtevant who suggested a 4-inch Micronizer Jet Mill based on their processing capacities requirements. The Micronizer reduced the iron oxide particles down to a size of 5 microns or less with consistent particle size distribution. In part because of the consistent particle size distribution, the final product had the required uniform color and smooth texture.

The Micronizer also allowed for quick and easy cleaning so that the company could process different pigments without concerns over cross-contamination. The quick and easy cleaning is possible due to the Micronizer's open manifold design that results in less downtime. To counteract the iron oxide's sticky nature during processing, Sturtevant recommended installing non-stick Lubriguard steel liners which are specifically designed for materials like iron oxide pigments.

EQUIPMENT RECOMMENDATIONS

MICRONIZER[®]

MILL	ENERGY Requirements / ¹ Compressed Air /Gas SCFM (SCMH)	² bHP	CAPACITY LBS/HR (KG/HR)
4"	55 (93.5)	13	2 - 40 (.9 - 18)
8"	130 (221)	31	10 - 100 (4 - 45)
12"	260 (442)	62	3 - 250 (13 - 113)
15"	350 (595)	83	50 - 300 (22 - 136)

¹-Volume of free air at 60°F (16°C), 14.7 psi compressed to 100 PSIG. Includes air consumed by feed injector nozzle.

²-Approximate HP necessary to generate 100 PSIG compressed air.

Larger sizes are available, for a complete list see the Micronizer Product Bulletin.

SUMMARY

The cosmetics company was able to use the 4-inch Micronizer to prepare a variety of iron oxide pigments for use in their products. The Micronizer's open manifold design eliminated concerns over cross contamination between different pigments and resulted in less down time so more pigments could be processed. The custom liners allowed for the desired results despite the iron oxide's stickiness. Overall, the Micronizer increased the customers production and saved labor costs.