

For instruments to be used on-site portability/transportability is a very important requirement. The set-up time and ease of calibration after transportation also become important.

Structure elucidation requires powerful instruments to enable speedy results. HRMS, IR and high field NMR are the most important instruments for this task. Instruments required for structure elucidation are also suitable for research purposes, e.g. preparation of databases.

C. Reference Standards

In order to secure the general uniformity and reliability of the analyses performed by the inspectors the need to have internationally agreed and validated operating procedures, data bases and reference standards was stressed.

1. Standards used for basic tuning of the instruments

These standards are normally provided by the manufacturers of the instruments e.g. perfluorokerosene for MS, ethylbenzene for NMR and polystyrene for dispersive IR.

2. Sensitivity tests

Sensitivity tests with spectrometric techniques are part of the normal basic tuning procedures. For chromatographic techniques they have to be performed for each detector type by including a specific compound for each detector type in the sensitivity test mixture.

3. Testing of instruments after basic tuning (calibration)

The testing can be performed with non-toxic calibration standards which resemble CW agents. The test mixture should reflect the difficulties each technique has with certain agents e.g. VX. When a combination of GC and spectrometric techniques are used the combination of instrumentation as a whole should be tested with the same test mixture. ¹⁾

1) Calibration of instruments is a technically critical issue which should be done by the inspectors themselves.