KAHL®

CREATING FUTURE STANDARDS.

KAHL CANDLE

INTRODUCTION

Our KahlCandle grades are premium botanical waxes that are ideal for use in scented container candles. They are ready-to-use and do not need to be blended with paraffin or other non-plant-based waxes. KahlCandle waxes are value-adding, show a very clean burning performance and are very unlikely to cause soot.

All KahlCandle waxes are based on hydrogenated natural oils from renewable resources. Oil hydrogenation is the process of combining unsaturated fat with hydrogen to convert it partially or completely into saturated fat. Changing the degree of saturation changes physical properties, such as the melting range, which is why liquid oils become semi-solid.

Choosing the right wick is probably the most important part of the entire candle system. An over-wicked candle is sooty with a large, flickering flame that produces excess carbon and has a very deep melt pool. The flame of an under-wicked candle is small and will likely extinguish itself, creating a small melt pool that does not reach the edge of the container.

KahlCandle waxes are compatible with all recommended wicks for hydrogenated oils. They show an excellent flame height and burning profile. Additionally, after pouring they have a very good adhesion to the container, especially when preheated. KahlCandle waxes are very versatile and adaptable and can be combined with other waxes for easily customizable blends if desired.

Name	Appearance	MP	Process temperature	Pouring temperature	Fragrance oil load
Coconut	white waxy solid	41-48 °C	65-75 °C	55-65 °C	up to 12 % without sweating (@ 40°C)
Rapeseed	white waxy solid	50-57 °C	65-75 °C	55-65 °C	up to 12 % without sweating (@ 40°C)
Rice	off-white flakes	49-56 °C	65-75 °C	55-65 °C	up to 12 % without sweating (@ 40°C)
Soy	off-white waxy solid	37-44 °C	65-75 °C	55-65 °C	up to 12 % without sweating (@ 40°C)
Sunflower	white waxy solid	44-51 °C	65-75 °C	55-65 °C	up to 12 % without sweating (@ 40°C)

Avoid process temperatures above 90 °C, as this may cause discoloration. Using less fragrance and dye helps ensuring that the flame of the candle properly consumes all the material flowing up through the wick. With a suitable wick, KahlCandle waxes have a very low soot burning profile even with high fragrance oil loads.

KahlCandle Sunflower

KahlCandle Sunflower is a blend consisting of hydrogenated vegetable glycerides based on sunflower and olive oil.

Sunflower oil is the non-volatile oil pressed from the seeds of the sunflower (Helianthus annuus). that is commonly used in the food and cosmetic industry. It is produced mainly in Europe, Argentina, Turkey, and China.

KahlCandle Sunflower is a white wax with a colorless, crystal-clear melt and no characteristic odor.

KahlCandle Soy

KahlCandle Soy is a slow burning product with silky texture and neutral odor that is compatible with other plant-derived hydrogenated oils.

It is based on soybean oil, which is extracted from the seeds of the soybean. The leading soy processing countries are China, USA, Brazil, Argentina, and India. To produce the oil, the soybeans are cracked, adjusted for moisture content, heated to 60-88 °C, rolled into flakes, and solvent extracted. The oil is then refined and hydrogenated.

KahlCandle Rice

KahlCandle Rice is off-white wax based on hydrogenated rice bran oil and coconut oil.

Rice bran oil is extracted from the hard, brown, outer layer of rice called bran. It is popular as a cooking oil in East Asia, the Indian subcontinent, and Southeast Asia including Indonesia, Japan, Southern China, and Malaysia. The oil is industrially produced with the use of solvents, employing either the hot or cold extraction method.

Combine KahlCandle Rice with KahlCandle Coconut, Soy, or Rapeseed for a more plastic behavior.

KahlCandle Coconut

KahlCandle Coconut is a pure white wax based on hydrogenated coconut oil. Refined coconut oil is usually made from copra and dried coconut kernels, which are pressed in a heated hydraulic press to extract the oil. It can be processed further into partially or fully hydrogenated oil to increase its melting point.

KahlCandle Coconut shows no frosting on the top of candle. It has a great performance and scent holding. It can be used as sole ingredient or blended with other hydrogenated oils to maximize fragrance retention or scent throw. It has no characteristic odor and is also compatible with beeswax.

KahlCandle Rapeseed

KahlCandle Rapeseed is a versatile container candle wax based upon rapeseed oil with comprehensive all-round features. It can be used as single component but is also compatible with refined paraffin, stearic acid, and other types of waxes.

Rapeseed oil is one of the oldest known vegetable oils. There are both edible and industrial forms produced from rapeseed, the seed of several cultivars of the plant family Brassicaceae. Rapeseed is extensively cultivated in Canada, China, India, and France.

It is white wax with a clear melt and no characteristic odor that has a great cost performance ratio.

TROUBLESHOOTING

CRACKING

Every wax shrinks slightly as it cools. If it cools down too fast, cracks on the surface might occur. Appropriate and consistent temperatures are the best way to avoid cracking.

FROSTING

Frosting is a form of recrystallization caused by growing crystals on the surface of the candle. High production and pouring temperatures reduce the likelihood of its occurrence. Also, preheating the glassware and fast cooling help to ensure that the candles crystalize evenly. Generally, frosting is more apparent if the candle is colored. It is also crucial that during the curing process the ambient temperature is very stable.

Soy wax is more prone to frosting, the combination with coconut wax can be beneficial.

POOR SCENT THROW

For an ideal scent throw, the fragrance oil needs to bond properly with the wax. By adding the oil at the right temperature and stirring thoroughly, the bonding can be improved. The quality and quantity of the fragrance oils is also important. Pure, high-quality oils added in the optimal concentration will give a cleaner burn and stronger throw.

As a full melt pool is essential for a strong hot throw, optimizing the wick size and type can be beneficial. Lastly, the size of the container also plays an important role, as it determines the maximum surface area of the melt pool. The larger the melt pool, the more fragrance is released, resulting in a strong scent throw.

SWEATING

The appearance of little droplets on the surface of a candle is usually a sign that the fragrance is leaching, seeping, or bleeding. Typically, seeping is caused by adding too much fragrance oil or by adding the fragrance at too low a temperature. Appropriate temperatures and fragrance loads ensure that the fragrance binds completely with the wax. If the fragrance does not bind properly, it will start to separate from the wax and rise to the surface of the candle or, in some cases, settle at the bottom.

More fragrance oil does not necessarily result in a stronger scent. All waxes have a maximum fragrance load but is very rare that using the maximum is necessary. Most high-quality fragrance oils will already be quite strong at 6-8 %.

LEGAL DISCLAIMER

The information contained in this brochure, in particular data and test results, suggestions and formulas, is provided to the best of our knowledge at the time of going to press. We do not, however, guarantee that it is up-to-date, correct, or complete, nor do we guarantee the quality of the information provided in this brochure. Liability claims against us relating to damages of a material or immaterial nature caused by using the information featured in this brochure are categorically excluded unless there is evidence of willful intent or gross negligence on our part.

The use of trade names, trademark rights, trademarks or other industrial property rights of other companies in this brochure shall not authorize third parties to use them freely, as they may be the protected or registered rights of third parties even if they are not expressly identified as such. The existence of any third-party industrial property rights must be investigated independently and observed.

Kahl GmbH & Co. KG
Otto-Hahn-Strasse 2
22946 Trittau
Germany

www.kahlworld.com