

Now, here is a topic that is easy to swallow: how drug companies make the pills we take. It's a carefully monitored process in which quality control is paramount. So, stand by: we're going to give you a taste of your own medicine, or at least what goes into making it. Medications are essential in the treatment of illnesses. It begins by a grinding process where the active ingredient in a tablet or pill is ground and mixed with a binding agent. The quantity of the ingredient needed to be ground is transported to the dryer in this container. Like all the other equipment, this container is made of stainless steel so as not to contaminate the product. The temperature of the dryer and the airflow are programmed with this interface. The granulation has to be dried at around 100 or 120° before being shaped into the desired tablet form. Molding of the pill is done by this press, which crushes the powder. The press exerts a pressure varying between 2 and 5 tons. Here is how the molding is done: the press magazine distributes the powder in molds made of steel discs. Two stampers, one above and the other below crush the powder and form the pill. Here the press operates at full capacity. It can produce 5,000 pills per minute. Quality testing is carried out on 5 pills every 15 minutes. Their hardness is verified with this apparatus, in which jaws crush it with a force varying between .3 and 3 psi or pounds per square inch. The pills must now be coated so that they will not crumble. A coating solution made of water and coloring pigments is used. This is the coating unit: it can hold 350 pounds of pills. Three plastic tubes strategically positioned will spray the solution onto the pills in motion. The quantity of dry pills to be coated is put into the unit. Then the door of the coating unit is carefully closed. A drum turns inside the unit tumbling the pills. Then, nozzles spray the solution in the form of a mist that quickly dries, preventing the pills from sticking to one another. This spraying operation lasts 40 minutes. Here, we can compare pills: on the left, are those made only of powder, while on the right are the spray-coated ones. The finished pills move down a shoot to enter a counter, prior to filling bottles. They are lined up in grooves to make filling easier. The quantity of pills to be placed into bottles is controlled by this automated unit connected to the counter. In this instance, 500 pills are poured into each bottle. This plant also makes capsules where the ingredient is not crushed but encapsulated in a gelatin casing. The distributor places the two halves of the capsules in the proper position for filling, with the wider half situated above. The top and bottom portions of the capsule are separated. The lower half is then filled with powder. When well filled, the two halves of the capsule are joined together. The completed capsules are then ejected from the filling unit. Then, via centrifugal force they are positioned for the packaging process. The weight of each capsule is verified by this counter. Each capsule must have the precise weight. The final step is packaging. A sheet of transparent PVC is heat embossed, forming an impression to receive capsules. Then a pre-glued aluminum foil sheet is adhered to the back side, sealing everything in. This plant turns out millions of pills and capsules every year.