

Phosgene is a widely used raw material in the manufacture of synthetic plastics, insecticides, paints, and pharmaceuticals. Being easily liquified, industrial phosgene could be diverted relatively easily for use in war should a nation decide to employ it, without necessarily requiring sophisticated delivery systems.

4. Among the blood gases developed during World War I, hydrogen cyanide (hydrocyanic acid) is a valuable intermediate in the manufacture of many organic chemical compounds, including benzyl cyanide, acrylonitrile, and dyes. Its world production volume is believed to be in excess of 1 million tons annually. Hydrogen cyanide is currently being produced by the United States, 6 Western European countries, Japan, the USSR, and Communist China. Another blood gas which also finds widespread commercial use is cyanogen chloride. It was used in limited quantities in World War I and is presently used as a fumigant and industrial intermediate.

5. Mustard gas, which was the most effective chemical weapon developed in World War I, is produced very simply from ethylene-oxide. On a worldwide basis, over one million tons of ethylene-oxide are produced annually for use, inter alia, in manufacturing detergents and disinfectants. The improper disposal of commercial mustard gas intermediates by industrial users has led on several occasions to casualties among fishermen and bathers, and has resulted in charges that mustard gas itself was the cause of injury.

6. The everyday production of commercial materials relevant to chemical warfare in the United States, as in other industrially developed countries, is quite substantial. For example, there are 19 locations for phosgene production and 11 facilities for hydrogen cyanide production in the United States. These produce in total approximately 350,000 tons of phosgene and 200,000 tons of hydrogen cyanide per year for commercial purposes. Of course, if one looks back into the commercial production of basic raw materials (for example, ethylene, sulphur, and chlorine, which are ingredients for mustard gas), the problem is much larger and the facilities more extensive.

7. Chemical agents of the World War I type, even though they may be effective against an unprepared enemy, are considered by those who have studied chemical weapons to be much less effective than the more recently discovered "nerve agents." The G and V families of organophosphorus nerve agents were discovered in 1936 and 1955, respectively, in the course of research on new commercial pesticides. These agents are similar to commercial organophosphorus pesticides, widely used in agriculture, which have, in fact, caused human deaths in cases of misuse. Both the nerve gases and