The Royal College of Pathologists
Pathology: the science behind the cure

Object 36: Paraffin wax

What is it?
Paraffin wax is a by-product of the distillation of petrol. It is solid at room temperature but melts at between 40 and 70°C, depending on the exact combination of compounds.

History
Paraffin wax was discovered by German chemist Carl Reichenbach in 1830 and is produced by cracking mineral oil. It has many uses including candle-making, the rind of cheese such as Edam, crayons, reducing friction on snowboards, adding shine to sweets and chocolate, in beauty therapies and paint balls.

Pathology
In histopathology, paraffin wax is used for embedding surgical specimens. Hot liquid wax is dispensed into a small tray and allowed to cool. A specimen is placed into the cooling wax in the desired orientation. Once solidified, the block of paraffin with the embedded specimen is transferred to a microtome, an instrument with a very sharp knife, which cuts 3-4 micron sections of tissue for examination under the microscope.

Find out more
Visit your local pathology department to see how paraffin wax is used to prepare sections for diagnosis. Find out if there's a lab open day near you on the RCPath website.