Ion exchange resins: explosion risk

When a dry ion exchange resin is soaked in water it expands appreciably, and in a confined space may exert a considerable pressure, as the following extract from a member's letter indicates:

'A 50 ml glass burette was filled with the resin to act as an ion exchange column. When hard water was added and the burette tap opened, the water very slowly progressed down the column. When it had reached about half way down, the burette exploded, showering resin granules and slivers of glass over an approximate ten feet radius. All that remained of the burette was a section approximately six inches long, from the top, and a similar section from the bottom....'.

We reported a similar incident in *EiS* April 1976, and the problem is well known in industries that use ion exchange resins. The problem can be avoided if the resin is thoroughly soaked in a beaker of water before being loaded into the column. Care should also be taken to prevent the resin from drying out. If it does dry out (as had happened in the incident described above, as a result of the unusually hot weather last summer) then the dried resin must be removed from the column, and re-soaked before use.

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