Suggestion for definition of "key CW precursors"

A tentative suggestion for a definition of "key CW precursors" follows below. The Swedish delegation is open for comments and suggestions to improve the definition, which reads as follows:

"Key CW precursor" is the starting reactant in a one pot chemical synthesis forming a super-toxic lethal, other lethal, or other harmful chemical, which determines the main characteristics (class of compound, toxicity etc.) of the chemical formed, when the reaction is taking place:

1. in a chemical weapon warhead or other disseminating device for chemical weapons, immediately before the dissemination of the final, toxic product, i.e. the chemical warfare agent,

2. in a production facility producing super-toxic lethal, other lethal, or other harmful chemicals.

Purpose and quantity criteria

It is clear that one would also in the case of "key CW precursors" have to resort to the "purpose criterion", possibly together with the "quantity criterion" insofar as occasionally some "key CW precursor(s)" might find use for "peaceful purposes". To our knowledge, this is very rare with respect to organophosporus compounds, i.e. "key CW precursors" of nerve agents. It would thus not constitute any serious obstacle to treat the "key CW precursors" to super-toxic lethal chemicals in the same way as these chemicals to be subject to the same verification provisions under a convention.

The purpose and quantity criteria should, of course, in the same way apply also to such "key CW precursors" as could form "dual-purpose" chemicals.

Toxicity criterion

With respect to the applicability of the toxicity criterion to "key CW precursors" this should not be applied to these chemicals themselves, since there is no correlation to their toxicities and those of the final products. One could choose to let the toxicity criterion relate to the mixture containing the chemical warfare agent as an end product of the "one pot synthesis". One would then have to consider the fact that this final mixture would contain less of the warfare agent because of the presence of some other chemicals also formed during the reaction, which should lessen the toxicity as compared with the pure agent. On the other hand, the mere presence of other chemicals than the warfare agent in the final mixture might either enhance or diminish the toxicity. In the case of nerve agents the toxicity range would, however, refer these mixtures to super-toxic lethal or other lethal chemicals. It is sometimes presented as an unacceptable difficulty that toxicity tests on reaction mixtures, whether emanating from the "binary technique" or from an ordinary production process, would not result in sufficiently exact results to allow a clear cut dedication of the reaction mixture to one or another of the types of chemicals, (super-toxic lethal, other lethal and other harmful chemicals) to which the toxicity criterion applies. The technical solution to that problem is of course to analyse chemically the reaction mixture containing the formed chemicals. Once these formed chemicals are identified, samples of them could be tested for their toxicity, if such values had not already been established by agreed standardized toxicity tests. Such tests would lead to sufficiently exact results.