Talc is a mineral composed of hydrated magnesium silicate with the chemical formula $\text{H}_2\text{Mg}_3(\text{SiO}_4)_2$ or $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$. It is sectile and very soft, with a hardness of 1 (Talc is the softest mineral on Mohs’ scale). It has a specific gravity of 2.5 - 2.8, a waxlike or pearly luster, and is translucent to opaque. Its colour ranges from white to gray or green and it has a distinctly greasy feel.

A coarse grayish-green form of talc is called soapstone and has been used for stoves, sinks, electrical switchboards, etc. Talc finds use as a cosmetic (talcum powder), as a lubricant, and as a filler in paper manufacture.

Talc is used in baby powder, an astringent powder used for preventing rashes. Most tailor’s chalk is talc, as is the chalk often used for welding or metalworking. Talc is also used as food additive or in pharmaceutical products.

High quality equipment is only one part of successful material processing. NETZSCH-CONDUX finds the optimum process conditions for every material, investigating all grinding parameters such as pressure, temperature and nozzle design to provide the highest quality product with the lowest possible energy assuring maximum profits for our customers.
Size Reduction of Talc: In most cases industrial mineral manufacturers do not consider jet mills to be an economical alternative for material processing. However, talc is one exception, with high added value and a growing market. The specifications are also getting more strict leading to the advantage of a higher technology process.

A fluidized bed jet mill has gas nozzles positioned around the mill housing. The high velocity gas jets from the nozzles accelerate particles up to 540 m/sec. Size reduction is a result of inter-particle collisions. The internal air classifier controls the maximum particle size by allowing only particles of the desired fineness to exist the mill. The oversize particles are re-circulated back to the grinding chamber.

NETZSCH-CONDUX has worked extensively on process development to reduce specific energy and provide a steeper particle size distribution (D99/D50) and less oversized material than any of the competitive processes.

Our patent pending e-Jet™ System allows the use of a single stage compressor resulting in lower installation costs and more importantly, lower operating costs. The patented ConVor Constant Radial Velocity classifier wheel design also helps to reduce energy use, maintenance time and spare parts costs and inventory. All NETZSCH-CONDUX Jet Mills, regardless of the fineness, require only one classifier.

The use of e-Jet™ can be applied to most industrial minerals with the same benefits.