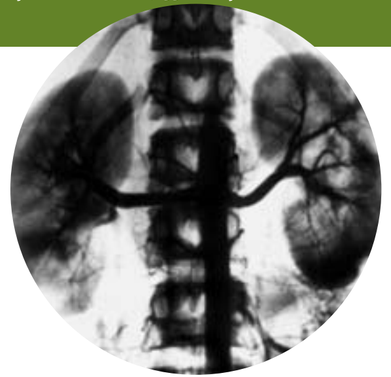
PRODUCTS AND APPLICATIONS

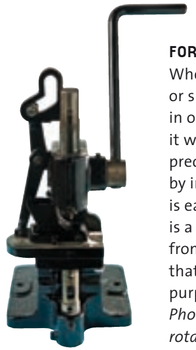
Pharmaceutical products are produced for many purposes. Five examples serve to illustrate the different areas of application: beginning with the familiar pain pills and antibiotics, on to the agents that treat `incurable diseases´ and ones that, like the birth control pill, modulate the bodily processes to fit a person's needs, and concluding with diagnostic agents that help to make visible the workings of a living body.

Photos: Kidney contrast medium, 1931 / X-ray with a contrast medium



ACTIVE SUBSTANCES IN PEOPLE

An excellent illustration of the history of a pharmacy product is provided by the story of the discovery of hormones as active substances in people in the 1920s and the subsequent development of the birth control pill. Central to this story is the extraction of hormones from different raw materials. In addition, different contraceptive methods and the public's expressed opinions concerning the birth control pill since its introduction in 1961 are presented.



FORMULATION OF MEDICATIONS

Whether as a pill, tablet, ointment or suppository – the form is important in order to get a medication to go where it will be most effective. The tablet form predominates: it can be mass-produced by industrial presses, stores well and is easy to ingest. In the exhibition, there is a collection of tablet presses ranging from hand driven to industrial machines that are available for demonstration purposes.

Photos: Hand press from 1920 and a rotary press from 1984

ACTIVE SUBSTANCES FOR HUMANKIND

It takes a long time and costs a lot of money before a medication can be developed. Once achieved, this axiom applies: no effect without a side effect. This, of course, then evokes legal questions about the safety of medications. One media station prompts you to ask personal questions about misuse of medication or to take part in a clinical study. Various opinions can also be put to the test there: for example, the continuously discussed moral question whether a conflict of interest exists between an individual's health needs and the profit motive driving the pharmaceutical industry.

Chemical and pharmaceutical industry

Deutsches Technikmuseum Berlin
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Tuesday – Friday 9am – 5:30pm
Saturday/Sunday 10am – 6pm
Closed Mondays

The exhibition came into being in cooperation with the Schering Foundation, which is dedicated to promoting science and culture with the main focus on the natural sciences and contemporary art.

The companion volume costs € 19.95 in the museum shop (only in German)
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Information about accompanying events can be found under www.sdtb.de and www.scheringstiftung.de

Guided tours can be booked under fuehrungen@sdtb.de

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Chemical and pharmaceutical industry

Photos: Kirchner/SDTB, Schering Archiv/Bayer AG, Schmidt-Thomé

PILLS UND PIPETTES

The chemical-pharmaceutical industry as exemplified by Schering

Our modern civilization seems to come out of a lab. Practically all materials that we deal with and that are all around us contain chemically researched and developed components. Even in our own bodies there is hardly any element that has not been analysed in a laboratory with the goal of maintaining or recovering health or even enhancing performance. Chemistry is always and everywhere around us, every day for our entire lives.

Since the 19th century the chemical-pharmaceutical industry has been more influential in shaping today's society than any other. Individual companies setting up their own research laboratories played an important role in this evolvement. They found that profits could only be increased through improved processes and innovations. The product innovations were then sold in the market and this then encouraged further chemical discoveries.

Pills and Pipettes relates the cultural-historical meaning of the chemical and pharmaceutical industries, using the Berlin company Schering as an example. Topics like laboratory work, industrial production, product variety and the question of the application and safety of products are described. Molecules tell the fascinating stories of their discovery at listening stations.

SCIENCE AND INDUSTRY

The reciprocal nature of research goals and company interests has been the determining factor in the collaboration between science and industry since the 1930s. A great example of this is the "Working group Butenandt-Schering" which not only influenced the work of the Nobel Prize winning chemist Adolf Butenandt (1903–1995) but consequently led the Schering Company to specialize in hormone preparations. *Photo: Adolf Butenandt in the laboratory*

LABORATORY WORKSPACE

From the simple glass pipette to the large machines, all the devices in a laboratory serve the same purpose: to discover and analyze existing compounds and to create new ones using the knowledge gained in the process. Historic and modern devices illustrate the types of work done in a laboratory.

PLANT PROTECTION

Plant protection illustrates the useful but also problematic utilization of chemical products. The problem of pest infestation and abatement is shown by the example of the potato beetle. It was indeed possible to protect the potato as a food resource by means of insecticides but the problem of pest infestation could never be completely eliminated.

PYROTECHNIC AND PHOTO CHEMICALS

Pyrotechnic chemicals for fireworks and chemicals for photography are examples of the broad range of products emanating from the chemical industry. A media station invites you to try your hand as a pyrotechnist by building fireworks in a colour of your own choosing and then igniting it.

THE BERLIN LOCATION

Since the 19th century, Berlin has been an important site for the fields of chemistry and pharmacy. The educational facilities for chemists, pharmaceutical research labs and industrial production joined forces in one location. Then, as now, the large number of research facilities and company headquarters in Berlin attest to this fact.
Photo: Map of Berlin showing the locations of research and production facilities

FROM RAW MATERIAL TO INDUSTRIAL CHEMICAL

Camphor is a good example for showing the progression from raw material to industrial chemical. In order to replace a scarce raw material with a plastic – for example, the ivory in a billiard ball – a "softener" was necessary to give it formability. One such agent is camphor, which is a constituent element of celluloid. The visitor can follow the path leading from natural material to synthetic camphor to the eventual mass production process.
Photo: Pine trunk with resin extractor and turpentine oil for producing synthetic camphor

ELECTROPLATING

Wire-rimmed glasses, circuit boards and chrome bumpers: electroplating has a practical as well as an aesthetic side. Chemicals make it possible to apply metal as a protective coating against environmental influences, as a glossy coating for a beautiful appearance and as a conductive coating in the microelectronic field.
Photo: Circuit board in a cell phone