



*LumiWax*<sup>™</sup>

**Vegetable  
waxes  
for candles**

**BUNGE**



## Palm wax expertise to ensure a profitable, sustainable future

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 behavior.

### **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:

- 1 integrated, controlled and sustainable supply chain to deliver consistent high quality
- 5 continents from which we operate, enabling us to serve the globe
- 1 stop shop for all seed and tropical oils
- 325+ years of combined experience in 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)
- 2500+ colleagues partnering with you to deliver world-class solutions that help you create sustainable and cost-effective offerings







## Let's create together

With more than 325 years of combined 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.







# 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

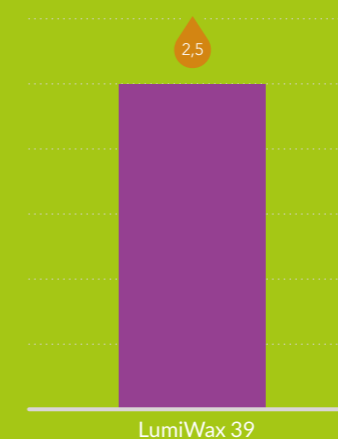
is a fully refined pure palm wax product and our standard soft palm product. Due to its relatively soft nature at room temperature, its main application is in blends with LumiWax Hard products in container candles like memorial candles and tea lights.

### Ratios of common vegetable fat content related candle type

Container Lights	
Tea lights	50 - 80 %
Memorial lights	70 - 100 %
Container candles	50 - 100 %

### Lovibond color LumiWax 39

Color R51/4"







# 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.



LumiWax55

Reference



# 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!

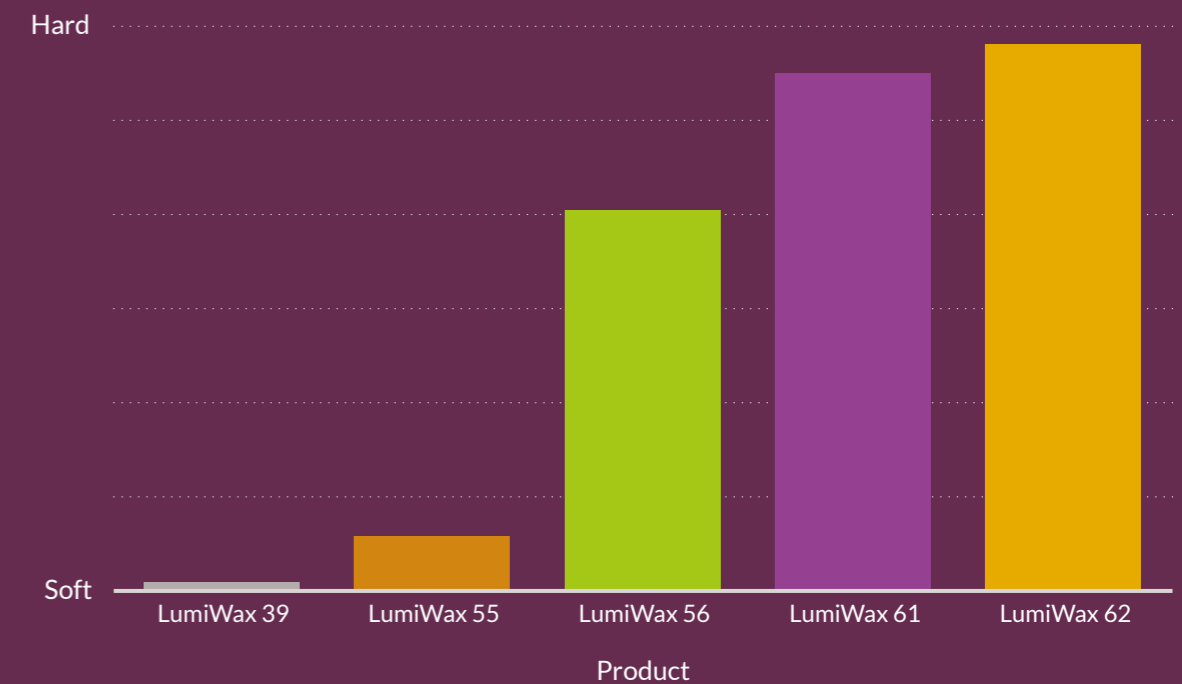
## LumiWax56

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.

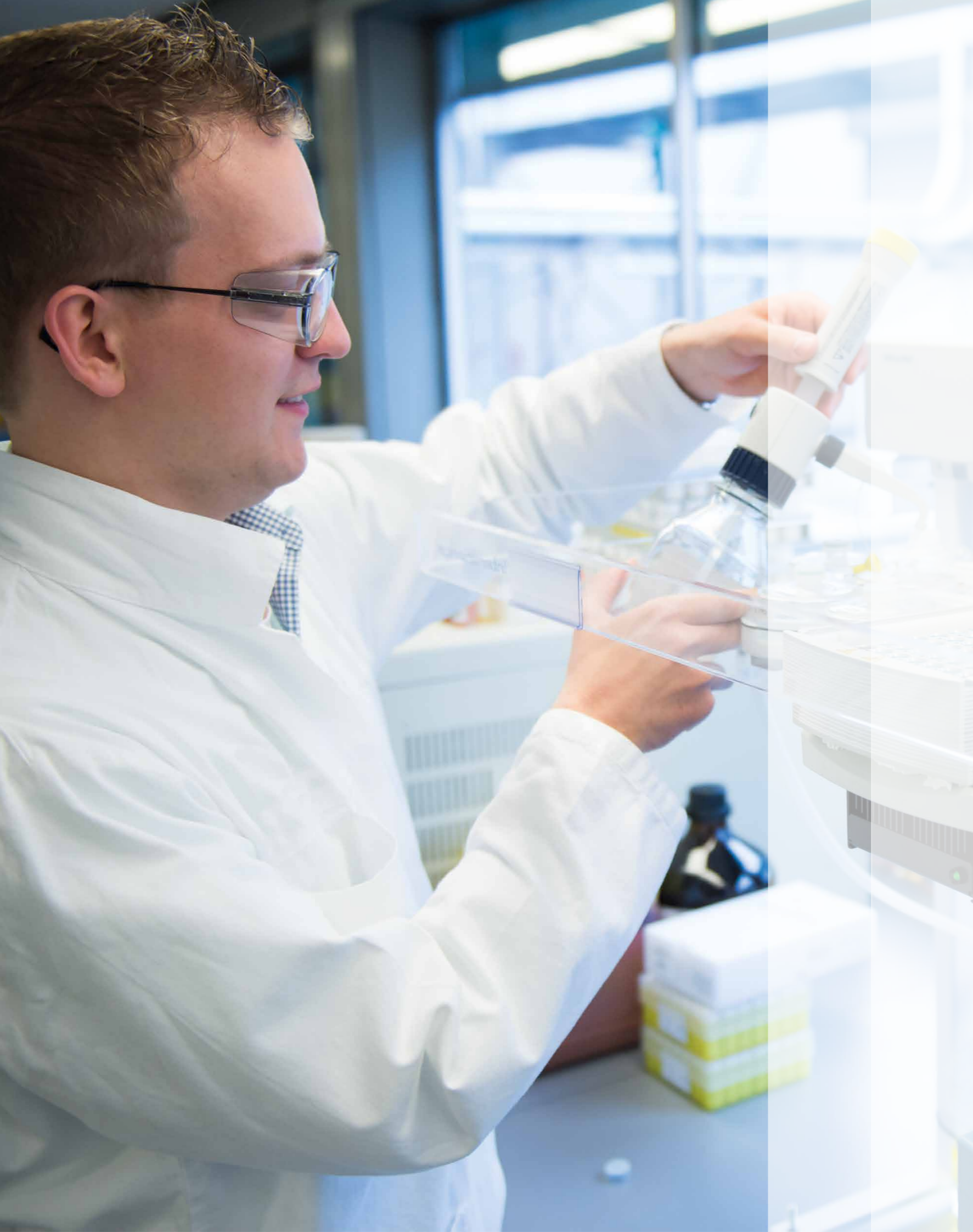
## LumiWax61

is a modified high-melting product. It's great for blending with softer materials to improve hardness, crystallization and higher melting temperatures.

## Hardness







## Storage, handling and process advice

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.

Refining facility at Maasvlakte Rotterdam





# Bringing out the best in your candles

## Lumiwax

LumiWax typical parameter values		UNIT	LumiWax39	LumiWax 55	LumiWax 56	LumiWax 61	LumiWax 62
Wax type			soft	medium	hard	hard	hard
Application	Container		+	+	+	+	+
	Tealight			+	+	+	+
	Freestanding				+	+	+
Iodine value	g I2/100g		53	35	23	2	13
SFC (20°C)	%		22	66	96	97	94
SFC (40°C)	%		3	30	76	95	80
Color R 5 ¼"	-		2,5	1,6	1,6	0,8	1,6
Color Y 5 ¼"	-		41	16,6	14,2	4,8	9,5
Penetration (25°C)	1= 0.1mm		-	54	2	1	11
Mettler Dropping Point (MDP)	°C		39	55	55,7	61,5	62,1
Peroxide value	meqO2/kg		0,2	0,3	0,2	0,1	3,8
Free fatty acids	% wt.		0,03	0,03	0,04	0,03	0,20







# Building a transparent and sustainable supply chain

At Bunge, 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 we will serve you best today and tomorrow by sourcing responsibly produced and traceable raw materials from partners we know and trust. With the industry's most globally and sustainable supply chain we give you the peace of mind that the ingredients you are using are responsibly grown and support the commitments you have made to your customers and stakeholders.

We are committed to our Sustainable Palm Oil Sourcing Policy. This is a so-called NDPE policy: no deforestation, no development on peat, and free and fair labor practices. We believe all palm oil should be produced in a manner that is legally compliant and traceable, that protects forests and biodiversity, reduces greenhouse gas (GHG) emissions and respects the rights of indigenous peoples, workers and local communities.

We also recognize the important role we can play in encouraging a transition to a more sustainable industry, and we work with partners and stakeholders to advance leading standards and higher levels of transparency.

## Responsible shea sourcing

In addition to palm oil, Shea is an important raw material in our supply chain. Shea trees grow in the wild in numerous countries across West Africa. The shea industry is dominated by women who collect and process the shea nuts. We develop fair and long-term relationships to source directly from women's groups, associations and village communities. Through projects and partnerships, we also educate and empower these groups, resulting in improved working conditions, increased income and security, and a guaranteed supply of high-quality shea butter.



100% traced palm oil to mill



RSPO member



Full transparency via our online palm oil dashboard



Economic empowerment of shea sourcing communities in West Africa



We assess palm oil mills ourselves, verifying compliance with our Sustainable Palm Oil Sourcing Policy



