



Rutherford Laboratory

Technical Leaflet

E5

INDUSTRIAL CHEMISTRY SECTION

The Section provides general chemical services in the fields of water treatment, chemical analysis and material selection and development.

Engineering materials are examined to assess their suitability in the specialised environments in the field of nuclear physics, for example: nuclear irradiation and very low temperatures.

Post irradiation physical and mechanical measurements are undertaken on materials and components for use in accelerator fields.

Methods of high level irradiation dosimetry are also studied, some areas have to use irradiation sensitive materials and it is important that they are adequately maintained.

Hydrogen targets and other cryoscopic devices frequently demand new materials and techniques and the Section develops such materials and techniques for the production of highly stressed components. (Fig. 1)

The many high purity water circuits within the Laboratory require a frequent routine test programme to maintain the high quality required. Any corrosion problems arising in these circuits are fully investigated.

The examination of storm water and other effluent arising within the Laboratory is undertaken to ensure that it is free from radioactivity or other harmful agents prior to discharge. Chemical identification techniques are applied to many unknown substances, such as corrosion products, and contaminants in oils, lubricants and vacuum systems.



FIGURE 1. EXAMINATION OF HYDROGEN TARGET IN RESIN LAB.