

## EIS, Jan 1987 Science Teacher Fined!

Members may have seen reports in the press about a recent court case. For the first time, a science teacher has been prosecuted (and fined £500) under the Health and Safety at Work Act. The teacher concerned had been preparing hydrogen gas, intending to use it to reduce copper oxide. The procedure was a standard one, in which zinc was reacted with dilute sulphuric acid (with a little copper sulphate added as catalyst). The gas was bubbled through water (to wash it), and then concentrated sulphuric acid (to dry it) before being passed over copper oxide. There would be a considerable volume of air in this apparatus, and the teacher started heating the copper oxide before all of it was flushed out by hydrogen. An explosion resulted. No safety screens were in use (although available in the adjacent preparation room), nor was eye protection being worn (although available in the laboratory).

Hydrogen preparation is well-known to be hazardous. There are several references in the ASE's publications *Safeguards in the School Laboratory* and *Topics in Safety*, as well as the DES *Safety in Science Laboratories* and the CLEAPSE/SSSERC *Hazcards. The School Science Review* (December 1979) carried an article on "Safer Ways of Making Hydrogen", and in March 1982 there was a specific reference to the hazards of, and alternatives to, the

use of concentrated sulphuric acid as a drying agent.

There is thus abundant information available about the hazards of this experiment, and a number of suggestions for improving its safety. The teacher, of seven years experience, in failing to adopt safety precautions, also ignored the guidelines of his own employer, the local education authority. The prosecution was for failure to adopt reasonable safety precautions.

Some science teachers may feel apprehensive that they too may be fined if an accident occurs in their lesson. They need have no such fear provided that they follow elementary safety precautions, such as the wearing of eye protection and the use of safety screens. They should also remember to check from time to time that such equipment has not become badly scratched or damaged, perhaps dangerously so. If teachers consider that the provision of safety equipment is inadequate, then they should immediately inform their employer through the usual channels. The Health and Safety Executive, when prosecuting, made it clear to the court they did not wish to inhibit practical science in any way. The teacher was *not* fined for having an accident, but, knowing that there was a risk, for failing to use the safety equipment available. He pleaded guilty.