



## *Peet and Charlotte van Schalkwyk*

13 Van Graan Street  
Potchefstroom, 2531  
+27826686835  
Peet.vanSchalkwyk@nwu.ac.za  
peetvanschalkwyk@gmail.com  
<http://www.peetvs.co.za/>

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system, without the written permission of the authors.

## *Introduction*

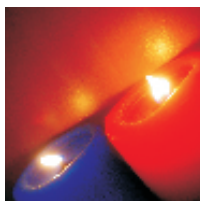
This book describes a simple way to melt wax – four times faster than most other methods. The equipment is inexpensive. The method is very safe and very little heat is wasted.

This book is meant for those who want to make candles as a hobby or in a small business or even for those who only want to learn more about candles.

When we started we didn't know how many problems we would encounter.

To name a few: candles that stick in the moulds, cracks in candles, bubbles when they are dipped, moulds that leak, wicks that drown. But we went ahead and addressed the problems as we encountered them. Many books and internet pages about candle making were of little use. In the process we invented many new procedures which we want to share with others. So this book is about how to make candles in a simple, fast, cheap, safe and profitable way.

*Peet en Charlotte van Schalkwyk  
2006, Potchefstroom, South Africa.*



## Types of wax

### *Chinese wax (fully refined) or Nippon or Terhell*

These waxes melt at about 60°C. Their oil content is very low (less than 0.5%). They are more expensive and of a higher quality than the semi-refined waxes. They are not white but have a wax-like semi-transparent appearance. Add C80 to mix to prompt crystallisation so that the candle becomes whiter. Use these waxes to make decorative candles.

### *Chinese wax (semi-refined)*

This wax has a high oil content (1.5%) and melts at 54/56°C. It is not suitable for candles that have to be dipped because bubbles will appear under the layer of dip-wax. However the high oil content prompts the wax to crystallize and thus to shrink more, making it easier to remove from the moulds. Wax that has crystallized will be whiter in appearance.

### *C80 (a Product of Schümann Sasol)*

C80 melts at 80°C and has a low oil content of 0.3%. Adding 3% - 10% to other waxes will facilitate crystallization. The candle shrinks and becomes whiter.

### *H1 (a Product of Schümann Sasol)*

H1 melts at 100°C and has an oil content of 0.1%.  
Dip cotton rope in H1 to manufacture a wick that will not drown when the candle burns.

### *Micro-wax*

½% - 1% of micro-wax will inhibit the forming of cracks during winter.

### *DCW1*

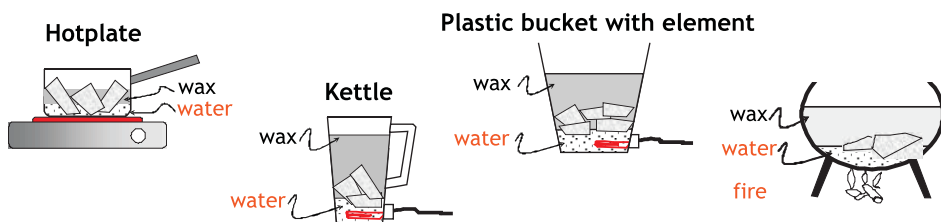
This is a “ready-made wax for candles” from Sasol.

## The melting of wax in water

You can melt wax in a number of ways. But the superior way is to melt it in boiling water, which is a very safe, fast and economical method.

The wax will melt four times faster than any other method. It is very safe because the wax will always be at a temperature lower than the boiling temperature of water, which is 100°C at sea level. The melting apparatus is also very cheap.

You can use a kettle or urn (boiler) or any other kind of holder. The liquid wax will float on top of the water because water and wax don't mix. Scoop the wax with a jug and fill up the candle moulds.



Be careful when using the water melting method.

When you reheat the wax in the smelter later on, make sure that the solid wax on top of the water has escape holes for the steam underneath to prevent an explosion of steam.

Make sure that there is always enough water in the smelter.

## When wax overheats

When wax overheats, gasses will form inside the candle and will later escape by making small cracks in the candle.



This picture shows a candle made from wax that was overheated. The candle was then dipped. The bubbles on the surface are due to gasses that escaped from the inside of the candle.

When you melt your wax using the water melting method, the wax will not overheat because the water limits the maximum temperature to the boiling point temperature of the water.

## Wick

For thin candles (20mm), prime your wick in melted wax before you insert them in the moulds. In the case of bigger candles where the wick will stand in a dam of molten wax, the wick will have a tendency to collapse and drown. Prime the wick in a wax with a higher melting point. H1 (100°C) will do the job. The wick will then stay upright.



## Moulds

### Pillar candles

Use PVC (class 16) or aluminium tubes of the required sizes to make moulds. Do not use the white tubing used for electrical or plumbing purposes because wax will stick to the sides, making it very difficult to remove the candle from the mould.

Cut the tube to size and make the ends smooth. Use a lid that is a little wider than the tube for the bottom of the mould. Drill a hole for the wick in the centre of the lid. Cast your candle.



## Candles in permanent moulds

A very simple way of making candles is to cast the candle in a suitable holder, as shown in the pictures.



## Ball-shaped candles

Use acrylic ball-shaped lampshades, tennis balls or aluminium moulds for ball-shaped candles.



A tennis ball was cut in half to produce this candle.

An acrylic lampshade was cut in half. Masking tape was then used to stick the two halves together. While pouring the wax, cool the mould by lowering it into water. This will not only ensure that the masking tape stays put, but will also speed up the cooling process.



These two aluminium halves of a mould were stuck together with masking tape and then lowered into water as the wax was being poured.



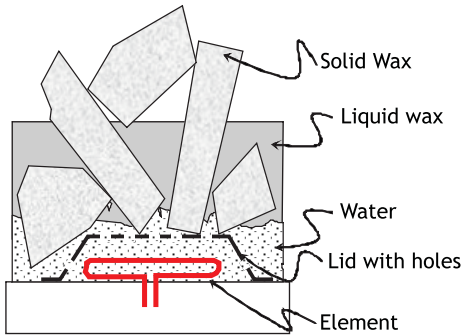
## How to get going

Get hold of:

- Jugs
- Scissors
- Knife
- Electric kettle or Urn
- Prestik
- Prepared Wick
- Thermometer
- Scale
- Pliers
- Paint scraper
- Clips
- Moulds
- Wax

## Urn (Boiler) smelter

Urn (Boiler) smelter



## Tools

You will need these tools for candle making: A scale (10kg) to weigh wax; plastic jug to pour the wax into the moulds; hammer for breaking up slabs of wax; paint scraper to remove spilled wax from the table; scissors to cut wick; small sieve to remove dirt from the molten wax in the boiler; knife to trim the candle; clips to hold the wick in place in the mould.

