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Verification of a Treaty on a Chemical Weapons Ban: Chances and Limits of Process Monitoring */

The verification of non-production of chemical weapons and control of permitted production are key elements of a chemical weapons convention. The purpose of this paper is to show the original role of process monitoring in the chemical production industry and to give an industrial view of the chances and limits of process monitoring under a future Convention on chemical weapons.

PROCESS MONITORING IN CHEMICAL PRODUCTION

Any chemical production process is decisively influenced by mainly two factors:

- Equipment;
- Physical/chemical variables such as:
  - . Flows
  - . Composition of raw materials
  - . Temperature/pressure profiles.

The equipment is normally dedicated to manufacture a specific chemical compound (single-purpose plant) or a certain category of products (multi-purpose plant). Application and suitability of different production facilities are not further investigated here.

The other factors defining the process have to be tightly controlled to ascertain that the desired product is effectively produced with the required quantity. Control in this sense means:

- Act, based on process know-how (= feedforward control; for example predefined sequence of feeding raw materials);

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