Powerful Alkylation Agents

Alkylation agents, especially alkyl halides and sulfonates, are widely used in chemistry. Certain powerful alkylation agents present specific hazards, which must be highlighted. This group includes, but is not limited to, methyl iodide, methyl triflate, allyl bromide, benzyl bromide, methyl bromoacetate, ethyl chloroacetate, chloroacetone and phenacyl bromide. It should be assumed that analogs of these compounds will present similar hazards.

Toxicity and Carcinogenicity

While specific toxicity data may be obtained from the SDS and elsewhere, it may be assumed that all of these compounds are both toxic and carcinogenic.

Lachrymators

A number of these compounds, including benzyl bromide, phenacyl bromide and the esters of haloacetic acids, are potent lachrymators. This means that exposure to their vapour will make you cry. This can be extremely painful and sufficiently violent to cause temporary disability.

Precautions

These chemicals should only be used in a well ventilated fume cupboard. The user should wear appropriate PPE: safety glasses, lab coat, long pants, covered shoes and gloves. Excess reagent (e.g. residue on syringes) should be destroyed by soaking in aqueous ammonia for several hours before cleaning. Users should be prepared to deal with any spill.

Prepared by

Approved by