
Ad Hoc Committee on Chemical Weapons

UNITED STATES OF AMERICA

The Use of Instruments in Chemical Process Monitoring
or Demilitarization of Chemical Weapons

SUMMARY: This paper provides an overview of some current, commercial chemical process monitoring practices, how they relate to Chemical Weapon Convention requirements to monitor the production of chemical warfare agents and their precursors, and the similarities to chemical weapon destruction and disposal operations required by the Convention. It also presents a number of factors that should be considered in selecting or designing instruments for use in monitoring chemical processes under the prospective Chemical Weapons Convention. It is important to note the presence of inspectors will also be required to effectively verify that provisions of the treaty are being met.

INTRODUCTION: The Chemical Weapon Convention negotiations envisage that all extant chemical weapons and chemical warfare agent will be irreversibly destroyed. In addition, they prohibit the new production of such chemicals by prescribing that facilities used to produce those chemicals be shut down and subsequently destroyed. Further, diversion of permitted production of key precursors for those agents and of other lethal chemicals is also prohibited. All these functions must be performed in such a way that there are no detrimental effects on the environment. To verify that such provisions are fully complied with, it is likely that it will be necessary to use on-site inspectors who will use a variety of instruments to monitor production and destruction processes. In some cases, such monitoring will be aimed at confirming that production activities have been shut down, and in others the focus will be on measuring various parameters of permitted production or destruction activities. This paper highlights only one type of available monitoring means - instrumentation. It is important to realize that this is only one of several methods that will be used to monitor declared stockpiles and facilities under the convention. Another means of monitoring is the frequent presence of human inspectors which have unique capabilities to perform as an adaptable and flexible resource which can interact with other parts of the monitoring system.