TO A PROBLEM OF DETOXIFICATION OF IRRITANTS: REACTION OF REDUCTION OF ADAMSITE BY ARSINE

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The article deals with the problem of the technology of destruction of adamsite. Adamsite can be reduced according to the following evacuation:

$$C_6H_4NH{\cdot}AsCl{\cdot}C_6H_4 + AsH_3 \xrightarrow{N_2} (C_6H_5)_2NH + 2As + HCl.$$

The arsenic hydride evacuation process, for example, can be shown as being the following:

$$As_2O_3 + 6Zn + 6H_2SO_4 \xrightarrow{N_2} 2AsH_3 + 6ZnSO_4 + 3H_2O.$$

Reaction was carried out when molecular ratio adamsite : arsenic hydride was 1:1,2, without stirring; the temperature was maintained of 220 to 230°C for 1 hour. During reducing operation nitrogen was used. Then the reaction products were cooled. The resulting metallic arsenic was separated by filtration and solid wastes (the organic substance diphenylamine) were analysed. Adamsite was successfully destroyed. In the solid wastes adamsite was not found.