

## Hazard Alert

### Handling and melting of paraffin wax in histology practice

A report was recently received regarding the use of microwave ovens to heat paraffin wax. While paraffin wax is a relatively stable and seemingly innocuous substance without a dangerous goods classification, it is quite combustible and will burn with intense heat, giving off black acrid smoke with a high carbon monoxide content.

Because of the difficulty in controlling the heating rate in a microwave oven, **paraffin wax should only be heated to melting point in a water bath with a controllable electric heat source.**

Direct heating over an electric mantle or in a microwave oven could easily produce temperatures of the same order as the flash point (180oC) thus greatly increasing the likelihood of ignition. Since the melting point is about 60oC and the boiling point is 370oC, uncontrolled heating could easily push the temperature of the molten liquid into this zone. Obviously, heating with a bunsen burner or other gas flame would also be highly likely to produce a fire and must be expressly forbidden.

The wide difference between the melting and boiling points also has significance for safety in the handling of the wax in the molten state. While contact with barely liquid paraffin wax (at say 65oC) is unlikely to produce very severe burns, contact with the same liquid at higher temperatures could be very hazardous. With water bath heating, the temperature can be more effectively controlled and both the risk of fire and of contact burns greatly reduced.

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*Associate Director, Occupational Health & Safety Unit*