LumiWax™
Vegetable waxes for candles

IOI Loders Croklaan
Let’s create together
In the competitive candles market, there are a number of challenges. In the short term, you need to control costs to stay ahead of your rivals. In the long term, paraffin supplies are under pressure, forcing manufacturers to find high quality raw materials and blends that are still cost-effective. In addition, retailers are setting increasingly higher sustainability requirements. Responding to these market developments is important to safeguard your future profitability.

As the leading palm wax experts, we have helped several major candle manufacturers successfully introduce palm wax into their production processes. Whether you make container candles, free standing candles, tealights or grave lights, we support the highest standards in terms of appearance, texture, stability and burning behaviour.

Consistent quality and continuous supply
Our secure supply chain ensures steady volumes of sustainable palm wax. And because we have state of the art refineries in Europe, we can meet the highest EU standards. What’s more, our proximity to our customers means we can respond quickly to changing requirements and short lead times.
Oils and fats that help you meet your business goals

We are a leading producer of premium quality oils and fats for food and non-food products encompassing:

- Fully integrated, controlled and sustainable supply chain in conjunction with IOI Group to deliver consistent high quality
- Continents from which we operate, enabling us to serve the globe
- 100% traceability of directly sourced palm oil
- 125 years of experience of ingredients, applications and processes
- 300+ patents awarded for innovations developed by our R&D specialists
- 1,500,000+ metric tons of refining capacity (EU)
- 300,000 metric tons of storage capacity (EU)
- 1,150 colleagues partnering with you to deliver world-class solutions that are more sustainable and cost-effective.
With some 125 years of experience, we are experts at modifying fats and oils for a wide range of applications. We understand that palm wax, coloring agent, fragrance oil, paraffin and wicks interact. Our specialists can help you choose the right palm wax to balance these dynamics, resulting in the candle properties you need. By understanding your business goals and challenges, together we create products that help make you successful.

Taking responsibility
As the frontrunner in sustainable palm wax, we are board member of the Round Table on Sustainable Palm Oil (RSPO) and we advise the European Candle Association in complex fat-related issues. We also work with retailers to help them define achievable sustainability standards for candles so that manufacturers can meet their requirements.

Going the extra mile
Our services go beyond technical expertise. With our in-depth market knowledge, we can advise you on the best time to buy raw materials. Unlike paraffin, you can buy palm wax up to 18 months in advance, which gives you price certainty and reduces your business risk.

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Your candle wick
palm wax
coloring agent
fragrance oil
paraffin
LumiWax Soft
Easy, high-quality blending

LumiWax Soft palm waxes can be blended with LumiWax Hard products for a variety of candles like tea lights, container candles and memorial candles. If you’re blending LumiWax soft, medium and hard products with paraffin, please see the ratios in the table for the optimum blend. Blending LumiWax and paraffin may alter physical parameters like dropping point, solid fat content and crystallization speed and behavior. In addition, blends containing both products don’t always produce the values you might expect based on the values for separate raw materials.

LumiWax39
is a fully refined pure palm wax product and our standard soft palm product. Due to its relatively soft nature at room temperature, its main application is in blends with LumiWax Hard products in container candles like memorial candles and tea lights.

LumiWax39 XL
is similar to LumiWax39 in composition, but with an extra light color. Also worth mentioning is that it is RSPO SG by default.

<table>
<thead>
<tr>
<th>Ratios of common vegetable fat content related candle type</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Container Lights</td>
<td>50 – 80 %</td>
</tr>
<tr>
<td>Tea lights</td>
<td>70 – 100 %</td>
</tr>
<tr>
<td>Memorial lights</td>
<td>70 – 100 %</td>
</tr>
<tr>
<td>Container candles</td>
<td>50 – 100 %</td>
</tr>
</tbody>
</table>

Lovibond color difference between LumiWax 39 and 39XL.
LumiWax Medium
Multipurpose blending wax

During crystallization, the burn mass might contract since the molecules are more closely packed in solid form. This contraction may vary between different types of wax. Depending on the application, contraction can be desirable or undesirable. It’s desirable when candles have to be removed from a mold, but in jar or container candles, contraction can result in unsightly wet spots. Choosing the right burn mass can reduce this.

LumiWax55 is a high-quality, fully refined pure palm wax stearin product. It’s solid at room temperature and has a regular melt line. LumiWax 55 contracts very little. This makes it ideal for tea lights and container candle blends.

LumiWax62 is our high-melting product with high palmitic content. It can be used as a crystallization starter for softer LumiWax products.
LumiWax Hard
Improved crystallization for well controlled processing

We also want your candles to look the way you intend. LumiWax 56 and LumiWax 61 due to their straight forward crystallization behavior, achieve smooth solidification with a firm, stable texture throughout shelf life.

LumiWax 56 and LumiWax 61 can be used in blends with softer products like LumiWax 39 or LumiWax 39XL to improve crystallization to fit your needs. If your storage capacity is limited, we can supply you with the exact blend you need. Our innovation team is always willing to help you find the product or blend that best fits your requirements. Let’s create together!

LumiWax56 offers improved crystallization behavior and is suitable in blends with softer LumiWax products to give smooth and improved crystallization. LumiWax 56 is relatively hard and blends well with paraffin. It can be used pure in tea lights as well as in container candles as a crystallization improver for softer LumiWax products.

LumiWax61 is a modified high-melting product. It’s great for blending with softer materials to improve hardness, crystallization and higher melting temperatures.
Bulk fats are best kept in a stainless steel silo or inert container. For easier handling and optimum quality, bulk liquid LumiWax products should be stored at 10 - 15 °C above the liquid temperature of the wax. To prevent oxidation, a nitrogen blanket in the headspace of the silo or container is recommended.

Avoid topping up older supplies or remains in the container. Topping up accelerates deterioration of product quality and might change its physical properties over time.

Temperature fluctuations can cause oil or paraffin to sweat from the surface of the candle. This can happen with a fragrance oil or an oil fraction naturally present in the paraffin or vegetable fat at room temperature. This effect can be minimized by adjusting production process settings and choosing compatible raw materials. We support you in optimizing your production conditions.

We also recommend regulating storage and transportation temperature.

Some Fats have polymorph crystallization behavior. For proper crystallization, we advise that the wax is heated to at least 10 °C above the dropping point temperature before use. This is to remove any crystal memory that could lead to crystallization deficiencies.
## LumiWax typical parameter values

<table>
<thead>
<tr>
<th>Wax type</th>
<th>UNIT</th>
<th>LumiWax 39</th>
<th>LumiWax 39XL</th>
<th>LumiWax 55</th>
<th>LumiWax 56</th>
<th>LumiWax 61</th>
<th>LumiWax 62</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td></td>
<td>soft</td>
<td>soft</td>
<td>medium</td>
<td>hard</td>
<td>hard</td>
<td>hard</td>
</tr>
<tr>
<td>Tealight</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Freestanding</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Iodine value
- g I2/100g: 53, 53, 35, 23, 2, 13
- %: 22, 23, 66, 96, 97
- %: 3, 2, 30, 76, 95

### SFC (20°C)
- %: 3, 2, 30, 76, 95

### SFC (40°C)
- °C: 39, 39, 55, 55.7, 61.5

### Color R 5 ¼”
- % wt.: 0.03, 0.02, 0.03, 0.04, 0.03

### Color Y 5 ¼”
- % wt.: 0.03, 0.02, 0.03, 0.04, 0.03

### Penetration (25°C)
- 1= 0.1mm: 54, 2, 1

### Mettler Dropping Point (MDP)
- °C: 39, 39, 55, 55.7, 61.5

### Peroxide value
- meqO2/kg: 0.2, 0.2, 0.3, 0.2, 0.1

### Free fatty acids
- % wt.: 0.03, 0.02, 0.03, 0.04, 0.03, 0.20
At IOI Loders Croklaan, we are dedicated to sustainable practices in everything we do, from our choice of raw materials to how we operate our refineries. We are convinced that we will serve you best today and tomorrow by sourcing responsibly produced and traceable raw materials from partners we know and trust. By balancing economic, social, and environmental interests, we believe we can create long-term shared value.

With access to IOI Group’s consistent, high quality palm oil supply chain, we have the flexibility to offer a broad range of products. Our commitment to sustainable development is part of an ongoing process. Our portfolio is available in both SG RSPO and MB RSPO types. Please ask your regional sales representative for more information.
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