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**KLK OLEO**

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*Excellence in Oleochemicals*



**Sustainability  
Starts Here.**

## Sustainability defined:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

UN Brundtland Commission, 1987

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## Our Brand, a Global Leader

KLK OLEO is one of the largest manufacturer of renewable palm-based oleochemical products and derivatives.

## Our Roots

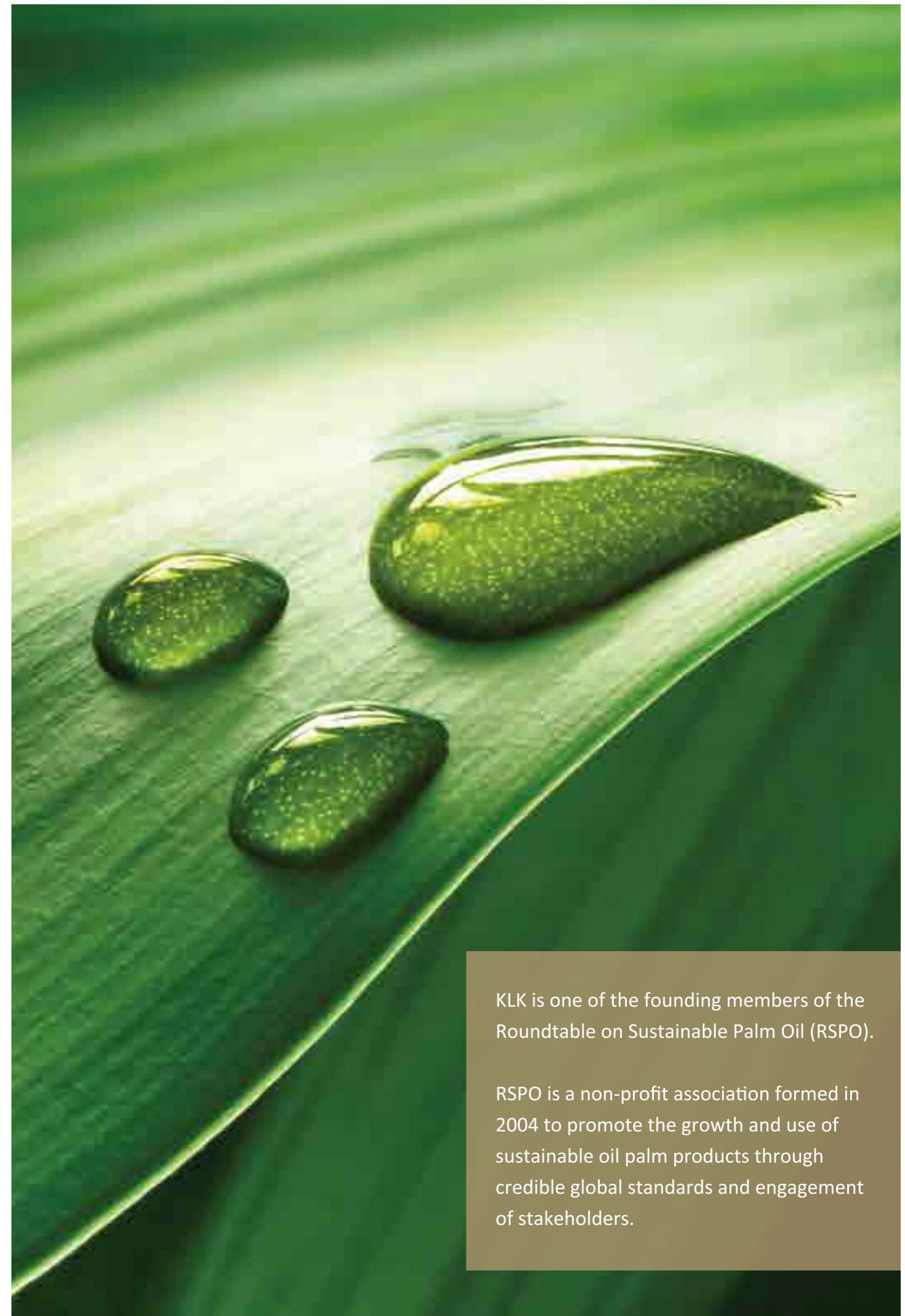
KLK OLEO is part of Kuala Lumpur Kepong Berhad (KLK), a Bursa Malaysia Main Board listed company involved in the exploration of palm oil plantations worldwide.

Our parent company was established in 1906 in London. Its headquarters relocated to Malaysia in 1973, and since the 1990s, KLK has expanded its portfolio by venturing into various downstream activities for several major industries-plantations, manufacturing, retailing and property.

KLK OLEO was formed in 1991 to be KLK's resource-based oleochemicals, derivatives and specialty chemicals manufacturer.

KLK OLEO is deeply rooted in Sustainability.

- Our products are manufactured from natural renewable raw materials obtained from our parent company.
- Our business concept emphasizes on sustainable and responsible practices and operations, just like our parent company.



KLK is one of the founding members of the Roundtable on Sustainable Palm Oil (RSPO).

RSPO is a non-profit association formed in 2004 to promote the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders.

## The Vision

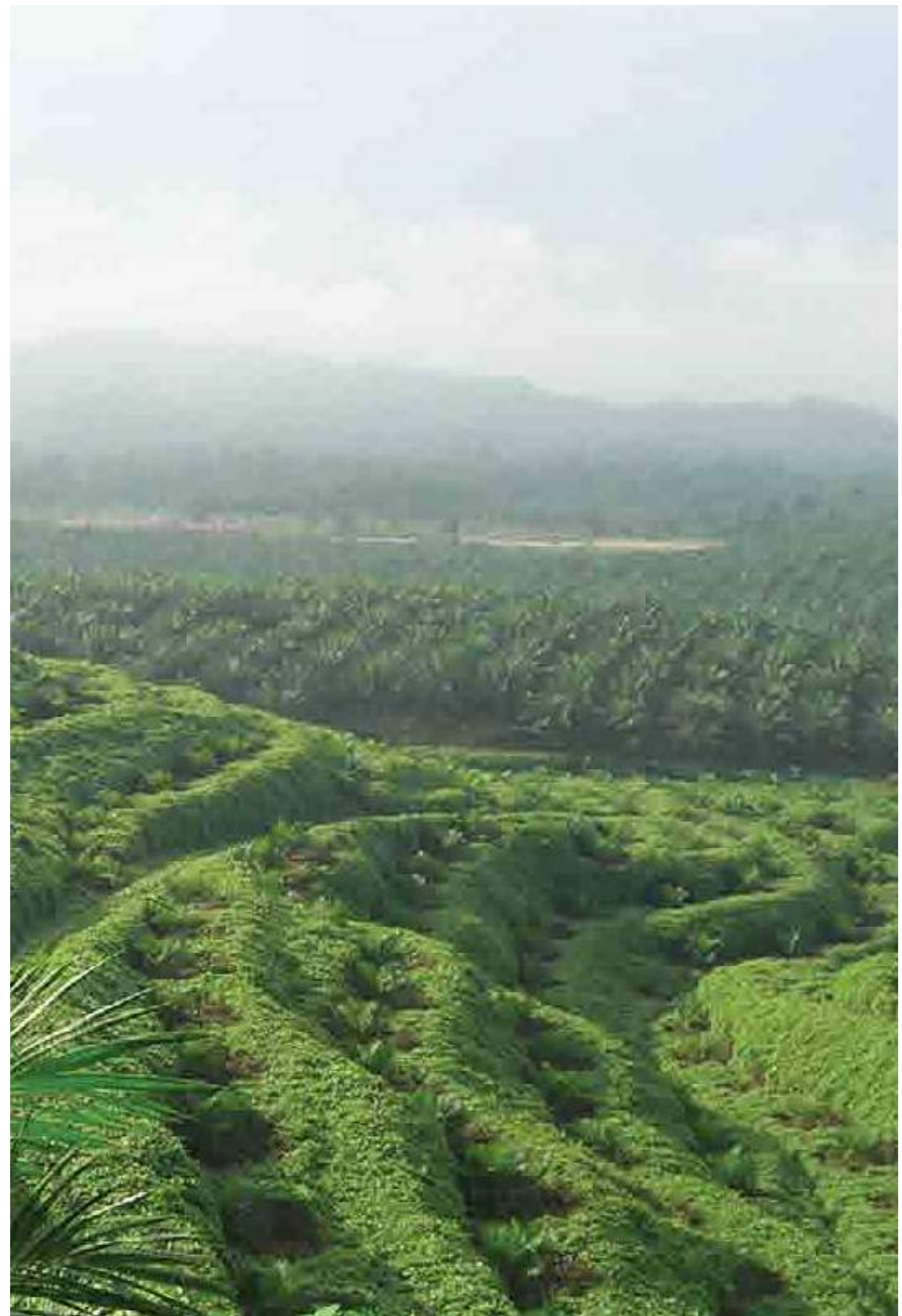
To be the largest, competitive and most preferred producer and supplier of innovative and sustainable palm-based oleochemical products and derivatives for all major global markets.

To be a global group of companies that is closest to all of our customers in each market worldwide.

## The Mission

We will continue to manufacture and supply sustainable, quality, reliable and innovative products and solutions for the oleochemical industry at competitive prices.

We will be a good and responsible corporate citizen, observing the highest standards of integrity in our business practices for the sake of the environment and relevant communities.



## Our Values

### Sustainable

Pursue responsible, Green profits together with our stakeholders without sacrificing the equilibrium of Nature through integration of Green systems, methods and standards into our business strategy and operations.

### Innovative

Fresh, creative ideas leading to an extended range of products and solutions that adds value, serves as a one-stop solution and provide a strong, competitive edge for the success of our customers and clients.

### Reliable

- Consistent delivery of quality products.
- Extensive investments in Research & Development for continuous improvements.
- State-of-the-art processing plants.
- Efficient global distribution and network supply through sales offices, bulk storage facilities and manufacturing sites worldwide.
- Comprehensive customer and product support with our Technical Services Teams and Product Application Support Teams.

We're in it for Everyone!  
Mother Nature's Future  
Brand Growth  
Global Consumers' Demands  
Customers and Clients' Success  
Employees' Improvement  
Relevant Communities' Well-being

## Chemicals for Everything

With an experienced and supportive parent company, KLK OLEO has successfully emerged as one of the leading global player in the oleochemical industry, offering an array of innovative, sustainable, quality and reliable products and solutions.

Our products and solutions are tailored based on our customer's perspective, and undergo strict, high standards of quality and safety procedures, implementations and tests, accreditation assessments and subjected to regulatory science policies.

## Sustainability is Our Color

We take pride in the fact that our raw materials are derived from natural resources, and are renewable. Our manufacturing processes and business operations are also crafted to reduce KLK OLEO's carbon footprint. We will continuously strive to ensure that responsible care is implemented whenever possible.

Non-genetically Modified Organisms (Non-GMO)

Good Agricultural Practices (GAP)

KLK's Tissue Culture Laboratory

Roundtable on Sustainable Palm Oil (RSPO)





## RSPO

### Roundtable on Sustainable Palm Oil (RSPO) Certification

The elements of the RSPO Certification Scheme are said to be the world's toughest standards for sustainable agriculture production.

Hence, the RSPO Certificate is universally recognized as a seal of approval that the palm oil used in the product is indeed produced sustainably, and in traceable volumes.

We source Responsible Planters who observe the 8 Principles and 39 Criteria of RSPO in their daily operations.

## Current Milestone

### July 2010 - Acquisition of KLK Emmerich in Germany

KLK OLEO successfully acquired a new plant on the river of Rhine in Germany.

The plant, which is over a decade old, is strategically situated close to key customers and raw material supply routes in the heart of Europe. Possessing world-scale assets, it has production facilities which manufacture of a range of fatty acids, hydrogenated fatty acids and glycerine by splitting of vegetable oils. The main raw materials used on site are either natural vegetable oils (e.g. coconut oil, palmkernel oil, rapeseed oil) or crude glycerine, either normal or methanolysed.

Emmerich is known to have a strong pedigree with the owners of Unilever (UNICHEMA), ICI (UNIQEMA) and Croda.

Today, it is part of KLK OLEO.



# PALMERA

## Fractionated & Distilled Fatty Acids



PALMERA distilled and fractionated fatty acids are produced in accordance with the required demands and quality standards such as GMP and HACCP - making them suitable for food, pharmaceutical and personal care applications. It can be used as-is, or as a derivative. Fatty acids may be found in plastics, rubber, textiles, lubricants, metal-working, crayons, candles, biocides, paints, inks and etc.

## Product Range

- Caproic Acid
- Caprylic - Capric Acid
- Caprylic Acid
- Capric Acid
- Lauric Acid
- Myristic Acid
- Palmitic Acid
- Stearic Acid
- Oleic Acid
- Arachidic-Behenic Acid
- Behenic Acid
- Erucic Acid
- Double / Triple Pressed Stearic Acid
- Rubber Grade Stearic Acid
- Distilled Palm Stearine Fatty Acid
- Distilled Palm Oil Fatty Acid
- Topped / Distilled Palm Kernel Fatty Acid
- Topped / Distilled Coconut Fatty Acid
- Tallow Fatty Acid



# PALMERA

## Refined Glycerine



PALMERA glycerine is a highly versatile and multi-functional product. Our glycerine conforms to USP, EP and BP standards; making it suitable for pharmaceutical and personal care applications. Glycerine is also widely used in tobacco products, surface coatings, paper, inks, lubricants, textiles, urethane polymers and etc. Glycerine, as a derivative, is found in the production of nitroglycerine, propylene glycol, epichlorohydrin and acrolein.

## Product Range

- USP Grade
- EP Grade
- BP Grade





# PALMEROL

## Fatty Alcohols



PALMEROL fatty alcohols are derived from vegetable oils and are available in various fractions. The most important market for natural fatty alcohols; especially mid-cut and long chain alcohols, is for household detergents. Fatty alcohols are generally applied as a derivative for surfactants and detergent products.

### Product Range

- Octyl Alcohol
- Decyl Alcohol
- Lauryl Alcohol
- Myristyl Alcohol
- Cetyl Alcohol
- Stearyl Alcohol
- Octyl-Decyl Alcohol
- Lauryl-Myristyl Alcohol
- Lauryl-Cetyl Alcohol
- Lauryl-Stearyl Alcohol
- Ceto-Stearyl Alcohol



# PALMERE

## Fractionated Methyl Esters



PALMERE fractionated methyl esters are derived from vegetable oils and are available in light-cuts to heavy-cuts for diverse applications such as bio-fuel, lubricants, metal-working fluids, solvents for personal care products, rubber processing agents, oiling agent for textiles, and etc. Methyl ester is one of the main raw materials in the production of ester-based detergent surfactants like methyl ester ethoxylates (MEE), methyl ester sulfonates (MES), alkanolamides, and etc.

### Product Range

- Methyl Caproate
- Methyl Caprylate
- Methyl Caprate
- Methyl Laurate
- Methyl Myristate
- Methyl Palmitate
- Methyl Oleate
- Methyl Caproate-Caprinate
- Methyl Laurate-Myristate
- Methyl Laurate-Stearate
- Palm Kernel Methyl Ester
- Methyl Palmitate-Stearate



# PALMESTER

Fatty Esters



PALMESTER is used in a broad variety of different industrial applications such as cosmetics, toiletries, pharmaceuticals, food, metal working fluids, and etc. Properties like lubrication, mould release, consistency promotion, emolliency, stability enhancement, spreading or fatty, solvency and cleaning demonstrate the large variety of functions offered by these unique products.

## Product Range

### A. Isopropyl Esters

Isopropyl Myristate  
Isopropyl Palmitate  
Isopropyl Oleate

### F. Glycol Esters

Glycol Distearate  
Glycol Stearate

### B. Ethylhexyl Esters

Ethylhexyl Palmitate  
Ethylhexyl Stearate  
Ethylhexyl Oleate  
Ethylhexyl Cocoate

### G. Polyol Esters

Trimethylolpropane Palm Kernelate  
Trimethylolpropane Palm Cocoate  
Trimethylolpropane Trioleate  
Trimethylolpropane Tricaprylate/ Caprate  
Pentaerythritol Tetracaprylate/ Caprate  
Propylene Glycol Dioleate  
Pentaerythritol Tetraoleate

### C. Butyl Esters

N-Butyl Stearate

### D. Methyl Esters

Methyl Laurate

### E. Glycerol Esters

Caprylic/Capric Triglyceride (MCT oil)  
Glycerol Trioleate



# PALMOSALT

Soap Noodles/Soap Chips



KLK OLEO offers a wide range of soap compositions for different formulations and quality aspects. Due to its wide-ranging versatility and overall properties, our PALMOSALT range of soap noodles meets the varied needs of our clients in the cosmetic, toiletry and laundry detergent manufacturing industries.

HIGH LOADING Soap Base is a versatile base for dense, creamy and silky lather bar soap. It possesses excellent additive high-loading properties; for example, greater perfume loading results in better perfume retention and subsequently continued release. As it is a versatile & specialized in usage, the base offers flexibility for cosmetic & toiletry companies launching new varieties of bar soap trend products in the market.



NOMAR Soap Base was developed to enhance the look and condition of complex soap shapes and patterning. It's excellent processing characteristics and properties enables the production and easy manufacture of intricate shapes in soap bars



# PALMOCOL

Alkanolamides



PALMOCOL is a high purity alkanolamides for application in toiletries, liquid detergents and personal care products like shampoos, bubble baths, hand washers, body and facial cleansers. PALMOCOL is excellent in building viscosity; boosting and stabilizing foams - making it suitable for use in anionic or non-ionic surfactants. The Monoethanolamide grade can be used in various tablet formulations, such as synthetic soap bars, to effectively control its dissolution rate.



## Product Range

Monoethanolamide - 80% / 90% min  
Diethanolamide - 80% / 90% min



# PALMFONATE

Anionic Surfactant



PALMFONATE is KLK OLEO's brand of anionic surfactant, which is the active cleaning ingredient in laundry detergents.

PALMFONATE's primary use is as a substitute to the current surfactant workhorse, Linear Alkyl Benzene Sulfonate, in detergent formulas. It is made from renewable natural resources, which gives it excellent bio-degradability; improved calcium hardness tolerance during the washing process, and superior detergency.



Available in dry free-flowing powder, PALMFONATE anionic surfactant enables direct addition to detergent formulas in the post-addition step in the manufacturing process.



# PALMERGY

Biodiesels



Today's diesel engines require a clean-burning, stable fuel which performs well under a variety of operation conditions. Biodiesel is the only alternative fuel. Because it has similar properties to petroleum diesel fuel, biodiesel can be blended in any ratio with petroleum diesel fuel. Our PALMERGY biodiesels meets with the ASTM and EN standard for the above purpose.

## Product Range

- Palm Methyl Ester
- Palm Methyl Ester, CFPP: 5-10 °C
- Palm Methyl Ester, CFPP: 3-5 °C
- Palm Methyl Ester, CFPP: 0-3 °C



# PALMOWAX

Ethylene Bis-Stearamides (EBS)



PALMOWAX EBS exhibits excellent lubricating properties internally and/or externally in most plastics. EBS can be a binder in the precise engineering metal part. Its good dispersing ability and surface migration allows EBS to be used in the ink industries. When used as asphalt binders, PALMOWAX increases its softening point and enhances its visco-elasticity. Others application of EBS are in synthetic rubbers, wire drawing, defoaming agents, synthetic fibers, adhesive tape roll and etc.



## Product Range

## Typical Particle Size

PALMOWAX Bead	1150 μm
PALMOWAX SP	380 μm
PALMOWAX SF	50 μm
PALMOWAX Atomized	<10 μm



# FIVE PEAKS

## Benzyl Quats



Our FIVE PEAKS products are GMP-certified; making it suitable in food applications and hygiene products as anti-microbials, disinfection agents and sanitizers. It is easily soluble in water and has low sensitivity to hard water.

## Product Range

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Benzalkonium Chloride

Benzalkonium Bromide



## Disclaimer

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Printed in Malaysia.

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