Objective

The awareness for the toxical impact of some chemical forms of elements justifies that a great deal of analyses be performed by control laboratories. As an example, organotin compounds, in particular trisubstituted species (e.g. tributyltin (TBT) or triphenyltin (TPhT)) are very toxic to marine biota, e.g. shellfish. These compounds are used in antifouling paints (TBT) or as herbicides (TPhT) and are widespread in the environment and monitoring in various environmental matrices (water, sediment, biota) is hence currently performed by control laboratories. Legislation within the European Union, e.g. on marine pollution, requires that the determinations are of proven quality which justifies the preparation of representative certified reference materials (CRMs). Another example is the risk associated to toxic lead species, e.g. trimethyllead which has accumulated in urban dust, owing to the use of Pb-containing gasoline; although this use is constantly decreasing, the ubiquity of the Pb-species in the environment will justify their monitoring for the next 10 years which also call for available CRMs.

The project aimed to certify a range of reference materials for their contents of organotins (mussel and freshwater sediment) and trimethyllead (artificial rainwater and urban road dust).

The phase (1) of the project was concluded in 1996 by the successful certification of trimethyllead in urban dust (CRM 605) which is now available for sale (EUR Report 18046 EN, 1997). The certification of trimethyllead in artificial rainwater was not possible, owing to an instability of the compound after 36 months storage; the results are described in the EUR Report 18025 (1997).

The phase (2) was successfully concluded in 1997 by the certification of mono-, di- and tri-butyltin in the mussel candidate reference material (CRM 477) which is available for sale (EUR Report 17921, 1997); instability detected for phenyltin compounds hampered the certification of these compounds to be achieved.

The phases (3) and (4) were carried out in 1997 and the interlaboratory study showed that the state-of-the-art was good enough to contemplate certification of butyl- and phenyl-tin compounds in sediment. The certification campaign will be conducted in 1998.

The project consisted in (1) the certification of trimethyllead in artificial rainwater and urban road dust (materials already available), including the evaluation of results and writing of the certification reports, (2) the certification of organotin compounds in a mussel candidate reference material (already prepared), including the evaluation of results and writing of the certification reports, (3) the preparation of a test material of freshwater sediment for an interlaboratory study, (4) an interlaboratory study on organotin compounds in freshwater sediment, (5) the preparation of a large batch of sediment material, (6) the certification of organotin compounds in the freshwater sediment candidate reference material, including the evaluation of results and the writing of the certification report.