

Packaging Pills

"Just a spoonful of sugar helps the medicine go down, in the most delightful way."

That bit of lyrical, pharmaceutical advice fell on the ears of millions of movie-goers around the world from the delightful voice of Julie Andrews, the "magical nanny", Mary Poppins, in the film of the same name.

Perhaps sugar does help some of us swallow our medicine, but modern capsule technology is adding its own important twist to pill-taking, a vital component of world-wide health care.

Numerous studies have shown that patient compliance, or rather lack of it, is a major problem in bringing about effective cure or control of illness, ranging from blood pressure to heart disease. This is a particular problem with many chronic diseases where the illness is "silent", largely without symptoms.

Another major problem is the danger of older patients, sometimes confused, often taking several drugs, mixing up their prescriptions. This may lead to their taking too much of one and little or none of another.

Some people simply have trouble swallowing pills, notably those in tablet form – with or without sugar.

And finally, the spoon, for all its other uses, is not always the most accurate method of dispensing medicine, unless it is full.

Hence, the gelatin capsule, which many doctors see as the choice form of oral drug for prescriptions of everything from powders to granulates, tablets or pellets.

Capsule Technology International of Windsor, Ontario, is emerging as a major manufacturer of hard gelatin capsules and the sophisticated machinery required to produce them. Capsules are made of pure gelatin, and titanium dioxide is used as a pigment for production of opaque capsules. The company is also heavily involved in technology transfer and the setting up of turnkey plants relating to the manufacturing of both soft and hard gelatin capsules.

Recent developments have also made possible the filling of capsules with medications in both paste and semi-liquid form. Capsule colouring, an important fac-

tor in helping to avoid confusion in drug-taking, is available in single or double tones as well as opaque and transparent.

Capsules, which must meet physical standards of size, wall thickness, moisture-content and customer colour specifications, are checked for possible microbial contamination and can be produced at an hourly output of 40 000 to 45 000, depending on capsule size.

After final inspection, all capsules undergo sterilization with ethylene oxide (12 per cent), which penetrates the capsule walls.

Imprinting of capsules with name or trademark is also available.

Recent studies have demonstrated a 15 per cent annual increase in capsule products and company officials believe that the paste or semi-liquid medication will eventually permit hard gelatin capsules to replace many soft gelatin types, thus opening up a large new market for the hard capsule industry.

The firm provides both building design and three months of training in operation of machines as well as in laboratory procedures related to raw material testing and product assays. It also provides training on site after the machines have been installed.



A capsule-manufacturing machine.