Production of Kr81m Generators

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Generator Concept

- **Zirconium Phosphate binds Rb81 f solution**
- **When air flows through, only Kr81r released**

Zirconium phosphate column

Generator Lead Shield

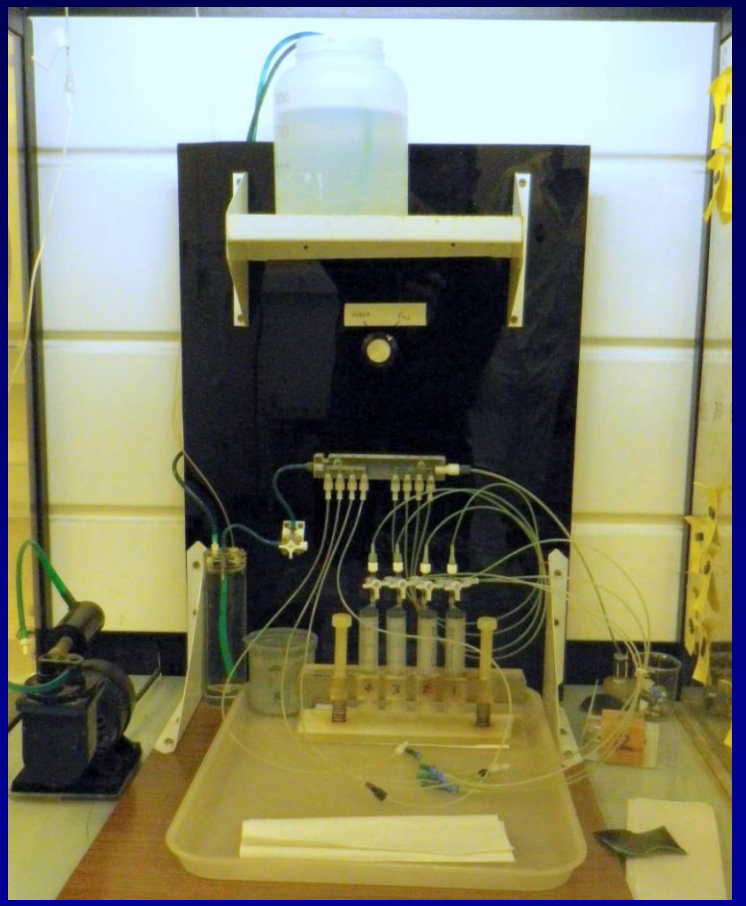
- **Rb81 has high energy gammas**
- **Therefore need thick lead shield**
- **Heavy!**
- **Never dismantle – high doses**

Manufacture Process - Summary

- **Liquid Rb81 solution passed through column**
- **Rb81 uptake onto Zirconium Phosphate**
- **Water wash**
- **Kr81m gas measured (on each generator)**
- **Final Water Wash**
- **Air flow to dry column**
- **Surface dose rate / TI measured**

Generator Process

- Returned Generators visually inspected
- Checked for leaks (separate wash rig)
- Then ready to re-load
- Generators used a maximum of 20 times
- Generators also removed if uptake drops
- Refurbished with new Zirconium Phosphate



Generator Loading

- **Rb81 solution piped directly into stock pot from cyclotron**
- **Pumped through generator**
- **Then water wash to remove any unbound Rb81**
- **Air flow to dry column and measure Kr81m output**

Generator Loading – (2)

- **Automatic load cycle with dial-up control of volume of stock passed through the generator**

- **After load cycle, generator transferred to a final wash cycle**

Generator Dispatch

- **Roller transfer to Dispatch area**
- **Final air dry process**
- **Surface Dose Rate Measured, Transport Index, and transport tin secured.**

- **Dispatch paperwork printed**

Dispatch

- **Transport labels attached**
- **Courier pick-up**
- **Delivery normally before 9am, sometimes very early!**