

DENK'S BRIEF
GUIDE TO

CANDLES



DENK



Denk's brief guide to candles

Candles and wax have been part of our life since we developed our *Waxburner*. Customers often ask us which candles we recommend. There is no simple answer to this question. That's why we have written this little guide to candles. We hope that it will give anyone who is interested a little background knowledge.

Jutta Denk Fabian Paul

What is a candle?

A candle consists of wax and a wick that burns down, made of an absorbent material, usually cotton.

Two types of candle wax

The two main products used to make candle wax are paraffin, a by-product of petroleum processing, and stearin, i.e. solid fatty acids extracted from animal or vegetable fats.

Which leftover candles make the best fuel for the Waxburner?

The following applies: If the fuel – i.e. the wax – is poor-quality, then the *Waxburner* will also burn with a poorer flame and more soot. It's a little like the engine in a car. If you fill it with premium fuel it will perform better, run better and you can leave longer between services. Unlike a car engine, however, poor-quality wax won't cause the *Waxburner* to break down, but it will need more frequent maintenance, i.e. de-sooting and wick adjustment.

We recommend using paraffin wax as your preferred fuel.



Pure wax

- Bright flame
- Clean burn



Dyed, impure wax

- Dirty flame
- More soot formation on the wick

Paraffin candles

In addition to sealing boats in Egypt, the earliest use of petroleum in the history of civilisation was for illumination and fire. Candles have been made from paraffin – extracted from petroleum as it is today – since the 18th century. As long as people process petroleum, it will be possible to obtain paraffin. Paraffin that is processed to make good-quality candles satisfies the desire for light and warmth, because paraffin has a high energy content and, with a high level of refinement and a perfectly adjusted wick, it does not produce any odour or soot when it burns.



Paraffin

Stearin candles

Lamps with animal tallow or fat as a fuel have been used for lighting since time immemorial. Based on this raw material and using the breakdown of fats, the first stearin candles also appeared in the 18th century. In principle, this process is still used today, but the stearin obtained is carefully cleaned. Stearin candles require around 20% more fuel to produce the same flame but, in comparison to paraffin candles, practically never drip. Stearin, especially if of ordinary quality, gives off a typical “rancid” odour when it burns. Unfortunately, some stearin is also extracted from palm oil. One of the consequences of using palm oil is deforestation of rain forests.

Beeswax candles

Honeycomb from bees is used to make beeswax candles. The wax has a perfume when it burns, and it usually produces a very large flame. This is because of the many easily flammable ingredients in beeswax. Beeswax candles always need a slightly bigger wick so that wax transport to the flame still works despite the solids in the wax. Beeswax candles are soft and usually do not keep their shape very well.



Stearin



Beeswax

How do I tell what wax a candle is made of?

High-quality candles are normally made of a mixture of paraffin and stearin. Paraffin burns better, but it doesn't keep its shape as well as stearin and becomes softer more quickly. For that reason, candle manufacturers always have to weigh up the requirements.

Large decorative candles are made primarily or entirely from stearin. They are recognisable from the “powdery” consistency of the wax. These candles shouldn't lose their shape in sunlight. That is why the melting point of the wax is very high. On the other hand, though, this reduces its ability to burn down. You will definitely have noticed that these candles do not burn as well and with a smaller flame. The same applies to non-drip candles or church candles. Thicker wicks are required to improve the burning properties, but this uses more cotton.

Rule of thumb: Candles made of stearin wax have a powdery appearance and a solid wax with an ice-like structure. Paraffin wax is usually soft with a milky colour.

Coloured candles do not burn as well

Wax is dyed with pigments or aniline dyes to create colour effects. The darker the candle, the worse it burns. Colour pigments in the cotton wick can reduce absorbency and wax transportation and clog up the wick. This usually results in a small flame and a candle that does not burn down well.

Rule of thumb: The paler the wax and the less colour that has been added, the better and more soot-free the candle will burn.

Which candles would you recommend?

It depends what you want to use them for and your personal preferences. If you want attractive candlelight, paraffin is the material of choice. If you want a candle for decorative purposes, choose stearin. Candlemakers will make the appropriate wax blend. You should always pay attention to where a candle is made. Extender oils, polymer waste and sometimes harmful substances are added to some candles made abroad. This can result in irritations, unpleasant odours and a very sooty burn.

Does burning wax produce harmful substances?

Every time something burns, harmful gases can be produced if there is insufficient air (oxygen) available. If wax is burned when there is insufficient air, carbon monoxide, for example, can be produced. This applies equally to paraffin, stearin and beeswax. In normally ventilated rooms there will not be any dangerous gases, provided that the wax has not been contaminated with foreign substances.

Some people wrongly claim that burning paraffin wax produces toxic dioxin. However, dioxins can only form in the presence of chlorine or chlorides. Paraffin does not contain either of these substances and, even if it did, the candle flame wouldn't be hot enough for dioxin formation.



An alternative to leftover candles:
Wax pastilles refill in 2 kg or 4 kg bags



Are you familiar with our range of
essential oils? They transform your
Waxburner into a scent experience.

UNIQUE CERAMICS
SINCE 1964

Natural materials



Unique handmade pieces



Lasts for decades



Respect for people
and nature



Resource-efficient
manufacture



Made in Germany

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