

Safe Working Procedure for Lithium Aluminium Hydride

Lithium Aluminium Hydride (LiAlH_4 , LAH, lithal) is a widely used reducing agent. It is usually supplied in the form of a fine grey powder. Lithium aluminium hydride reacts vigorously with water, acids and alcohols and can easily catch fire.

Before using LiAlH_4 , alternatives, such as sodium borohydride and lithium borohydride, should be considered.

Precautions

Lithium aluminium hydride should never be allowed to come into contact with water except under carefully controlled conditions, otherwise there will be a fire. Reaction mixtures containing LiAlH_4 may be quenched by slow dropwise addition of water, preferably under a stream of nitrogen gas.

Reactions involving LiAlH_4 should be carried out under an inert atmosphere. As these reactions often generate hydrogen gas, a flow of inert gas is preferred to a static atmosphere. Addition of LiAlH_4 to organic solvents, such as THF, or *vice versa*, can be surprisingly exothermic. LiAlH_4 should be added portionwise to the solvent, under an inert gas, with appropriate cooling.

Small quantities of lithium aluminium hydride should be destroyed by quenching with cold iso-propanol. Do not add any LiAlH_4 to tissue paper.

The following personal protective equipment (PPE) is to be used:

Safety Glasses, Labcoat, Latex gloves, Long pants, Covered shoes

If LiAlH_4 dust is a problem, a surgical mask should be worn.

Prepared by,



Approved by,


