Global Oleo FZC

MSD Global Oleo FZC

MSD Global Oleo FZC is one of the leading Vegetable based oleochemicals trading company in the world. With its head office in India MSD Global (www.msdoleo.com) our principal activities include toll manufacturing, sales and distribution of entire range of oleochemicals and various grades of speciality fats and edible oils.

OLEOCHEMICALS

MSD Global Oleo FZC activities include toll manufacturing ,sales and distribution of entire range of oleochemicals that is Soap Noodles, Fatty Acid fractions, Distilled Fatty Acids, Fatty acid distillate, Glycerine, Fatty Alcohols,RBD vegetable oils, split fatty acids, ester, Glycerinmonostearte&monooleate, palm wax, Fractionated methyl ester , hydrogenated products and various grades of Amides and Betaines

This products are used in a wide variety of applications both Non-food areas and Food areas including manufacturing of Bar soaps, Shampoo, detergents and surfactants, cosmetics, Pharmaceuticals products, food additives and plastics, rubber & latex, paints, inks & coatings, candle & waxes, Grease & lubricants, resins, animal feed products

Our key sourcing supply markets and manufacturers are located in Malaysia, Indonesia, Thailand and India. Where we produce wide range of high quality sustainable oleochemicals and speciality fats.

MSD Global a fully integrated international trading company for palm oil midstream and downstream industry resources with in house logistics arrangement launched its subsidiary company in Dubai to cater to their international customers who are located in Europe, Middle East and African countries with its high end oleochemicals and speciality fats.

Our Indian Head Office MSD GLOBAL (www.msdoleo.com) years of expertise, Innovative research nd using toll manufacturing capacity and with the help of abundant raw material found in Malaysia, Indonesia and Thailand has helped us to offer extensive range of oleochemicals and speciality fats through our Dubai Office which caters to wide range of industries.

Amides & Betaine

PRODUCT: Betaine OT-30 &Betaine OT-45 Cocamidopropylbetaine (CAPB) is a mixture of closely related organic compounds derived from coconut oil and dimethylaminopropylamine CAPB is available as a viscous pale yellow solution and it is used as a surfactant in personal care products. The name reflects that the major part of the molecule, the lauric acid group, is derived from coconut oil. Cocamidopropylbetaine to a significant degree has replaced cocamide DEA.

PRODUCTION:

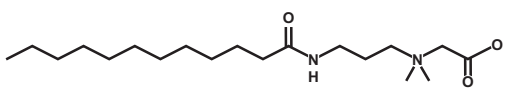
Despite the name cocamidopropylbetaine is not synthesized from betaine. Instead, it is synthesized beginning with the production of an amide by reacting dimethylaminopropylamine with fatty acids from coconut oil, mainl ylauric acid) (Step 1).

The amide is then reacted with chloroacetic acid to form the cocamidopropylbetaine (Step 2)

$CH_3(CH2)_{10}C(O)OH + H_2NCH_2CH_2CH_2N(CH_3)_2 \rightarrow CH_3(CH_2)10C(O)N(H)CH_2CH_2CH_2N(CH_3)_2$ (Step 1)

$CH_3(CH_2)_{10}C(O)N(H)CH_2CH_2CH_2N(CH_3)_2 + ClCH_2CO_2H + NaOH \rightarrow CH_3(CH_2)_{10}C(O)N(H)CH_2CH_2CH_2N+(CH_3)_2CH_2CO_2 + NaCl + H_2O$ (Step 2)

CAPB is a fatty acid amide containing a long hydrocarbon chain at one end and a polar group at the other. This allows CAPB to act as a surfactant and as a detergent. It is a zwitterion, consisting of both a quaternary ammonium cation and a carboxylate.

Lauramidopropylbetaine	Name	Identifiers
 Lauramidopropylbetaine, the major component of Cocamidopropylbetaine	IUPAC {[3-(Dodecanoylamino)propyl](dimethyl)ammonio}acetate Other 2-[(3-Dodecanamidopropyl)dimethylaminio]acetate	CAS Number: 61789-40-0 Chemical formula: $C_{19}H_{38}N_2O_3$ Molar mass: $342.52gmol^{-1}$

PRODUCT DESCRIPTION :

Betaine (Cocoamide Propyl Betaine) is a RBD palm oil based biodegradable amphoteric surfactant with betaine structure. As an amphoteric surfactant, Betaine is compatible with anionic and cationic surfactants. It is particularly very suitable for mild (skin friendly) preparations such as shampoos, liquid soaps, dishwashing detergents, make up removers, in- bath products etc.

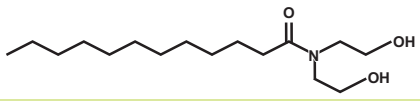
Specifications and properties

Cocamidopropylbetaine is used as a foam booster in shampoos. It is a medium strength surfactant also used in bath products like hand soaps. It is also used in cosmetics as an emulsifying agent and thickener, and to reduce irritation purely ionic surfactants would cause. It also serves as an antistatic agent in hair conditioners, which most often does not irritate skin or mucous membranes. It also has antiseptic properties, making it suitable for personal sanitary products. It is compatible with other cationic, anionic, and nonionic surfactants.CAPB is obtained as an aqueous solution in concentrations of about 30% & 37%

PRODUCT : Betaine OT-30 &Betaine OT-45														
Name of Product	PHYSICAL / CHEMICAL SPECIFICATIONS Properties	Appearance / Phase	Colour (Pt-Co Unit)	Odour	Betaine Content	Salt Content	Moisture Content	Dry Content	pH (direct, T=25oC)	Industry	Toiletries, Shampoo	Liquid Soap & Liquid Detergent	Cosmetics	Construction
BETAINE OT-30	Descri ptions	Low viscous and clear liquid	Light yellow, 350 Pt-Co Unit (max)	No odour	29-33%	6.5% (max)	64% (max)	36-39%	5.0-8.0		Anti-static agent & foam booster	Skin Protection	Skin Protection	Viscosity Modifier
BETAINE OT-45	Descri ptions	Low viscous and clear liquid	Light yellow, 350 Pt-Co Unit (max)	No odour	37%	8.0% (max)	55% (max)	45-47%	5.0-8.0		Anti-static agent & foam booster	Skin Protection	Skin Protection	Viscosity Modifier

PRODUCT:

CDE Synamide (Coco Diethanolamide)Cocamide DEA, or cocamidediethanolamine, is a diethanolamide made by reacting the mixture of fatty acids from coconut oils or palm kernel oils with diethanolamine. It is a viscous liquid and is used as a foaming agent in bath products like shampoos and hand soaps, and in cosmetics as an emulsifying agent. See cocamide for the discussion of the lengths of carbon chains in the molecules in the mixture. The chemical formula of individual components is $CH_3(CH_2)nC(=O)N(CH_2CH_2OH)_2$, where n typically ranges from 8 to 18

Cocamide DEA

Lauramide DEA, the major component of cocamide DEA

Identifiers	
CAS Number	68603-42-9
ECHA InfoCard	100.065.123
EC Number	271-657-0

Name	
Chemical formula	$CH_3(CH_2)nC(=O)N(CH_2CH2OH)_2$, n ~ 8-18
Appearance	Yellowish to yellow viscous liquid
Except where otherwise noted, data are given for materials in their standard state (at 25 C [77 F], 100 kPa).	

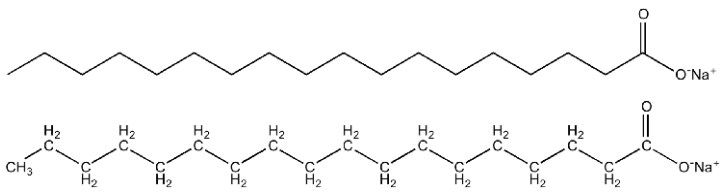
PRODUCT DESCRIPTION :

CDE Synamide derived from RBD palm kernel oil is a thickening and foam stabilizing agent in dish wash and shampoos. CDE functions as a coactive agent to assist in the formulation of well-balanced finished goods by: Increasing the volume of foam produced. stabilizing the foam, particularly under soiled conditions. Improving the feel and texture of the foam Improving the viscosity

PRODUCT : CDE Synamide(Coco Diethanolamide)									
PHYSICAL / CHEMICAL SPECIFICATIONS Properties Descri ptions	Appearance / Phase	Coulor	Specific Gravity	Moisture Content	Amide Content	Free Amine	Free Fatty Acid	pH (1% Solution)	Glycerine Content
Descri ptions	Viscous Liquid	Light Yellow	1.0 (max)	0.5% (max)	84-86%	5.0% (max)	Nil	9.0-11.0	7.5-8.5%

Soap Noodles

Soap Noodles are made from vegetable oils, such as Palm oil,Palm kernel oil and coconut oil. These are 'saponified', usually using sodium hydroxide, to form a salt of the fatty acids. Soap Noodles constitute the very basic form of soap.Soap noodles for cleaning are obtained by treating vegetable oils and fats with a strong base, such as sodium hydroxide or potassium hydroxide in an aqueous solution. Fats and oils are composed of triglycerides; three molecules of fatty acids attach to a single molecule of glycerol. The alkaline solution, which is often called lye (although the term "lye soap" refers almost exclusively to soaps made with sodium hydroxide), induces saponification.



Two equivalent images of the chemical structure of sodium stearate, a typical soap.

In this reaction, the triglyceride fats first hydrolyze into free fatty acids, and then the latter combine with the alkali to form crude soap: an amalgam of various soap salts, excess fat or alkali, water, and liberated glycerol (glycerin). The glycerin, a useful byproduct, can remain in the soap product as a softening agent, or be isolated for other uses.

Soap Noodles Natural White						
Blend Code	TFM	Moisture	Free Alkalinity as NaOH	Chloride Content as NaCl	Glycerol Content	Chelating Agent
NW 8020	78-81%	11 -14%	0.1%max	0.6%max	1%max	Present
NW 9010	78-81%	11 -14%	0.1%max	0.6%max	1%max	Present
NW 9010	70% min	16 max	0.1%max	0.6%max	8%max	Present

Soap Noodles Snow White (Free Fatty Acid)						
Blend Code	TFM	Moisture	Free Fatty Acid as Palmitic	Chloride Content as NaCl	Glycerol Content	Chelating Agent
SW 8020	78-81%	11 -14%	1.3%max	0.4-0.7%	1%max	Present
SW 7525	78-81%	11 -14%	1.3%max	0.4-0.7%	1%max	Present
SW 7030	78-81%	11 -14%	1.3%max	0.4-0.7%	1%max	Present
SW 6040	78-81%	11 -14%	1.3%max	0.4-0.7%	1%max	Present

Soap Noodles Snow White (Free Alkali)						
Blend Code	TFM	Moisture	Free Alkalinity as NaOH	Chloride Content as NaCl	Glycerol Content	Chelating Agent
SW 8020 1	78-81%	11-14%	0.05%max	0.4-0.7%	1%max	Present

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

MSD Global Soap Noodle is a versatile base for dense, creamy and silky lather bar soap. It possesses excellent additive high-loading properties; for example, greater perfume leading results in better perfume retention and subsequently continued release. As it is versatile & specialized in usage, the base offers flexibility for cosmetic & toiletry companies launching new varieties of bar soap trend products in the market. Our Soap Noodle is developed to enhance the look and condition of complex soap shapes and patterning. Its excellent processing characteristics and properties enable the production and easy manufacture of intricate shapes in soap bars.

Soap Noodles Natural White High Glycerine					
Blend Code	TOM (TFM+Glycerine)	Moisture	Free Alkalinity as NaOH	Chloride Content as NaCl	Chelating Agent
NW 9010 G	78% min	14 max	0.1% max	0.6% max	Present
NW 9010 G	76% min	16 max	0.1% max	0.6% max	Present
NW 9010 G	74% min	18 max	0.1% max	0.6% max	Present
NW 9010 G	72% min	20 max	0.1% max	0.6% max	Present
NW 9010 G	65% min	26 max	0.1% max	0.6% max	Present

Translucent Soap Noodles						
Blend Code	TFM	Moisture	Free Fatty Acid as Palmitic	Chloride Content as NaCl	Glycerol Content	Chelating Agent
TNS 9010	67%	15 max	3%max	0.5max	8%max	Present

Laundry Soap Noodles						
Blend Code	TFM	Moisture	Free Alkalinity as NaOH	Chloride Content as NaCl	Glycerol Content	Chelating Agent
LSN 64%	64% min	28 max	0.1 max.	0.6 max.	-	Present
LSN 60%	60% min	32 max	0.1 max	0.6 max	-	Present

Sulphonated Methyl Esters

PRODUCT DESCRIPTION: Sulphonated Methyl Esters is the active cleaning ingredient in laundry detergents also known as Palm-based sulfonated methyl esters. This anionic surfactant is used as an active ingredient to formulate powder detergent. The performance of powder detergents formulated with SME was found to be excellent. At a total concentration of 0.8 g/L, good detergency of PPD was obtained when only using 12% to 18% SME, compared to the commercial detergent with 27% surface-active agent. The foaming power and wetting characteristics of PPD were also comparable to the values for the commercial detergent. The study has shown that PPD were able to biodegrade faster than the commercial detergent, where the maximum time period to reach the pass level (60%) is within 14 days. The toxicity of the PPD, which ranged from 5.66 to 8.0 mg/L, is similar to the toxicity of the commercial.

Laundry detergents plays a major role in removing soils and stains from fabrics in household uses. These detergents are in the form of powder, liquid, or paste and normally comprise a surface active agent or surfactant as the main cleaning ingredient. Manufacturers in the detergent industry have become extremely competitive over the performance , cost effectiveness and environmental attributes of detergents. This has led to the development of the groundbreakingsurfacrant, sulfonated methyl ester (SME) which is more commonly known to the industry as methyl ester sulfonate (MES).

Technology to produce SME involves converting palm oil to methyl ester and then hydrogenating it to reduce the degree of unsaturation while sulfonating the ester. The primary feedstock for SME is methyl ester of Iodine value (IV) less than 0.5. the chain length of the methyl ester affects the detergency of SME at 50 ppm water hardness in the order C16> C14> C18> C12, even though C12 has the highest foam (8).

High quality SME is used as an active ingredient in PPD, where the final SME flakes can be directly agglomerated to forma powder detergent without spray drying. The ability of this technology is an advantage because it allows manufacturers of laundry detergents to use low cost equipment without the energy and environmental penalties of spray drying. Furthermore, this technology (agglomerator) can maintain the stability of the SME in detergents.

Application of SME in the detergent Industry have been widely studied, and these studies show that it has equal or better washing performance than LAS. The difference between the interfacial and physical properties of SME and LAS, such as critical micelle concentration (CMC), surface tension, krafft point, and water hardness tolerance of different chain lengths, have been well documented. Due to its excellent detergency and lower CMC, less SME is required in detergents than other surfactants for the same level of performance.

Sulphonated Methyl Esters 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, Sulphonated Methyl Esters enables direct addition to detergent formulas in the post-addition step in the manufacturing process.

Sulphonated Methyl Esters					
Parameter	Unit	Method	78%min	83%min	87%min
Appearance	-	Visual	Off white Powder	Off white Powder	Off white Flakes
Active Matter	%	LT 7.03	78 min	83 min	87 min
Color	Klett at 5% Soln	LT 7.01	50 Max	50 Max	50 Max
Bulk Density	Kg/L	LT- 7.12	0.5 - 0.8	0.5 - 0.8	0.4 - 0.7
pH	-	LT 7.02	4.5 - 7.0	4.5 - 7.0	4.5 - 7.0
Zeolite Content	%	LT 7.11	8 - 12	3 - 7	Nil
Moisture Content	%	LT 7.07	6 max	5 max	4 max

Fractionated Fatty Acid

MSD Global is RSPO certified to offer sustainable palm oil alternatives to our customers and has the ability to produce over 70 different types of fatty acids including stearic acid, caprylic acid, oleic acid, lauric acid, myristic acid, coconut acid and distilled fatty acid. Fatty acids can be used in many different applications, including food, cosmetics, pharmaceuticals, textile, plastic, soap and detergents.

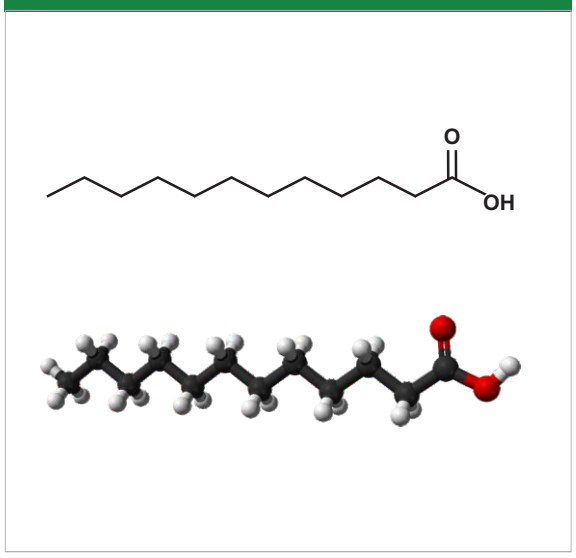
MSD Global fractionated fatty acids are produced in accordance with the required demands and quality standards such as GMP and HACCP making them suitable for food, pharmaceutical and personal care applications. It can be used as-is, or as a derivative. Fatty acids may be found in plastics, rubber, textiles,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

Fatty Acid Fractions

1) Lauric Acid

Synonyms : Lauric acid or systematically, dodecanoic acid, is a saturated fatty acid with a 12-carbon atom chain, thus having many properties of medium chain fatty acids, is a white, powdery solid with a faint odor of baby oil or soap. The salts and esters of lauric acid are known as laurates used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in cosmetics, liquid and transparent soaps; Used in agricultural chemicals, food etc.Like many other fatty acids, lauric acid is inexpensive, has a long shelf-life, is non-toxic and is safe to handle. It is used mainly for the production of soaps and cosmetics. For these purposes, lauric acid is reacted with sodium hydroxide to give sodium laurate, which is a soap. Most commonly, sodium laurate is obtained by saponification of various oils, such as coconut oil. These precursors give mixtures of sodium laurate and other soaps

Lauric acid



Name	
IUPAC name	Dodecanoic acid
CAS Number	143-07-7
Other names	n-Dodecanoic acid, Dodecylic acid, Dodecoic acid, Laurostearic acid, Vulvic acid, 1-Undecanecarboxylic acid, Duodecylic acid, C12:0 (Lipid numbers)

Identifiers	
Chemical formula	$C_{12}H_{24}O_2$
Molar mass	200.32 g·mol1^{-1}
Appearance	White powder
Odor	Slight odor of bay oil
Density	1.007 g/cm³ (24°C) 0.8744 g/cm³ (41.5°C) 0.8679 g/cm³ (50°C)
Melting point	43.8°C (110.8°F; 316.9 K)
Density	297.9°C (568.2°F; 571.0 K) 282.5°C (540.5°F; 555.6 K) at 512 mmHg 225.1°C (437.2°F; 498.2 K) at 100 mmHg

Lauric Acid

Product Description	Titre Degree	Lodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 5 1/4 LOV. Max	Colour APHA max	Typical Fatty Acid composition %				
							C10	C12	C14	C16	Others
Lauric Acid 70%min	32.0-36.0	1.0 max	267.0-275.0	268.0-276.0	2Y 0.2 R	40	2.0 max	70.0 min	23.0-28.0	4.0 max	1.0 max
Lauric Acid 98%min	42.0-44.0	0.5 max	278.0-282.0	279.0-283.0	2Y 0.2 R	40	1.0 max	98.0 min	2.0 max		1.0 max
Lauric Acid 99%min	42.0-44.0	0.5 max	278.0-282.0	279.0-283.0	2Y 0.2 R	40	1.0 max	99.0 min	1.0 max		1.0 max

2)Palmitic Acid : Palmitic acid, or Hexadecanoic Acid

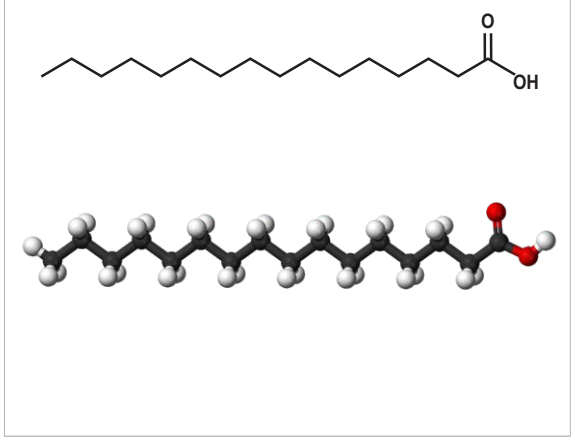
Palmitic Acid: Palmitic acid, or hexadecanoic acid in IUPAC nomenclature, is the most common saturated fatty acid. Its chemical formula is CH3(CH2)14COOH, and its C:D is 16:0. As its name indicates, it is a major component of the oil from the fruit of oil palms (palm oil). Palmitic acid was discovered by Edmond Fremy in 1840, in saponified palm oil. This remains the primary industrial route for its production, with the triglycerides (fats) in palm oil being hydrolysed by high temperature water (above 200 C or 390 F), and the resulting mixture fractionally distilled to give the pure product.

Used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in personal care products, liquid and transparent soaps, corrosion/rust inhibitor for antifreeze; Used in agricultural chemicals, food, adhesive, crayon, candles, cements, coatings, inks, leather waxes, lubricants, metal workings, mining, pencils, capsules and ointments, plastics, rubber, textiles etc.

Palmitic acid is used to produce soaps, cosmetics, and industrial mold release agents. These applications use sodium palmitate, which is commonly obtained by saponification of palm oil. To this end, palm oil, rendered from palm tree is treated with sodium hydroxide (in the form of caustic soda or lye), which causes hydrolysis of the ester groups, yielding glycerol and sodium palmitate.

Because it is inexpensive and adds texture and "mouth feel" to processed foods (convenience food), palmitic acid and its sodium salt find wide use in foodstuffs. Sodium palmitate is permitted as a natural additive in organic products. The aluminium salt is used as a thickening agent of napalm used in military actions. Hydrogenation of palmitic acid yields cetyl alcohol, which is used to produce detergents and cosmetics.

Palmitic acid



Name	
IUPAC name	Hexadecanoic acid
CAS Number	57-10-3
Other names	Palmitic acid C16:0 (Lipid numbers)

Identifiers	
Chemical formula	$C_{16}H_{32}O_2$
Molar mass	256.43 g·mol1^{-1}
Appearance	White Crystals
Density	0.852 g/cm^3 (25°C) 0.8527 g/cm^3 (62°C)
Melting Point	62.9°C (145.2°F; 336.0 K)
Boiling Point	351352°C (664666°F; 624625 K) 271.5°C (520.7°F; 544.6 K) at 100 mmHg 215°C (419°F; 488 K) at 15 mmHg

Palmitic Acid

Product Description	Titre Degree	Iodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 5 1/4 LOV. Max	Colour APHA max	Typical Fatty Acid composition %						
							C12	C14	C16	C18	C18:1	C18:2	Others
Palmitic Acid 60% min	54.0-56.0	0.5 max	207.0-213.0	208.0-214.0	2Y 0.2 R	60	2.0 max	3.0 max	60.0-65.0	30.0-38.0	0.5max		1.0 max
Palmitic Acid 80% min	55.0 min	15.0 max	212.0-222.0	213.0-225.0	1.0 R		2.0 max	5.0 max	80.0 min	2.0 max	5.0-11.0	3.0max	1.0 max
Palmitic Acid 95% min	60.0-63.0	0.5 max	217.0-220.0	218.0-221.0	2Y 0.2 R	40	1.0 max	2.0 max	95.0 min	3.0 max			1.0 max
Palmitic Acid 98% min	61.0-63.0	0.5 max	217.0-220.0	218.0-221.0	2Y 0.2 R	40		1.0 max	98.0 min	1.0 max			1.0 max

3)Stearic Acid:

is a saturated fatty acid with an 18-carbon chain and has the IUPAC name octadecanoic acid. It is a waxy solid and its chemical formula is C17H35C. The salts and esters of stearic acid are called stearates. As its ester, stearic acid is one of the most common saturated fatty acids found in nature following palmitic acid. The triglyceride derived from three molecules of stearic acid is called stearin.

Stearic acid is obtained from fats and oils by the saponification of the triglycerides using hot water (about 100 C). The resulting mixture is then distilled. Commercial stearic acid is often a mixture of stearic and palmitic acids, although purified stearic acid is available.

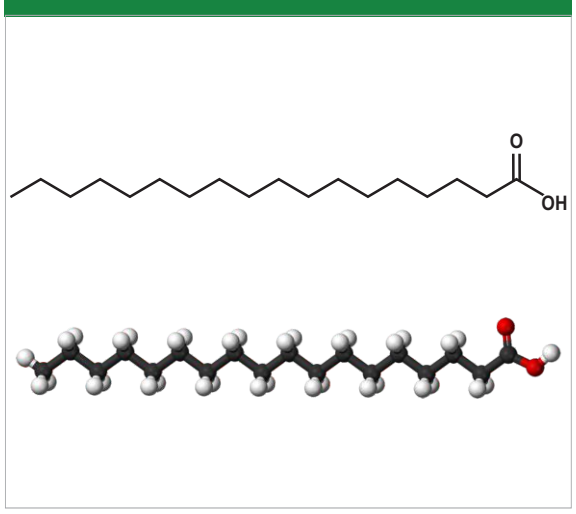
Soaps, cosmetics, detergents: Stearic acid is mainly used in the production of detergents, soaps, and cosmetics such as shampoos and shaving cream products. Soaps are not made directly from stearic acid, but indirectly by saponification of triglycerides consisting of stearic acid esters. Esters of stearic acid with ethylene glycol, glycol stearate, and glycol distearate are used to produce a pearly effect in shampoos, soaps, and other cosmetic products. They are added to the product in molten form and allowed to crystallize under controlled conditions. Detergents are obtained from amides and quaternary alkylammonium derivatives of stearic acid.Hydrogenation of palmitic acid yields cetyl alcohol, which is used to produce detergents and cosmetics.

Lubricants, softening and release agents: In view of the soft texture of the sodium salt, which is the main component of soap, other salts are also useful for their lubricating properties. Lithium stearate is an important component of grease. The stearate salts of zinc, calcium, cadmium, and lead are used to soften PVC. Stearic acid is used along with castor oil for preparing softeners in textile sizing. They are heated and mixed with caustic potash or caustic soda. Related salts are also commonly used as release agents, e.g. in the production of automobile tires.

Niche uses:

- Being inexpensively available and chemically benign, stearic acid finds many niche applications, for example, in making plaster castings from a plaster piece mold or waste mold and in making the mold from a shellacked clay original
- Stearic acid is also used as a negative plate additive in the manufacture of lead-acid batteries
- Fatty acids are classic components of candle-making. Stearic acid is used along with simple sugar or corn syrup as a hardener in candies.
- Stearic acid is used to produce dietary supplements.
- In fireworks, stearic acid is often used to coat metal powders such as aluminium and iron. This prevents oxidation, allowing compositions to be stored for a longer period of time.
- Stearic acid is a common lubricant during injection molding and pressing of ceramic powders. It is also used as a mold release for foam latex that is baked in stone molds.Stearic acid NamesChemical formulaC18H36O2

Stearic Acid



Name	
IUPAC name	Octadecanoic Acid
CAS Number	57-11-4
Other names	Stearic Acid C18:0 (Lipid numbers)

Identifiers	
Chemical formula	$C_{18}H_{36}O_2$
Molar mass	286.48 g·mol1^{-1}
Appearance	White solid
Odor	Pungent, oily
Density	0.9408 g/cm³ (20°C) 0.847 g/cm³ (70°C)
Melting Point	69.3°C (156.7°F; 342.4 K)
Boiling Point	361°C (682°F; 634 K) Decomposes 232°C (450°F; 505 K) at 15 mmHg

Stearic Acid

Product Description	Titre Degree	Lodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 5 1/4 LOV. Max	Colour APHA max	Typical Fatty Acid composition %					
							C12	C14	C16	C18	C18:1	Others
Stearic Acid 50%min	55.0-58.0	1.0 max	205.0-208.0	206.0-209.0	2Y 0.2 R	50		1.0 max	44.0-49.0	50.0-56.0	1.0 max	1.0 max
Stearic Acid 65%min	58.0-62.0	1.0 max	200.0-207.0	201.0-208.0	2Y 0.2 R	50		1.0 max	30.0-35.0	65.0-70.0	1.0 max	1.0 max
Stearic Acid 70%min	59.0-63.0	1.0 max	200.0-207.0	201.0-208.0	2Y 0.2 R	50		1.0 max	24.0-30.0	70.0-75.0	1.0 max	1.0 max
Stearic Acid 90%min	65.0-68.0	1.0 max	196.0- 202.0	197.0-203.0	2Y 0.2 R	60			4.0-7.0	92.0 min	1.0 max	1.5 max
Stearic Acid 98%min	67.0-69.0	1.0 max	194.0-198.0	195.0-199.0	2Y 0.2 R	60			2.0 max	98.0 min	1.0 max	1.5 max
Triple Pressed Stearic Acid (3842)	54.0-57.0	0.5 max	207.0-212.0	208.0-213.0	2Y 0.2 R	60		2.0 max	58.0-62.0	38.0-42.0	0.5 max	1.0 max
Triple Pressed Stearic Acid (4247)	55.0-56.5	0.5 max	205.0-211.0	206.0-212.0	2Y 0.2 R	40	1.0 max	2.0 max	52.0-56.0	42.0-47.0	0.5 max	1.0 max
Rubber grade stearic acid	52.0 min	6.0 max	195.0min	196.0min	20Y 2 R				Variable			

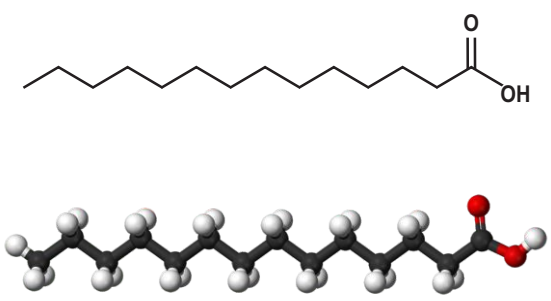
Triple Pressed Stearic Acid: Used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in personal care products, liquid and transparent soaps, corrosion/rust inhibitor for antifreeze; Used in agricultural chemicals, food, adhesive, crayon, candles, cements, coatings, inks, leather waxes, lubricants, metal workings, mining, pencils, capsules and ointments, plastics, rubber, textiles etc.

Rubber Grade Stearic Acid: Used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in personal care products, liquid and transparent soaps, corrosion/rust inhibitor for antifreeze; Used in agricultural chemicals, food, adhesive, crayon, candles, cements, coatings, inks, leather waxes, lubricants, metal workings, mining, pencils, capsules and ointments, plastics, rubber, textiles etc.

4) Myristic Acid:

Myristic acid, (IUPAC systematic name: 1-tetradecanoic acid), is a common saturated fatty acid with the molecular formula $CH_3(CH_2)_{12}COOH$. Its salts and esters are commonly referred to as myristates.
It is named after the binomial name for nutmeg(Myristicafragrans) Used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in cosmetics, liquid and transparent soaps; Used in agricultural chemicals, food etc.

Myristic Acid



Name	
IUPAC name	Tetradecanoic Acid
CAS Number	544-63-8
Other names	Palmitic acid C14:0 (Lipid numbers)

Identifiers	
Chemical formula	$C_{14}H_{28}O_2$
Molar mass	228.38 g·mol1^{-1}
Appearance	White Crystals
Density	1.03 g/cm³ (-3 °C) 0.99 g/cm³ (24 °C) 0.8622 g/cm³ (54 °C)
Melting Point	54.4 °C (129.9 °F; 327.5 K)
Boiling Point	326.2 °C (619.2 °F; 599.3 K) at 760 mmHg 250 °C (482 °F; 523 K) at 100 mmHg 218.3 °C (424.9 °F; 491.4 K) at 32 mmHg

Myristic Acid

Product Description	Titre Degree	Lodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 5 1/4 LOV. Max	Colour APHA max	Typical Fatty Acid composition %			
							C12	C14	C16	Others
Myristic Acid 98%min	52.0-54.0	0.5 max	243.0-248.0	244.0-249.0	2Y 0.2 R	40	2.0 max	98.0 min	2.0 max	1.0 max
Myristic Acid 99%min	52.0-54.0	0.5 max	243.0-248.0	244.0-249.0	2Y 0.2 R	40	1.0 max	99.0 min	1.0 max	1.0 max

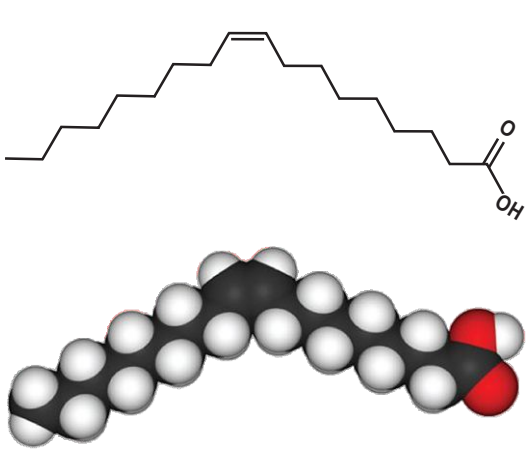
5) Oleic Acid

Oleic Acid is a fatty acid that occurs naturally in various vegetable fats and oils. It is an odorless, colorless oil, though commercial samples may be yellowish. In chemical terms, oleic acid is classified as a monounsaturated omega-9 fatty acid, abbreviated with a lipid number of 18:1 cis-9. It has the formula $CH_3(CH_2)_7CH=CH(CH_2)_7COOH$ Oleic acid undergoes the reactions of carboxylic acids and alkenes. It is soluble in aqueous base to give soaps called oleates. Iodine adds across the double bond. Hydrogenation of the double bond yields the saturated derivative stearic acid. Oxidation at the double bond occurs slowly in air, and is known as racidification in foodstuffs or drying in coatings. Reduction of the carboxylic acid group yields oleyl alcohol. Ozonolysis of oleic acid is an important route to azelaic acid. The coproduct is nonanoic acid:

It is manufactured through the saponification and acidification of vegetable oils. Oleic acid is an indispensable nutrient in animal food. Its lead salt, manganese cobalt salt belong to paint driers; its copper salt can be used as fish net preservatives; its aluminum salt can be used as the water repellent agent of fabric as well as the thickener of some lubricants. When being epoxidized, oleic acid can produce epoxy oleate (plasticizer). Upon subjecting to oxidative cracking, it can generate azelaic acid (raw material of polyamide resin). It can be sealed. Store it on darkness.

Oleic acid exists in vegetable oil fat in large amount, being mainly in the form of glyceride. Some simple oleic esters can be applied to the textile, leather, cosmetics and pharmaceutical industries. The alkali metal salt of oleic acid can be dissolved in water, being one of the main components of soap. The lead, copper, calcium, mercury, zinc and other salts of oleic acid are soluble in water. It can be used as dry lubricants, paint drying agent and waterproofing agent.

Oleic Acid



Name	
IUPAC name	(9Z)-Octadec-9-enoic acid
CAS Number	112-80-1
Other names	Oleic acid (9Z)-Octadecenoic acid (Z)-Octadec-9-enoic acid cis-9-Octadecenoic acid cis-Δ9-Octadecenoic acid 18:1 cis-9

Identifiers	
Chemical formula	$C_{18}H_{34}O_2$
Molar mass	282.47 gmol $^{-1}$
Appearance	Pale yellow or brownish yellow oily liquid with lard-like odor
Density	0.895 g/mL
Melting Point	13 to 14°C (55 to 57°F; 286 to 287 K)
Boiling Point	195°C (383°F; 468 K)
Solubility in Water	Insoluble

Oleic Acid

Product Description	Titre Degree	Lodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 5 1/4 LOV. Max	Typical Fatty Acid composition %									
						C6	C8	C10	C12	C14	C16	C18	C18:1	C18:2	Others
Oleic Acid 72% min	8.0 max	88.0-95.0	195.0-205.0	197.0-207.0	15Y 2.0R	13.0 Max							72.0 min	13.0 max	1.0 max
Oleic Acid 75% min	7.0 max	88.0-95.0	195.0-205.0	197.0-207.0	8Y 1 R	12.0 Max							75.0	13.0 max	1.0 max
Oleic Acid 80% min	9.0 max	94.0 102.0	194.0-204.0	195.0-205.0	10Y 1.5 R	6.0 Max							80.0 min	14.0 max	1.0 max

Chemical properties

It appears as colorless to pale yellow oily liquid. It is insoluble in water but soluble in benzene, chloroform and is miscible with alcohol and ether
H17C8CH=CHC7H14CO2H + 4"O" → H17C8CO2H + HO2CC7H14CO2H

Esters of azelaic acid find applications in lubrication and plasticizers.

1) The principal use of oleic acid is as a component in many foods, in the form of its triglycerides. It is a component of the normal human diet as a part of animal fats and vegetable oils.Oleic acid as its sodium salt is a major component of soap as an emulsifying agent. It is also used as an emollient. Small amounts of oleic acid are used as an excipient in pharmaceuticals, and it is used as an emulsifying or solubilizing agent in aerosol products.

2) Used in production of various esters, fatty alcohols, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, oxazolines for paint binder, surfactants in personal care products, liquid and transparent soaps, corrosion/rust inhibitor for antifreeze; Used in agricultural chemicals, food, adhesive, crayon, candles, cements, coatings, inks, leather waxes, lubricants, metal workings, mining, pencils, capsules and ointments, plastics, rubber, textiles etc.
3) Oleic acid is an unsaturated fatty acid that is the most widely distributed and abundant fatty acid in nature. It is used commercially in the preparation of oleates and lotions, and as a pharmaceutical solvent

4) Uses

It can be used as antifoaming agent, fragrance, binder, and a lubricant.

It can be used for the manufacture of soap, lubricants, flotation agents, ointment and oleate, being also an excellent solvent for fatty acids and oil-soluble substances.

It can be used for the precise polishing of gold, silver and other precious metals as well as polishing in electroplating industry.

It can be used as analysis reagents, solvents, lubricants and flotation agent, but also applied to the sugar processing industry

Oleic acid is an organic chemical raw material and can produce epoxidized oleic acid ester after epoxidation. It can be used as plastic plasticizer and for production of azelaic acid by oxidation. It is the raw material of polyamide resin. In addition, oleic acid can also be used as pesticide emulsifier, printing and dyeing auxiliaries, industrial solvents, metal mineral flotation agent, and release agent. Moreover, it can be used as the raw material for manufacture of carbon paper, round bead and typing wax paper. Various kinds of oleate products are also important derivatives of oleic acid. As a chemical reagent, it can be used as a chromatographic comparative sample and for biochemical research, detection of calcium, copper and magnesium, sulfur and other elements.

It can be applied to biochemical studies. It can activate the protein kinase C in the liver cells

6) Caproic acid

As flavoring and perfuming agent; Used in production of metal working fluid to enhance cutting capabilities, grinding capabilities and rust resistance of the fluid; Used in production of specialty soaps; As a chain terminator in the production of polyester plasticizer, etc.

7) Caprylic Acid, Capric Acid, Caprylic-Capric Acid

Used in production of alkyl chlorides for agricultural products, methyl caprylate/caprate, fatty alcohols, acid chlorides, fatty acid isethionates, metallic soaps, fatty acid sarcosinates, imidazolines, fatty amines, MCT oils, polyol esters as lubricant in metal working and emollient in personal care products, oxazolines for paint binder; Used in herbicide, animal feed, corrosion/rust inhibitors for antifreeze, flotation agents in mining, creams and lotions formulations, plasticizers etc.

8) Eruric Acid

Used in production of fatty alcohol and their derivatives, esters, amides and surfactant; Used in coating and personal care; As plastic additives, lubricants etc.

9) Behenic Acid

Used in production of fatty alcohol and their derivatives; Used in paper chemicals, engineering plastics/moulding, personal care, I & I products, pharma intermediates etc

Fatty Alcohol

MSD Global has been a leader in the industrial production of oleochemicals . Fatty alcohols such as lauryl alcohol, myristyl alcohol and cetyl alcohol represent some of our most popular market segments. All of our products are vegetable-based, not tested on animals and free of tree nuts, peanuts, gluten, eggs, soy and other common allergens.Laurel/myristyl alcohol and related oleochemical blends are available in drums, bags and liquid bulk. Learn more about our products by downloading the detailed spec sheet. To request a quote, submit a request online or contact us today.

Natural fatty alcohols (or long-chain alcohols) are straight-chain primary alcohols, ranging from as few as 4-6 carbons to as many as 22-26. They are derived from natural fats and oils by hydrogenating the corresponding fatty methyl ester and subsequent fractionation. The precise chain lengths vary with the triglyceride source. Natural fatty alcohols have an even number of carbon atoms with a single functional alcohol group (-OH) attached at the end of the carbon.

Fatty alcohols are mainly used in the production of detergents and surfactants. They are also used in the manufacture of solvents, plasticizers, lubricants, cosmetics, inks, adhesives and foods. MSD Global offers fatty alcohol products with chain lengths ranging from C8 to C22 and also has the capability of supplying custom blends.

Surfactants and Esters: A Chemical Intermediate to Make Fatty Alcohol Sulfates and Ethoxylates
Lubricants and Greases: Acrylates and Methacrylates, Fatty Alcohol Esters
Personal Care: Emollient, Emulsifier, Viscosity Modifier
Soaps and Detergents: Foam Stabilizer, Cleaning Booster
Textiles: Intermediate to Make Surfactants Used in Fabric Processing

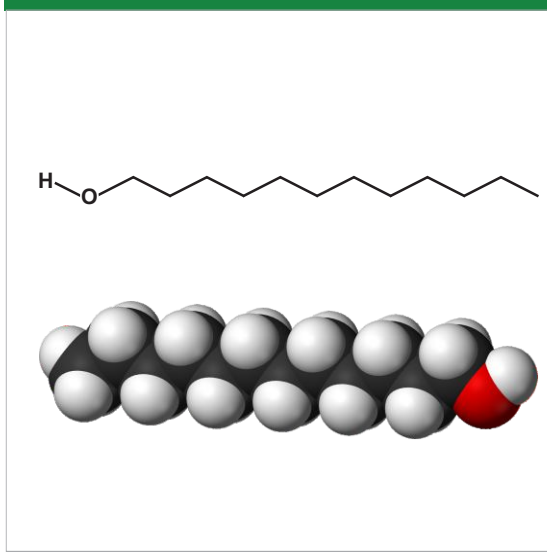
MSD Global fatty alcohols are derived from vegetable oils and are available in various fractions. The most important market for natural fatty alcohols; especially mid-cut and long chain alcohols, is for household detergents. Fatty alcohols are generally applied as a derivative for surfactants and detergent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

1) Lauryl Alcohol: Dodecanol (systematically named dodecan-1-ol) is an organic compound with the chemical formula$CH_3(CH_2)_{10}CH_2OH$ (also written as $C_{12}H_{26}O$). It is tasteless, colourless solid with a floral smell. It is classified as a fatty alcohol.

Derivatives of the C_{12} alcohol is used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc.

It is obtained from palm kernel or coconut oil fatty acids .Dodecanol is used to make surfactants, lubricating oils, pharmaceuticals, in the formation of monolithic polymers and as a flavor enhancing food additive. In cosmetics, dodecanol is used as an emollient. It is also the precursor to dodecanal, an important fragrance.

Dodecanol



Name	
IUPAC name	Dodecanoic acid
CAS Number	112-53-8
Other names	Dodecanol 1-Dodecanol Dodecyl alcohol Lauryl alcohol

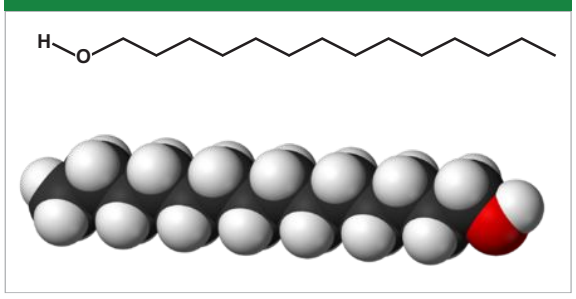
Identifiers	
Chemical formula	$C_{12}H_{26}O$
Molar mass	186.34
Appearance	Colorless solid
Density	0.8309
Melting point	24 °C (75 °F; 297 K)
Boiling point	259 °C (498 °F; 532 K)
Solubility in water	0.004 g/L
Solubility in ethanol and diethyl ether	Soluble

2) Myristyl Alcohol: 1-Tetradecanol, or commonly Myristyl Alcohol is a straight-chain saturated fatty alcohol, with the molecular formula $C_{14}H_{30}O$. 1-Tetradecanol may be prepared by the hydrogenation of myristic acid (or its esters); myristic acid itself can be found in palm kernel oil and coconut oil and it is from these that the majority of 1-tetradecanol is produced.

As with other fatty alcohols, 1-tetradecanol is used as an ingredient in cosmetics such as cold creams for its emollient properties. It is also used as an intermediate in the chemical synthesis of other products such as surfactants.

Derivatives of the C14 alcohol is used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc.

1-Tetradecanol



Name	
IUPAC name	Tetradecan-1-ol
CAS Number	112-72-1
Other names	Myristyl alcohol Tetradecyl alcohol

Identifiers	
Chemical formula	$C_{14}H_{30}O$
Molar mass	214.39 $gmol^{-1}$
Density	0.824 g/cm^3
Melting point	38 °C (100 °F; 311 K)
Boiling point	>260 °C

Functions: Myristyl Alcohol is a fatty-alcohol used as an emollient in cosmetics and skin care products (Source). According to research, it is primarily used to inhibit a formula from separating into its oil and liquid components. However, Myristyl Alcohol can be drying, as can most fatty-alcohols.

Myristyl Alcohol is also used for other properties, including as an: Emulsion Stabilizer; Skin-Conditioning Agent; Surfactant; Viscosity Increasing Agent; Foaming Agent; and Fragrance Ingredient.

3) Lauryl-Myristyl Alcohol: (Synonym: Dodecanol Tetradecanol) (Chain Length: C1214 Alcohol) (CAS Number: 67762-41-8)

Laurel/myristyl alcohol is a mix of C12 (laurel alcohol) and C14 (myristyl alcohol) fatty alcohols. Used in many industrial and manufacturing processes, C12 C14 alcohols are 100-percent vegetable-based and GMO-free. Fatty alcohols have many uses in today's manufacturing facilities. They are often employed as a chemical intermediate when producing surfactants, detergents and esters used in cleaning products. As well, they possess natural foaming stabilizing and amphi pathic properties, adding to their usefulness as a detergent or soap. Other uses of fatty alcohols include as an emollient, emulsifier or viscosity modifier in cosmetics and personal care products, as well as in lubricants and greases. They can also be used to process textiles.

Derivatives of the detergent range C12 to C14 alcohols are used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc.

Industries / Applications

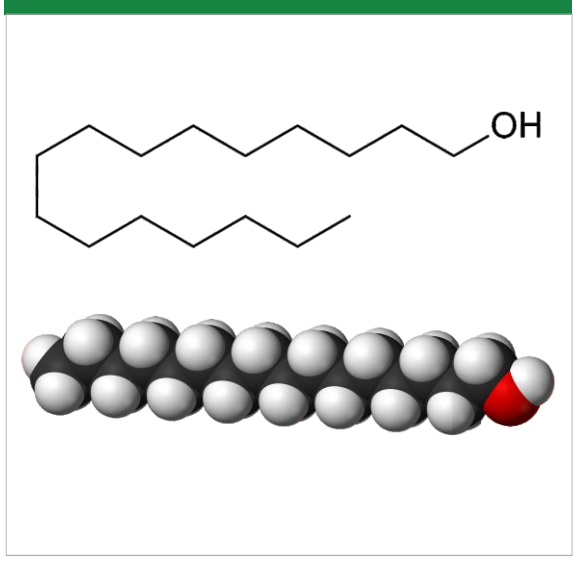
Chemical Derivatives:	Ether sulfates, Alkoxylates, APGs, Sulfates, Esters
Household Care:	Alkoxylates, Ether sulfates, APGs, Sulfates, Esters
Industrial & Institutional Cleaners:	Ether sulfates, APGs, Sulfates, Esters, Alkoxylates
Lubricants and Greases:	Phosphate esters for extreme pressure additives
Oilfield Chemicals:	Esters, Ethoxylates
Paints, Coatings & Inks:	Glycidyl ether reactive diluents for epoxy resins
Polymers & Plastics:	Glycidyl ether reactive diluents for epoxy resins
Textile Chemicals:	Esters, Ethoxylates

Fatty Alcohol C12 C14, C12 C18																
Name of the product	Appearance at 25 Deg. C	Acid Value mg KOH /gm	Sap. Value mg KOH /gm	Iodine Value gm /100gm	Colour APHA	Hydro carbons % by wt.	Hydroxyl Value mg KOH /gm	Moisture % by wt.	Carbon Chain Distribution by GLC (%)				Average Mol. Wt.gm / mol.	Solid-ification Range Deg. C	Density at 30 Deg. C gm/cc	Flash Point Deg.C	Boiling Range Deg.C.
									C8&C10	C12	C14	C16&C18					
LAURYL MYRISTYL ALCOHOL, C12-C14	Colourless Liquid	0.1 Max.	0.5 Max	0.3 Max.	10 Max.	0.5 Max.	285-295	0.1 Max.	0-2	70-78	22-30	< 2	190-197	17-23	0.820-0.830	Approx. 135	255-295
Lauryl- Stearyl Alcohol C12-C18	Colorless liquid to white solid	0.1 Max.	0-1.2	0-0.5	10 Max.	0 - 0.5	265-279	0-0.2	0-3	48-58	18-24	C16 8-12 C18 11-15		18-23			

4) Cetyl alcohol, also known as hexadecan-1-ol and palmityl alcohol, is a fatty alcohol with the formula CH3(CH2)15OH. At room temperature, cetyl alcohol takes the form of a waxy white solid or flakes. The name cetyl derives from the whale oil (Latin: cetus) from which it was first isolated. Preparation: Modern production is based around the reduction of palmitic acid, which is obtained from palm oil.

Uses: Cetyl alcohol is used in the cosmetic industry as an opacifier in shampoos, or as an emollient, emulsifier or thickening agent in the manufacture of skin creams and lotions. It is also employed as a lubricant for nuts and bolts, and is the active ingredient in some "liquid pool covers" (forming a surface layer to reduce evaporation and retain heat).

Cetyl alcohol



Name	
IUPAC name	Hexadecan-1-ol
CAS Number	36653-82-4
Other names	Cetanol, Cetyl alcohol, Ethal, Ethol, Hexadecanol, Hexadecyl alcohol, Palmityl alcohol

Identifiers	
Chemical formula	$C_{16}H_{34}O$
Molar mass	242.45 $gmol^{-1}$
Appearance	White crystals or flakes
Odor	Very Faint
Density	0.811 g/cm^3
Melting point	49.3 °C (120.7 °F; 322.4 K)
Boiling point	344 °C (651 °F; 617 K)
Solubility in water	Insoluble
Solubility	Very soluble in ether, benzene, chloroform soluble in acetone slightly soluble in alcohol

Functions of Cetyl Alcohol: Works as an emollient, emulsifier, thickener and carrying agent for other ingredients contained in a cosmetic solution. It keeps the oil and water parts of an emulsion from separating, and gives products good spreadability. As a thickening agent and surfactant, it helps alter the viscosity and increase the foaming capacity of non-aqueous (i.e. lotions) and aqueous solutions (i.e. shampoo). It is often misinterpreted as an "alcohol" related to ethyl or rubbing alcohol, both of which can be extremely drying to the skin. The truth, in fact, is quite the opposite, as cetyl alcohol is well known to effectively condition and soften the skin and hair. Because of its multi-functional capabilities, this ingredient is used in a wide range of personal care products such as moisturizer, face cream, shampoo/conditioner, anti-aging treatment, hair dye, sunscreen, cleanser and lipstick.

Product Name	Appearance at 25 Deg. C	Colour (APHA Units)	Acid Value, mg of KOH/gm	Sap Value, mg of KOH/gm	Iodine Value, (Wij's) gms. I2/100 gms.	Hydroxyl Value, mg of KOH/gm	Moisture % by wt.	Solid-ification range (C)	Carbon Chain Distribution by GLC (%)					Hydrocarbon, % by GC
									C12 alcohol	C14 alcohol	C16 alcohol	C18 alcohol	C20 & Higher alcohol	
Fatty Alcohol C16 (Cetyl Alcohol)	White solid or pastilles	10 Max.	0.1 Max	0.5 Max.	0-0.5	228-233	0.3 Max.	47-50	2 max		98 min	2 max		0-0.5

5) Lauryl-Cetyl Alcohol Derivatives of the detergent range C12 to C16 alcohols are used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, et

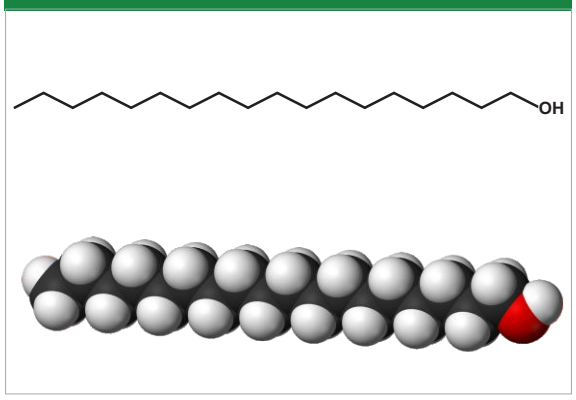
6) Lauryl-Stearyl Alcohol

Derivatives of the detergent range C12 to C16 alcohols are used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc

7) Stearyl Alcohol: Stearyl alcohol

(also known as octadecyl alcohol or 1-octadecanol) is an organic compound with the formula $CH_3(CH_2)_{16}CH_2OH$. It is classified as a fatty alcohol. It takes the form of white granules or flakes, which are insoluble in water. It has a wide range of uses as an ingredient in lubricants, resins, perfumes and cosmetics. It is used as an emollient, emulsifier, and thickener in ointments of various sorts, and is widely used as a hair coating in shampoos and hair conditioners. It has also found application as an evaporation suppressing monolayer when applied to the surface of water. Stearyl alcohol is prepared from stearic acid or some fats by the process of catalytic hydrogenation. It has low toxicity. Derivatives of the C18 alcohol is used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc.

Stearyl alcohol



Name	
IUPAC name	Octadecan-1-ol
CAS Number	112-92-5
Other names	Octadecyl alcohol, Stearyl alcohol

Identifiers	
Chemical formula	$C_{18}H_{38}O$
Molar mass	270.49 g/mol
Appearance	White solid
Density	0.812 g/cm^3
Melting point	59.4°to 59.8°C (138.9 to 139.6F;332.5 to 332.9K)
Boiling point	210°C (410°F; 483K) at 15mmHg (2.0kPa)
Solubility in water	1.1 x 10^{-3} mg/L

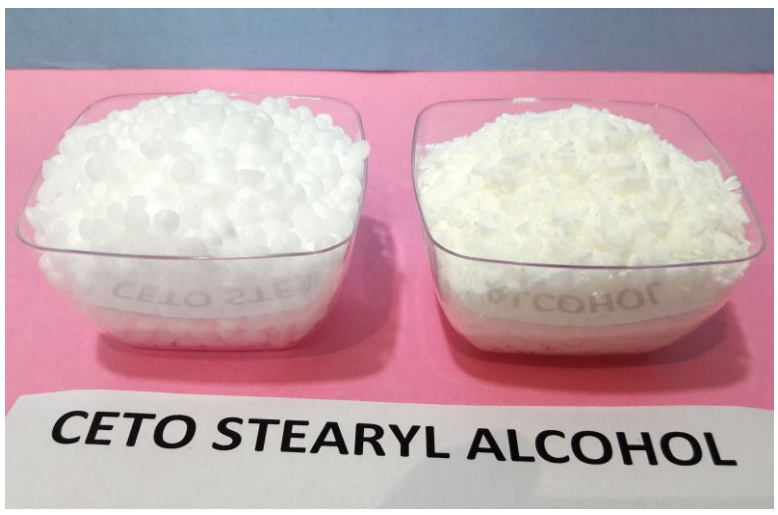
Functions: Stearyl Alcohol is a naturaly fatty alcohol derived from stearic acid, coconut oil or vegetable fatty acids, and is used to soothe and soften as a conditioning agent and as an emulsifier. It is often found as a hair coating ingredient in shampoos and conditioners, and an emollient in creams and lotions for the skin. It can also be used to thicken formulas, adding body and viscosity.

Product Name	Appearance at 25 Deg. C	Colour (APHA Units)	Acid Value, mg of KOH/gm	Sap Value, mg of KOH/gm	Iodine Value, (Wij's) gms. I2/100 gms.	Hydroxyl Value, mg of KOH/gm	Moisture % by wt.	Solid-ification range (C)	Carbon Chain Distribution by GLC (%)					Hydrocarbon, % by GC
									C12 alcohol	C14 alcohol	C16 alcohol	C18 alcohol	C20 & Higher alcohol	
Fatty Alcohol C18 (Stearyl Alcohol)	White solid or pastilles	10 Max.	0.1 Max	0.5 Max.	0-0.7	206-210	0.3 Max.	56-58		2 Max.		98 min	2.0 Max.	0-0.5

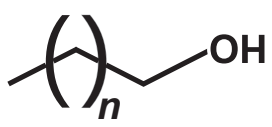
8) Ceto-Stearyl Alcohol: Cetostearyl alcohol, cetearyl alcohol or cetylstearyl alcohol

is a mixture of fatty alcohols, consisting predominantly of cetyl and stearyl alcohols and is classified as a fatty alcohol. It is used as an emulsion stabilizer, opacifying agent, and foam boosting surfactant, as well as an aqueous and nonaqueous viscosity-increasing agent. It imparts an emollient feel to the skin and can be used in water-in-oil emulsions, oil-in-water emulsions, and anhydrous formulations. It is commonly used in hair conditioners and other hair products.

Derivatives of the detergent range C16 to C18 alcohols are also used in light- and heavy-duty detergents, laundry pre-softeners, hard surface cleaners, disinfectant, cleaners, metal cleaners, textile processing, pulp and paper processing, wastepaper deinking, agricultural uses in pesticides and soil conditioners, and in metalworking as surface lubricants, etc



Cetostearyl alcohol



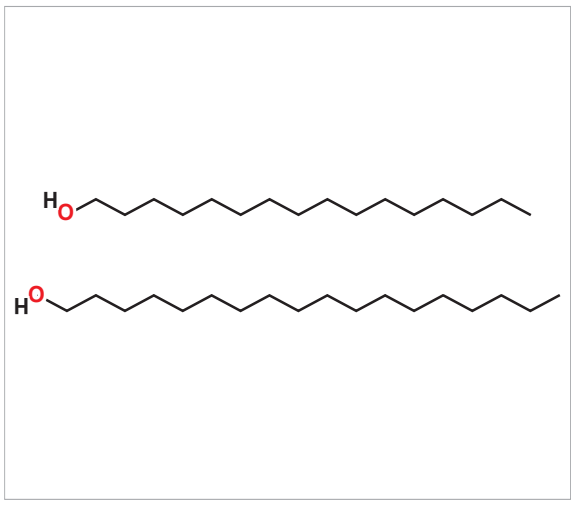
n~14-16

Name	
IUPAC name	Cetostearyl alcohol
CAS Number	67762-27-0
Other names	Cetearyl alcohol; Cetylstearyl alcohol; Cetyl/stearyl alcohol

Identifiers	
Chemical formula	$CH_3(CH_2)_nCH_2OH$; n=variable, typically 14-16
Melting point	48 to 56°C (118 to 133°F; 321 to 329 K)

Function(s): Emulsion Stabilizer; Opacifying Agent; Surfactant - Foam Booster; Viscosity IncreasingAgent - Aqueous; Viscosity Increasing Agent - Nonaqueous; EMOLLIENT; EMULSIFYING; EMULSION STABILISING; FOAM BOOSTING; VISCOSITY CONTROLLING

Synonym(s): (C16-C18) ALKYL ALCOHOL; (C16-C18) -ALKYL ALCOHOL; 1-OCTADECANOL, MIXT. WITH 1-HEXADECANOL; ALCOHOLS, C16-18; ALCOHOLS, C1618; C16-18 ALCOHOLS; CETOSTEARYL ALCOHOL; CETYL/STEARYL ALCOHOL; MIXT. WITH 1-HEXADECANOL 1-OCTADECANOL; UNIOX A



Chemical Names:	Cetearyl alcohol; UNII-2DMT128M1S; 67762-27-0; 8005-44-5; CETEARYLALCOHOL; 1-Octadecanol, mixed with 1-hexadecanol
Molecular Formula:	$C_{34}H_{72}O_2$
Molecular Weight:	512.948 g/mol
Physical Description:	Waxy white solid with a mild soapy odor. Floats on water.
Boiling Point:	Greater than 480 F at 760 mm Hg (USCG, 1999)
Melting Point:	127 F (USCG, 1999)
Flash Point:	Greater than 270 F (USCG, 1999)
Density:	0.81 at 77 F (USCG, 1999)

Product Name	Appearance at 25 Deg. C	Colour (APHA Units)	Acid Value, mg of KOH/gm	Sap Value, mg of KOH/gm	Iodine Value, (Wij's) gms. I2/100 gms.	Hydroxyl Value, mg of KOH/gm	Moisture % by wt.	Solid-ification range (C)	Carbon Chain Distribution by GLC (%)					Hydrocarbon, % by GC
									C12 alcohol	C14 alcohol	C16 alcohol	C18 alcohol	C20 & Higher alcohol	
CETO STEARYL ALCOHOL 3070	White Pastilles	10 Max.	0.1 Max	0.5 Max.	0.3 Max.	210-220	0.3 Max.	50-54	0.5 Max.	1.5 Max.	25-35	65-70	2.0 Max.	0.5 Max.
CETO STEARYL ALCOHOL 7030	White Solid	10 Max.	0.2 Max	0.5 Max.	0.5 Max.	218-228	0.3 Max.	47-51	<2.0	<7.0	55-65	35-45	<2.0	0.5 Max.
CETO STEARYL ALCOHOL 5050	White Solid	10 Max.	0.2 Max	0.5 Max.	0.5 Max.	210-225	0.3 Max.	48-53	C14 & Lower < 3.0		45-55	45-55	< 3.0	0.5 max

Fatty Acid Distillate:

Palm Fatty Acid Distillate, Palm Kernel Fatty Acid Distillate, Coconut Fatty Acid Distillate

PFAD: PALM FATTY ACID DISTILLATE (PFAD)

Palm Fatty Acid Distillate (PFAD) is a by-product from the physical refining of palm oil which is now the most widely used process in the major producing countries. Its scale of production is large enough to support significant international trade in it. PFAD has very similar composition to palm acid oil (PAO), but it generally has higher FFA (over 70%), the balance being neutral oil and up to 1% moisture and impurities. Good quality material has good smell and light colour. Its main uses are in animal feeds, including some speciality products, in soap making and in the production of distilled fatty acids. This product is produced in much greater volume than PAO. Palm Fatty Acid Distillate (PFAD) is made from refining crude palm oil. It is used for many industries such as soap industries, animal food industries and also is used as raw materials for bio-diesel and chemical industries. When extracted, Palm Fatty Acid Distillate (PFAD) produces Vitamin E which has large purposes in many fields, especially health. Chromatographic separation process of vitamin E adsorption gives a better control.

Palm Fatty Acid Distillate (PFAD) is potentially a valuable, low-cost raw material for bio-diesel production. Palm Fatty Acid Distillate (PFAD) also a food vs. fuel argument that is much debated non-issue since Palm Fatty Acid Distillate (PFAD) is generally sold as a industrial fatty acids source for non-food requests. Palm Fatty Acid Distillate (PFAD) has also been used as power plants and industrial boilers fuel.

Palm Fatty Acid Distillate (PFAD) is a by-product of crude palm oil refinery plant. Palm Fatty Acid Distillate (PFAD) is taken as distillate of stripping tower of FFA. Crude palm oil main product is refined bleach and deodorized palm oil. They are fractionated into RDB olein and stearin fractions by cooling down process and filter pressing process. The main component of Palm Fatty Acid Distillate (PFAD) is free fatty acids, which are oleic, stearic and palmitic. The FFA stripping tower has good efficiency process if it content in Palm Fatty Acid Distillate (PFAD) is high while triglycerides are low. Since Palm Fatty Acid Distillate (PFAD) contains mainly fatty acids and other impurities, its quality is less stable so that it needs short storage. This is the reason why fresh Palm Fatty Acid Distillate (PFAD) is more preferred to purchase; otherwise bio-diesel quality that is resulted could be affected.
Indonesia is the largest palm oil producers.

Specification
FFA content min 70%
Moisture and Impurities 1% max
TFM min 95%
IV 60 max

Carbon Chain	Carbon Composition (%)	Percentage Distribution
C12	0.18
C14	1.22
C16	49.61
C16:1	0.15
C18	4.12
C18:1	35.5
C18:2	8.79
C18:3	0.3
C20	0.47
OTHERS	0.11

Packing: 185 kgs. in Reconditioned second hand MS Drums. 98 drums in a 20' Fcl. (18.13 MT).

PALM KERNEL FATTY ACID DISTILLATE (PKFAD):

Palm Kernel Fatty Acid Distillate PKFAD is obtained from the palm kernel oil.PKFAD - widely use in oleochemical industries, especially in soap making & detergents, cream, and shampoos. Palm Kernel Fatty Acid Distillate (PFKAD) is a by-product from refining Crude palm kernel oil (CPKO) . It is in liquid form at room temperature. It has similar characteristics and uses as PFAD. They are used in the following industries:

1. Soap Industry
2. Shampoo Industry
3. Cosmetics Industry

STANDARDSPECIFICATION	
* FFA(As Lauric)	50% Max.
M & I	1% Max.
Total Fatty Matter	95% Min.
IV	23 max

GENERALINFORMATION	
Packing	Bulk
	Flexybag
	Isotank
Storage	Cool and dry place with room temperature
ShelfLife	6 months from production date
Country of Origin	Malaysia / Indonesia

NET WEIGHT 190 KGS IN SECOND HAND SOUND SEA WORTHY DRUM.

Quantity 98 DRUMS IN 20' ISO CONTAINER / FLEXIBAG.

Glycerine:

Glycerol also called glycerine or glycerin; is a simple polyol compound. It is a colorless, odorless, viscous liquid that is sweet-tasting and non-toxic. The glycerol backbone is found in all lipids known as triglycerides. It is widely used in the food industry as a sweetener and humectant and in pharmaceutical formulations. Glycerol has three hydroxyl groups that are responsible for its solubility in water and its hygroscopic nature.

Structure

Although achiral, glycerol is prochiral with respect to reactions of one of the two primary alcohols. Thus, in substituted derivatives, the stereospecific numbering labels each carbon as either sn-1, sn-2, or sn-3.

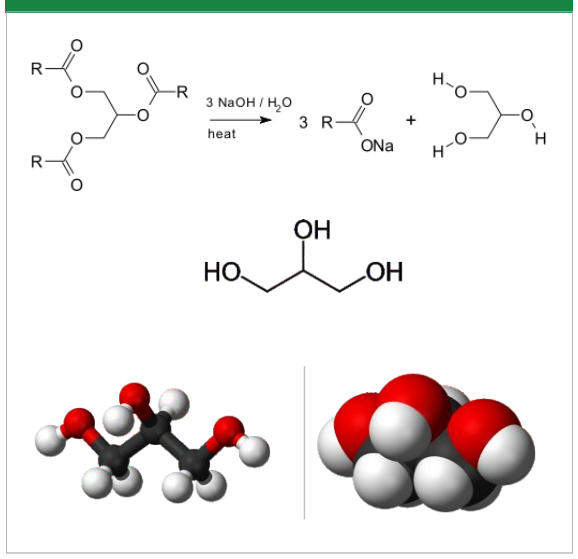
Production

Glycerol obtained from plant sources where it occurs as triglycerides. Triglycerides are esters of glycerol with long-chain carboxylic acids. The hydrolysis, saponification, or transesterification of these triglycerides produces glycerol as well as the fatty acid derivative. Triglycerides (1) are treated with an alcohol such as ethanol (2) with catalytic base to give ethyl esters of fatty acids (3) and glycerol (4):

Production of glycerine has increased drastically as the EU directive 2003/30/EC are implemented, which required the replacement of 5.75% of petroleum fuels with biofuel across all member states by 2010, as glycerol is a byproduct in the production of biodiesel. It was projected in 2006 that by the year 2020, production would be six times more than demand. Glycerol from triglycerides is produced on a large scale, but the crude product is of variable quality, with a low selling price. It can be purified, but the process is expensive. Some glycerol is burned for energy, but its heat value is low.

Crude glycerol from the hydrolysis of triglycerides can be purified by treatment with activated carbon to remove organic impurities, alkali to remove unreacted glycerol esters, and ion exchange to remove salts. High purity glycerol (> 99.5%) is obtained by multi-step distillation; vacuum is helpful due to the high boiling point of glycerol (290 C).

Glycerol



Name	
IUPAC name	Propane-1,2,3-triol
CAS Number	56-81-5
Other names	Glycerin, Glycerine
Propanetriol	1,2,3-Trihydroxypropane 1,2,3-Propanetriol

Identifiers	
Chemical formula	$C_3H_8O_3$
Molar mass	92.09 $gmol^{-1}$
Appearance	Colorless liquid Hygroscopic
Odor	Odorless
Density	1.261 g/cm^3
Melting Point	17.8°C (64.0°F; 290.9 K)
Boiling Point	290°C (554°F; 563 K)
Solubility in water	Miscible
Flash Point	160 C (320 F; 433 K) (closed cup) 176 C (349 F; 449 K) (open cup)

Food industry

In food and beverages, glycerol serves as a humectant, solvent, and sweetener, and may help preserve foods. It is also used as filler in commercially prepared low-fat foods (e.g., cookies), and as a thickening agent in liqueurs. Glycerol and water are used to preserve certain types of plant leaves. As a sugar substitute, it has approximately 27 kilocalories per teaspoon (sugar has 20) and is 60% as sweet as sucrose. It does not feed the bacteria that form plaques and cause dental cavities [citation needed]. As a food additive, glycerol is labeled as E number E422. It is added to icing (frosting) to prevent it from setting too hard.

Pharmaceutical and Personal Care Applications

Glycerol is used in medical, pharmaceutical and personal care preparations, mainly as a means of improving smoothness, providing lubrication, and as a humectant. It is found in allergen immunotherapies, cough syrups, elixirs and expectorants, toothpaste, mouthwashes, skin care products, shaving cream, hair care products, soaps, and water-based personal lubricants. In solid dosage forms like tablets, glycerol is used as a tablet holding agent. For human consumption, glycerol is classified by the U.S. FDA among the sugar alcohols as a caloric macronutrient.

Glycerol is a component of glycerin soap. Essential oils are added for fragrance. This kind of soap is used by people with sensitive, easily irritated skin because it prevents skin dryness with its moisturizing properties. It draws moisture up through skin layers and slows or prevents excessive drying and evaporation.

Vegetable glycerin, along with propylene glycol, is a common component of e-liquid, a solution used with electronic vaporizers (electronic cigarettes)

Antifreeze

glycerol is a non-ionic kosmotrope that forms strong hydrogen bonds with water molecules, competing with water-water hydrogen bonds. This disrupts the crystal lattice formation of ice unless the temperature is significantly lowered. The minimum freezing point temperature is about 36 F (38 C) corresponding to 70% glycerol in water.

Glycerol was historically used as an anti-freeze for automotive applications before being replaced by ethylene glycol, which has a lower freezing point. While the minimum freezing point of a glycerol-water mixture is higher than an ethylene glycol-water mixture, glycerol is not toxic and is being re-examined for use in automotive applications.

In the laboratory, glycerol is a common component of solvents for enzymatic reagents stored at temperatures below 0 C due to the depression of the freezing temperature. It is also used as a cryoprotectant where the glycerol is dissolved in water to reduce damage by ice crystals to laboratory organisms that are stored in frozen solutions, such as bacteria, nematodes, and mammalian embryos.

MSD Global is one of the largest suppliers of refined glycerine in Africa and middleast market. We can manufacture large volume as per customer's requirement. All our manufacturers is ISO 9001 certified for the manufacture of min. 99.7% purity refined glycerine.

Our Refined Glycerine meets and exceeds USP (United States Pharmacopeia), EP (European Pharmacopeia), BP (British Pharmacopeia) and Food Grade (Food Chemicals Codex) standards.

Our refined glycerine is drummed in a controlled certified Clean Room to ensure adherence to the highest quality and hygiene standards. MSD Global offers several grades and varieties of Glycerine. Our vegetable-based (from Palm Oil or Palm Kernel Oil) USP Kosher Grade Glycerine 99.7%. Our USP palm-based Glycerine also meets the criteria for natural under the guidelines of FDA 21CFR101.22 Natural . All our palm-based Glycerine and Oleochemicals are non-GMO, allergen free, and BSE free.

Refined Glycerine 99.7% United States Pharmacopeia (USP)

Used in pharmaceuticals, personal care product, toiletries and cosmetics as solvents and humectants; Food additives; Animal feed; As humidifiers and plasticizers for tobacco; Used in adhesives, agricultural chemicals, antifreeze, coatings, manufacture of electrolytes for electrolytic condensers, fuel, inks; Used as plasticizers and lubricants for plastics and in manufacturing of paper; As conditioning agents in textiles; As a raw material in production of epichlorohydrin, propylene glycol, polyurethane foams, nitroglycerine, alkyd resins for paints etc.

Glycerine USP Grade

Product Name	Descri ption	Identification Test	Specific Gravity 25/25 C	Colour APHA max	Residue on Ignition max	Sulphate ppm Max	Chloride ppm Max	Heavy Metals PPm max	Limit of Chlorinated compounds PPm Max	FA & ESTERS ml of 0.5N NaOH	Assay	Water	Related Compounds	Packing
Glycerine 99.7% min USP	Refined Glycerine 99.7% min Vegetable origin	Pass	1.2612 min	5	0.01%	20	10	5	30	1	99.7% min	0.3% max	1.0% max	250 Kg D
Glycerine 99.5% min USP	Refined Glycerine 99.5% min Vegetable origin	Pass	1.2606 min	5	0.01%	20	10	5	30	1	99.5% min	0.5% max	1.0% max	250 Kg D

Refined Glycerine 99.5% British Pharmacopeia (BP).

Our refined 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 Name	Descri ption	Identification Test	Refrac Index	Colour Apha Max	Suphated ASH Max	Chlorides ppm Max	Heavy Metals ppm max	Sugars	Halogenated compounds ppm max	Aldehydes ppm Max	Esters ml of 0.1 m HCl min	AsAcidity 0.1 m NaoH Maxsay	Assay	Water	Impurity & Related Substances	Packing
Glycerin 99.7% min BP	Refined Glycerine 99.7% min	Pass	1.4734 min	5	0.01%	10	5	Pass	35	10	8.0	0.2	99.7% min	0.3% max	0.5% max	250 Kg D
Glycerine 99.5% min BP	Refined Glycerine 99.5% min	Pass	1.4730 min	5	0.01%	10	5	Pass	35	10	8.0	0.2	99.5% min	0.5% max	0.5% max	250 Kg D

SHELF LIFE

Two Years in Drums, and One Year in Bulk, from Date of Manufacture when stored according to MSDS recommendations.

PACKAGING

Drums, IBC's, Liquid Bulk Glycerine

Distilled Fatty acid:

Distilled Fatty Acids Manufactured from Vegetables Oils like palm oil, Coconut Oil, Palm Kernel Oil. During the splitting process, oils and fats are separated into fatty acids and glycerine. The distilled split fatty acid contains a mixture of saturated (solid stearine) and unsaturated (liquid oleine) fatty acids. Wet separation is the process whereby the two types of fatty acids are separated from each other.

Fatty Acid Distillation

Utilizing a feedstock of Crude Fatty Acids from splitting Fats and Oils, they are distilled at very low temperatures and in a vacuum. The evaporation is with the addition of live steam and partial pressure reduction, and not on the heating surface, thereby enabling the vacuum to become fully effective. The vapour is condensed on the surface condensers and the distillate that is withdrawn is free of low-volatile components.

Process Description:

Deaeration: crude fatty acid is heated and subjected to vacuum in order to remove undissolved gasses before entering subsequent high temperature distillation section (to avoid undesired oxidative reaction).

Splitting columns: The splitting columns take vegetable oils and produce split fatty acids and glycerine. Split fatty acid is drawn off the bottom of the splitting columns and sweetwater (dilute glycerine water) is drawn off the top. In the pretreatment area of the process, sulphuric acid is added to the concentrated stream to remove the last bit of fat. After separation, the stream is neutralized with lime, and filter aid is added prior to going through the plate and frame filter. From there it proceeds to the glycerine distillation section of the plant. There are three splitting columns which are used to separate the oils and fats. Glycerine accumulates in the bottom in a solution called sweetwater (12% glycerine in water).

Glycerine Purification: The Glycerine purification plant refines soap lye crude and splitters crude to produce glycerine with a high level of purity.

Fatty Acid Distillation: Distillation units are used to refine fatty acids by removing the heavy ends and the volatiles. The stream is primarily oleic and stearic acids. fatty acid is fed to the column bottom and heated by evaporates. Fatty acids together with low volatiles (light end) will be vaporized in the evaporators. Falling film type evaporator ensures gentle evaporation of fatty acids without adverse effects on the products quality and stability. The fatty acid and light ends vapours are condensed in different stages of surface condensers. Main fatty acid distillate is usually taken out as a middle fraction and light ends as the top fraction. Heavy ends, primarily color carriers, can either be withdrawn separately of recycled directly for complete or partial re distillation

Wet separation: During the splitting process, oils and fats are separated into fatty acids and Glycerine. The distilled split fatty acid contains a mixture of saturated (solid stearine) and unsaturated (liquid oleine) fatty acids. Wet separation is the process wherby the two types of fatty acids are separated from each other.

Hydrogenation: the batch hardening plant uses hydrogenation to harden a range of fatty acids. The fatty acids are dried and then reacted with hydrogen using a nickel catalyst before being filtered through a plate and frame press.

A few highlights of our manufacturing process are

- The Pre-Cut Column allows our manufacturing units to handle the worst possible feedstock's available in the market today like PFAD, Acid Oils etc., and still produce a high grade Distilled Fatty Acid for Soap Noodles.
- Optimizes the recovery of heat and produces 3 bar steam for use
- Reduces the thermal stress on the product by the use of Falling Film Evaporators
- Our manufacturing system has a structured packed column for efficient distillation and separation of odors, colors and fractions
- The use of the internal heavy end sections results in the best product color
- The Reboiler for the residue makes for the least amount of Fatty Acid loss

Process descri ption: A typical fatty acid distillation is divided in 4 parts.

1) Low boiling components (light ends)
2) Distilled fatty acids (product)
3) High boiling components (heavy ends)
4) Residue.

Distilled Fatty acids appeared to be clear liquid. It is used as raw material in detergents production. Other application including manufacturing of nitrogen derivatives, and alkyd.

1) Distilled Palm Stearine Fatty Acid:

Distilled palm stearine fatty acid is finely processed under the firm direction of experienced quality controllers and using best available techniques. These are extracted by supercritical CO2 extraction and acclaimed for its purity and effective usage. These are extensively used in various industries including washing agents (soaps) and washing powders, soap industries, pharmaceutical and cosmetic products, lubricating agents and many other allied industries. Used in production of fatty acid alkanolamides, imidazolines, esters, fatty amines, anionic specialty surfactants (e.g acyl isethionates, acyl sarcosinates and acyl taurates), alkyd resins for paints; Used in production of toiletry, laundry, liquid and transparent soap; Rubber etc.

2) Distilled Palm Oil Fatty Acid:

Used in production of fatty acid methyl esters, toiletry and laundry; As a processing aid in rubber processing etc.

3) Distilled Palm Kernel Fatty Acid (Hydrogenated/Non-hydrogenated):

It is obtained by splitting and the subsequent vacuum distillation of palm kernel oil (mostly). The product obtained has a melting point above 25 C. At room temperature it is a white paste,opaque and with a distinctive smell. Used in production of fatty acid alkanolamides, imidazolines, esters, fatty amines, anionic specialty surfactants (e.g acyl isethionates, acyl sarcosinates and acyl taurates), alkyd resins for paints; Used in production of toiletry, laundry, liquid and transparent soap etc. Amines, betaines, esters, fatty alcohols, lubricants, surface finishes, detergents, cosmetics and personal care, and solid liquid soaps, textile finishing, leather finishing, finishing fibers, coatings, resins and surfactants.

4) Distilled Coconut Fatty Acid (Hydrogenated/Non-hydrogenated):

Coconut fatty acid, distilled CAS No. 067701-05-07 EINECS 266-929-0 General Coconut fatty acid is produced by splitting coconut oil. Coconut fatty acid has a bland, characteristic odour. It is used in soaps and detergents. Product Applications: Distilled Coconut Oil Fatty Acid: * can be neutralized with various cations to form soluble soaps. * useful to formulate liquid pharmaceutical and personal care products. * is used in the production of chemical intermediates/derivatives.
Used in production of fatty acid alkanolamides, imidazolines, esters, fatty amines, anionic specialty surfactants (e.g acyl isethionates, acyl sarcosinates and acyl taurates), alkyd resins for paints; Used in production of toiletry, laundry, liquid and transparent soap etc.

Distilled Fatty Acids

Product Name	Titre C	Iodine Value gI2/100g	Acid Value mg KOH/g	SAP Value mg KOH/g	Colour 51/4 LOV. Max	Typical Fatty Acid composition %									
						C6	C8	C10	C12	C14	C16	C18	C18:1	C18:2	Others
Distilled Palm Kernel Fatty Acid	20.0-28.0	16.0-22.0	249.0-264.0	249.0-263.0	10Y 1.0R	0-0.5 max	2-5	2.0-5.0	48-56	13.0-17.0	7.0-10.0	1.0-3.0	10.0-15.0	1.0-3.0	1.0 max
Distilled Coconut Fatty Acid	22-26	7-12	261-275	262-276	5Y 0.7 R		6-9	5-8	46-51	15-19	6-10	1-3	5-9	1-3	1.0 max
Distilled Topped Palm Kernel Fatty Acid	25-38	16-21	246-258	247-259	3Y 0.4 R			0.5max	46-56	15-20	8-12	1-5	12-20	4.0 max	
Distilled Palm Fatty Acid	42-52	44-54	195-215	196-215	3 max R										
Distilled Palm Stearin Fatty Acid	47-53	32-43	207-214	208-215	3Y 0.5R				0.5max	2max	54-63	4-7	24-33	4-8	0.5 max

Animal Feed:

Lactating dairy cows have the most complex nutritional requirements and these requirements change through early, mid and late lactation. Dairy cattle achieve peak milk production in the early lactation period and require more energy intake from their diet. High energy intake is important to meet nutrient and milk production demand as well as to support body weight gain and for body maintenance. Usually, if energy intake is less than energy demand, dairy cattle will start to mobilize their body nutrient reserves, which can result in poor uterine muscular tonicity that can cause parturition difficulties and retention of placenta. Other health problems associated with low energy consumption are undeveloped mammary system that can affect milk production and lead to mastitis problem. To avoid negative energy balance from happening, one method is increasing the energy density of dairy cattle diet by adding rumen bypass fat. Currently there are four generations of bypass fats used in lactating dairy cattle: first generation fats which are partially hydrogenated fats. vegetable fats need to be hydrogenated to make them solid so as to increase the level of unsaturated fatty acids however hydrogenation decreases digestibility by 40% or less. Calcium (Ca) salts were the second generation bypass fats. Calcium salts of long-chain fatty acids have been shown to be effective as ruminally inert fat supplements for lactating cattle. With 84% gross fat they are able to increase energy and improve digestibility compared to the first generation bypass fat, however these fats contain 45% or more unsaturated fatty acids that upset the rumen fermentation, reduce appetite and depress dry matter intake. The third generation of this series were pure fatty acids with 100% gross fat. The fats are high in saturated, long chain fatty acids and naturally designated to be inert in rumen. The triglycerides or saturated fats are the latest innovation derived from palm oil solely by fractionation process and rich in palmitic acid that contributes to milk fat percentage.

NRG 80 & NRG 100 (C16 80% min)

Following is the dosage

Broilers, Growers, finishers	4 to 5% of total feed
Layers	2 to 3% of total feed
Cattle's	Calculated to optimise total fat in feed at 6%

NRG 80 & NRG 100 is made from freshly produced palm oil fractions for use as an energy source for both ruminants and monogastric animals.The product contains high content of c16:0 palmitic fatty acid which is known to increase milk fat content when fed to high yielding dairy ruminants.

The use of high C16:0 palmitic fatty acid product is known to increase butterfat percentages by substituting the de novo synthesis of the same at mammary level during milk production. With a naturally high melting point, a high palmitic fatty acid product has an effective ruminal inertness but is generally accepted to be higher in intestinal digestibility when fed as free fatty acids than as triglycerides forms.

High palmitic fatty acid rumen bypass fats with 80% minimum units of c16:0 palmitic acids are often without exceptions until now, a byproduct from the production of soap noodles which incorporates the use of high melting point palm fractions. Palm oil fractions used are refined for both purity and clarity purpose and therefore removed of their natural phytonutrient contents which include carotenoids (Vitamin A), tocotrienols & tocopherols (vitamin E), squalenes, peptides and others.

Product Descriptions :

NRG 80 & NRG 100 C16 80% min is a new variant of high palmitic fatty acid rumen bypass fat that is made from freshly produced palm oil fatty acid that still retains a high level of phytonutrients as additional benefits to the product as an important energy source and de novo fatty acids replacer for ruminants. The product has a high crude fat content of 99% minimum with 80% units of C16:0 palmitic acids that will assist in the elevation of butterfat content in milk.

NRG 80 & NRG 100 C16 80% is micro prilled to promote superior intestinal digestibility.

NRG 80													
Parameters	Acid Value	Sap Value	M & I	IV	Melting Point Deg C	Colour (5 1/4" cell, Lovibond)	Fatty Acid Composition	C 14 and below	C16	C 18 and higher	Form	Packing	Stuffing Per container
NRG 80 (C16 85% min)	210-225	211-226	0.25% max	15 max	55 min	Red 3 cmax, Yellow 30 max		8 max	85 min	20 max	Beads or Flakes	25 Kg Bags	16.5 to 17 MT per 20' Fcl
NRG 80 (C16 80% min)	210-225	211-226	0.25% max	15 max	55 min	Red 3 max, Yellow 30 max		8 max	80 min	20 max	Beads or Flakes	25 Kg Bags	16.5 to 17 MT per 20' Fcl

NRG 100														
Parameters	Acid Value	Saponification Value	Iodine Value	Titre C	Colour Lovidbond 5 1/4" Red/Yellow	Fatty Acid Composition	C10 Capric	C12 Lauric	C14 Myristic	C16 PALMITIC	C18/ C18:1/ C18:2	Form	Packing	Stuffing Per container
NRG 100 (C16 95% min)	216-222	216-222	0.5max	59-63	0.3 max/ 2 max		1 max	1 max	5 max	95 min	5 max	Beads or Flakes	25 kgs. in P.P. woven Laminated paperbags	16.5 to 17 MT per 20' Fcl
NRG 100 (C16 99% min)	217-200	218-221	0.5max	61-63	0.3 max/ 2 max		--	--	1 max	99 min	1 max	Beads or Flakes	25 kgs. in P.P. woven Laminated paperbags	16.5 to 17 MT per 20' Fcl

NRG FAT(Hydrogenated PFAD):

Prilled saturated fatty acids have been shown to be effective ruminally inert fat supplements for high producing dairy cows. Hydrogenated palm fatty acid distillate (HPFAD) can be supplied as a prill or flake and is being marketed as a ruminally inert fat source. Because prilling adds cost to the final product, the relative digestibilities between a flaked fatty acid product, such as HPFAD, and the same product when prilled are of interest. A recent study showed that a flaked fat source had a fatty acid digestibility in nonlactating cows that was not significantly different from a prilled fat source, even though the flakes were much larger than desired. Degree of hydrogenation and particle size are important factors in subsequent digestibility of fatty acids.

NRG FAT (Hydrogenated PFAD)										
Parameters	TFM	Free Fatty Acid (as Palmitic)	M & I	IV	Melting Point Deg C	Nickel ppm	Colour	Form	Packing	Stuffing Per container
Limts	99% min	70% min	1% max	12 max.	50 min	1000 max	Creamish Brown	Flakes	25 Kg Bags	16.5 to 17 MT per 20' Fcl

NRG Plus: RBD palm stearin (Hard):

Palm stearin is the solid fraction of palm oil that is produced by partial crystallization at controlled temperature.

It is more variable in composition than palm olein, the liquid fraction of palm oil, especially in terms of its solid fat content, and therefore has more variable physical characteristics. Like crude palm fruit oil, palm stearin contains carotenoids, but physically refined palm oils do not, as they are removed or destroyed in the refining process.

Fractionated refined, bleached and deodorized Palm Stearin (RBD Palm Stearin) is the solid fraction of palm stearin, which is produced by fractionation of palm oil. Fractionated RBD Palm Stearin is higher in saturated fatty acids, 85.7% with higher melting point

Supplementing dairy cattle rations with fractionated RBD Palm Stearin shows potential for increasing milk yield, fat content and fatty acid composition. Fractionated RBD Palm Stearin available as supplementary energy sources for dairy cattle markedly influenced the fatty acid composition of milk fat, thus improving milk quality. However in terms of economic value, fractionated RBD Palm Stearin can only be used at 2.5% inclusion level.

NRG Plus: RBD Palm Stearin (Hard)															
Parameters	Free Fatty Acid(as Palmitic)	M&I	IV	Slip Melting Point Deg C	Colour (5 1/4" cell, Lovidbond	Fatty Acid Compos-ition	C12	C14	C16	C18:0	C18:1	C18:2 & higher	Form	Packing	Stuffing Per container
Limits	0.5% max	0.25 % max	15 Max	57 Min.	3 Red max		1 max	3 max	75 min	3 to 6	6 min	3 max	Beads or Flakes	25 Kg Bags	16.5 to 17 MT per 20' Fcl

PALM WAX:

Palm wax is used as raw material in candle, plastic additives. it can be used as a substitute for paraffin. It is edible and is used as raw material in the formulation of candle waxes that can be blended with other vegetable and paraffin waxes. It is highly suitable for moulded and container candle formulation.

Palm waxes have continued to grow in popularity over the years as "natural" waxes are more in demand than they once were. Palm wax is an environmentally friendly product since it comes from a sustainable and renewable source and it burns cleanly. Palm wax and palm candle wax. Ideal for palm candle making, palm candles, palm candle wax pillar candles. Palm wax possesses beautiful surface finish, excellent burning qualities and color stability.

Nowadays people often prefer a natural alternative for making candles, to avoid the use of chemicals and additives. The use of palm wax is a great solution to this; it's plentiful, cheap, and natural.

Palm wax has a pearlescent appearance. It takes fragrance easily and it is very easy to shape.

Specification	Product Code			
	MSD PWX 5355	MSD PWX4555	MSD PWX 5060	MSD PWX5660
Acid value mgKOH/g	209 - 214	110 - 140	125 - 165	-
FFA as palmitic Acid%	-	-	-	1 max
ColorLovibondLov, R/y	0.5 R/5 Y	2.5 R/25 Y	2.5 R max	3R/ 30 Y
Lodine value	0.5 max	10 max	8 max	6-8
Sap value mg KOH/g	210 - 215	-	-	-
Titre	53 - 55	-	-	-
SMP	-	45 - 55	50 - 60	56 - 60
M & I	-	-	0.25 max	1 max
Product form	Liquid / Solid	Liquid / Solid	Liquid / Solid	Liquid / Solid
Packing	25 kg Paper bags or 800 kg jumbo bags	25 kg Paper bags or 800 kg jumbo bags	25 kg Paper bags or 800 kg jumbo bags	25 kg Paper bags or 800 kg jumbo bags

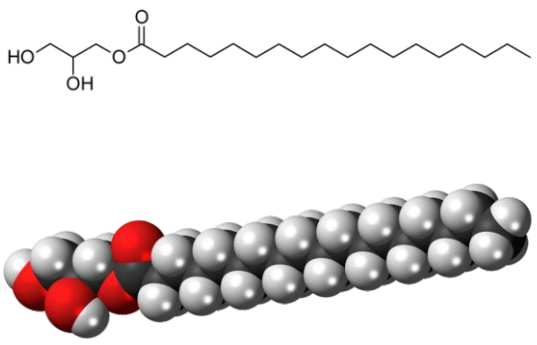
Glycerine Monosterate:

Glycerol monostearate, commonly known as GMS, is an organic molecule used as an emulsifier. GMS is a white, odorless, and sweet-tasting flaky powder that is hygroscopic. It is a glycerol ester of stearic acid.

GMS is a food additive used as a thickening, emulsifying, anti-caking, and preservative agent; an emulsifying agent for oils, waxes, and solvents; a protective coating for hygroscopic powders; a solidifier and control release agent in pharmaceuticals; and a resin lubricant. It is also used in cosmetics and hair care products.

GMS is largely used in baking preparations to add "body" to the food. It is responsible for giving ice cream and whipped creamtheir smooth texture. It is sometimes used as an anti-staling agent in bread.

Glycerol Monostearate



Name	
CAS Number	123-94-4
Abbreviations	GMS

Identifiers	
Chemical formula	$C_{21}H_{42}O_4$
Molar mass	358.56 $gmol^{-1}$
Appearance	White to yellowish solid
Density	0.97 g/cm^3
Melting point	24 °C (75 °F; 297 K)
Boiling point	238 °to 239 °C (460 °to 462 °F; 511 to 512 K)
Solubility in water	Insoluble

Glycerine Monosterate

Specification	GMS Content %	GMO Content %	Acid value mg KOH/g	Iodine value 1/100 g	Glycerin %	Titre C	Melting point	Arsenic	Lead	Heavy metal	Ash	Product form
Glycerin Monostearate 60%	60 min	-	2.5 max	2 max	1 max	-	55 - 65	0.0002 max	0.0002 max	0.0005 max	0.5 max	Beads
Glycerin Monostearate 40%	40 min	-	5 max	2 max	1 max	-	55 - 65	0.0002 max	0.0002 max	0.0005 max	0.5 max	Beads

Hydrogenated Palm Stearin / Hydrogenated RBD Palm Stearin

Specification:

In normal temperature, Hydrogenated RBD Palm Stearin is white or slight yellow solid wax, non-soluble in water, little soluble in gasoline, soluble in acetone, benzol, chloroform, alcohol, etc, stable chemical properties.

Application:

Hydrogenated RBD palm stearin can be used in making stearates, it can also be used in making MonoGlycerindes, soap, polish cream, and candles manufacture. Special grade Hydrogenated Palm Stearin Flakes are used in manufacturing of Glycerol Mono Stearte(GMS), Food Industry. various other applications: wax formulations, , adhesives, tarpauline waxing,boat waxing ,car boynett / hood waxing ,light grease / lubricant mfrg

Glycerine Monosterate

Specification	Saponification Value	Lodine Value	Moisture & Impurities	Melting Point	Colour Lovidbond $5\ ^{1/4}$ Red	Fatty Acid Composition	C18, C18:1,C18: 2
	195-205	1.5 max	0.5 max	58 - 61	2.5 R max	-	36 min

Logistics & Operations:

Our logistics and operations team specialises the sea transportation of cargoes from Malaysia, Indonesia, Thailand and Indian subcontinent to almost any part of the world. We conduct business in more than 90 countries around the world.

We specialise mainly in full container load vessels for oleochemicals. But if required we can also offer services for non unitisable (LCL, break bulk).

Our logistics and operations team are the people who make difference in trade because of the way that we engage with our customers. For us it is not what we do; it's how we do it. Our logistics team spend time with our customers to understand their business requirements. Our team are professionals and accountable who delivers the high level service and dedication that our customers expect from the delivery of their goods.

Commitments:

- Commitments:
- Develop secure, safe and fast moving solutions
- Apply industry best practices
- Go above and beyond compliance with relevant rules and regulations

Our Business:

We are tied up with leading liner companies who have most modern vessels, the world's largest and most sophisticated container pools as well as world class information systems. We specialise in sea transportation of oleochemicals, edible oils and speciality fats from Malaysia, Indonesia, Thailand and Indian subcontinent to Africa, middle east, Europe, USA and south American ports. Our core focus is on trades that connects these markets for oleochemicals and speciality fats.

Delivering Value:

Our customers are extremely important to us because we understand that our future success will depend on their support we receive from them. And that by nurturing and helping their business we can and we will grow our own business.

We understand the importance of being true to our promise of being the people making the difference in their trade.

We provide specialise service developed to serve the needs of customers involved. For example safely transporting temperature sensitive cargo like refrigerated containers for speciality fats like shortening and margarine. Flexi with heat pads for PFAD and other distilled fatty acids; handling various packing like 25 kg bags, jumbo bags, drums both palletised and unpalletised cargo.

Customer Care:

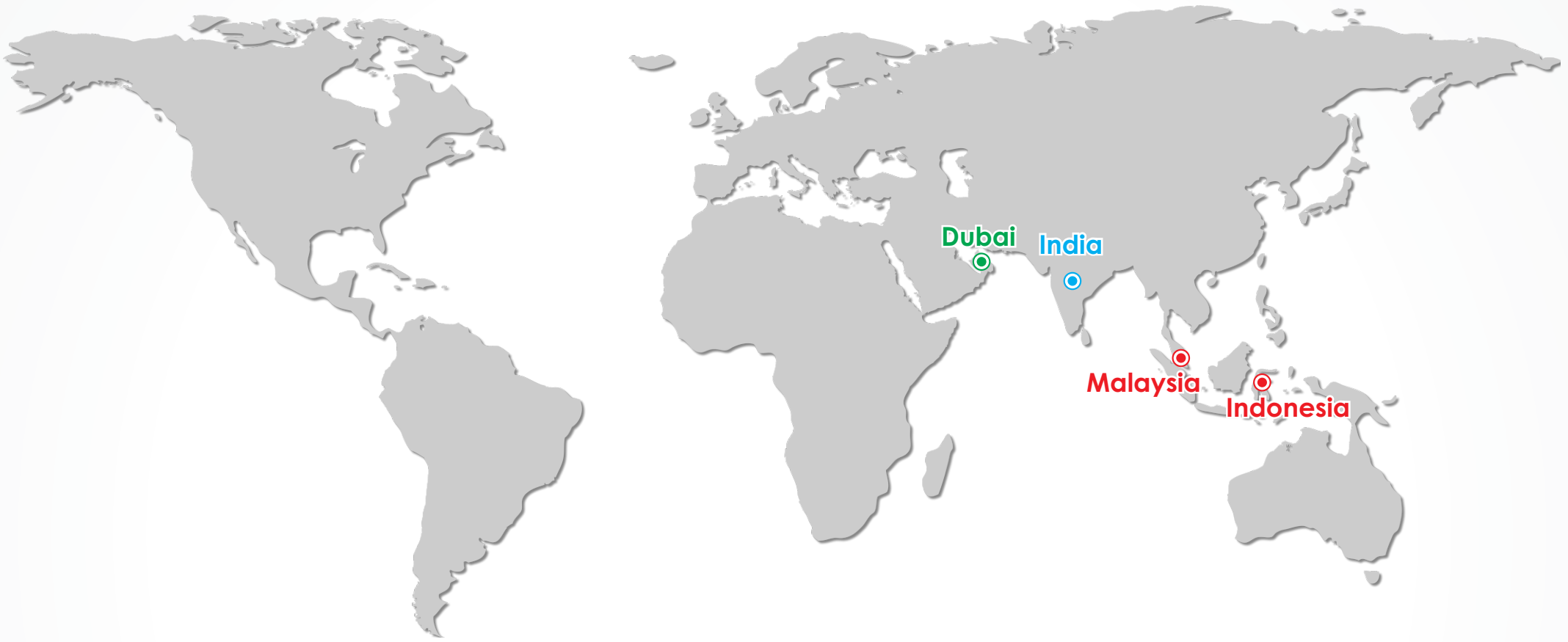
It's all about customer satisfaction, how to meet and exceed their expectations, our customers are placed at the heart of our corporate strategy.

At MSD Global our organisation is geared to offer the best solutions to our customers transportation requirement which ever, wherever, making safety and security top priority in our operations. We understand that the best services require the best tools in trade. Hence all our liners have modern and innovative vessel fleet, latest generation containers.

Comprehensive Offering:

We offer comprehensive global logistics services offering world class ocean transportation expertise. Our long term partnership with numerous carriers, along with sophisticated cutting edge information technology and extensive global network that span over 90 countries, has today made MSD global leading oleochemical trading company. We ensure the very finest in full container load (FCL shipments), less than container load (LCL shipments), temperature controlled container load shipments, supply chain management.

Global Oleo FZC



DUBAI

Head Office

MSD GLOBALOLEO FZC

Office, B1,208B, Ajman Free Zone, Ajman,
United Arab Emirates
(U.A.E)

www.msdglobalfzc.com

INDIA

Office

M/s MSD GLOBAL

Block 1038, Hirapanna Shopping Center
Hiranandani Complex, Powai,
Mumbai-400076, INDIA

www.msdoleo.com

Toll Manufacturing Location

MALAYSIA

INDONESIA