

Safe Working Procedure for Catalytic Hydrogenation

Catalytic hydrogenation is frequently used in organic synthesis, especially for the reduction of alkenes and alkynes.

Precautions.

Hydrogen is a highly flammable gas. It should only be handled in a well ventilated fume cupboard in the absence of any sources of ignition. Any gas cylinder employed should be closed as soon as possible after use.

A particular hazard with hydrogen is that the reaction with oxygen is catalysed by the transition metal containing powders (palladium, nickel etc) that are frequently used in these processes. Hydrogen and air must **never** be allowed to mix in the presence of the catalyst. When the reaction is set up, the catalyst in the reaction flask must be blanketed with nitrogen (or another inert gas) before hydrogen is introduced. At the end of the reaction, the flask must be flushed with nitrogen (or another inert gas) before the flask is opened.

Filters containing the catalyst should never be sucked completely dry.

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

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

Prepared by,



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