

PRODUCT TECHNICAL DOSSIER

VITAMIN A PALMITATE 1.0 MIO IU/G TOC OIL

Product Code:

P22037

Raw Material Full Name:

Vitamin A Palmitate 1,0 MIO IU/g TOC Oil

This material is Food Grade:

✓

Limit/Range/Specification:

Vitamin A 1.0 – 1.1 MIO IU/g

Peroxide:

Max 10meq/kg

Acid Value:

Max 2.8mg KOH/g

Retinol:

Max 1.8%

Related Substances:

Absorbance Ratio A300/A326nm Max 0.60

Absorbance Ratio A350/A326nm Max 0.54

Absorbance Ratio A370/A326nm Max 0.14

Residual Solvents:

Methanol Max 3,000mg/kg

Heptane, Methyl Acetate & Isopropanol Max 5,000mg/kg

Country of Origin:

Europe

Country of Origin of the Manufacture:

Europe

Base Source/Start Material:

Vitamin A dissolved in Sunflower Oil



Origin of Product – Synthetic, Plant, Mineral, Animal, Fish or Fermented:

Synthetic

Solvents used:

Water, Methanol, Heptane, Methyl Acetate & Isopropanol

Compound Ingredients Origin, Function and Percentages:

Retinyl palmitate (vitamin A-palmitate) min. 55.0% (min 1.0 mio IU/g)* max. 60.5% (max. 1.1 mio IU/g)*
sunflower oil 30-50%
DL-alpha-tocopherol (vitamin E) max. 2%

*1 International Unit (IU/g)= 0.55µg vitamin A-palmitate

Shelf Life from Date of Manufacture:

Min 2 Years

Storage Conditions:

See section 7.2 of MSDS below

Appearance (Fine/Crystals/Crystalline/Hygroscopic):

Viscous Oil

Colour:

Yellow

Flavour/Taste:

Characteristic

Odour:

Characteristic

Do any of the parameters change in different seasons?

No



Heavy Metals

Lead (Pb):

Max 2mg/kg

Cadmium (Cd):

Max 1mg/kg

Mercury (Hg):

Max 0.1mg/kg

Arsenic (As):

Max 1mg/kg

There are no nuts in this recipe; however, we cannot guarantee that the raw materials entering the site are nut free.

Please note that surveillance testing may mean that not all the parameters stated on this specification are tested for every batch.

ALLERGENS	Product Contains YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Peanuts and Peanut Derivatives (including possible cross contamination)	NO	NO	
other Nut and Nut Derivatives <i>Almond (Amygdalus communis L.), Hazelnut (Corylus avellana), Walnut (Juglans regia), Cashew (Anacardium occidentale), Pecan nut (Carya illinoensis (Wangenh.) K. Koch), Brazil nut (Bertholletia excelsa), Pistachio nut (Pistacia vera), Macadamia nut and Queensland nut (Macadamia ternifolia)</i>	NO	NO	
Sesame Seeds and Sesame Seed Derivatives	NO	NO	
other Seeds and Seed Derivatives (Poppy Seeds, Cotton Seeds, Sunflower Seeds)	YES	YES	Source is from Sunflower Oil
Milk and Milk Derivatives (including lactose)	NO	NO	
Egg and Egg Derivatives	NO	NO	
Cereals and Derivatives containing OR POTENTIALLY CONTAMINATED WITH Gluten <i>(wheat, wheatgrass, faro, freekeh, spelt, kamut, rye, oats, barley, barley grass)</i>	NO	NO	
Soya and Soya Derivatives	NO	NO	
Lupin and Lupin Derivatives	NO	NO	
Mustard and Mustard Derivatives	NO	NO	
Celery or Celery Derivatives (including Celeriac)	NO	NO	
Fish and Fish Derivatives	NO	NO	
Molluscs and their Derivatives	NO	NO	
Crustaceans and their Derivatives	NO	NO	
Sulphur Dioxide and Sulphites (E220, E228) at levels > 10mg/kg or 10mg/litre	NO	NO	

ADDITIVES / CONTAMINANTS / DIETARY REQUIREMENTS	Product contains YES/NO	Listed Item on Site at Manufacturer YES/NO	If YES, Please Comment
Additives	NO	NO	
Antioxidants	YES	YES	Vit E (Tocopherol)
Ethylene Oxide	NO	NO	
Gelatine	NO	NO	
Flavourings (Artificial / Nature Identical / Natural / Smoked)	NO	NO	
Maize / Corn and any Derivatives	NO	NO	
Legumes / Pulses	NO	NO	
Rice and Rice Derivatives	NO	NO	
Added Salt	NO	NO	
Added Sugar / artificial or natural sweeteners	NO	NO	
Aspartame	NO	NO	
BHA / BHT (E320 / E321)	NO	NO	
Caffeine	NO	NO	
Colours (Artificial / Nature Identical / Natural / Smoked)	NO	NO	
Dextrose	NO	NO	
Dioxins	NO	NO	
MSG (Added and Naturally Occurring E621) or Glutamates (E620 to E625)	NO	NO	
Nucleotides (E627, E630, E631, E635)	NO	NO	
Polyols (sugar alcohols)	NO	NO	
Benzoates (E210 / E219)	NO	NO	
Sorbic Acid (E200, E203)	NO	NO	
any other Preservatives	NO	NO	
Ethanol	NO	NO	
Honey	NO	NO	
Lactose	NO	NO	
Yeast and Yeast Derivatives	NO	NO	
All Animal Products (Beef, Pork, Poultry or other) and Derivatives (which may include growth/yield hormones, antibiotics etc.)	NO	NO	
Bovine Products or Derivatives (which may include growth/yield hormones, antibiotics etc.)	NO	NO	

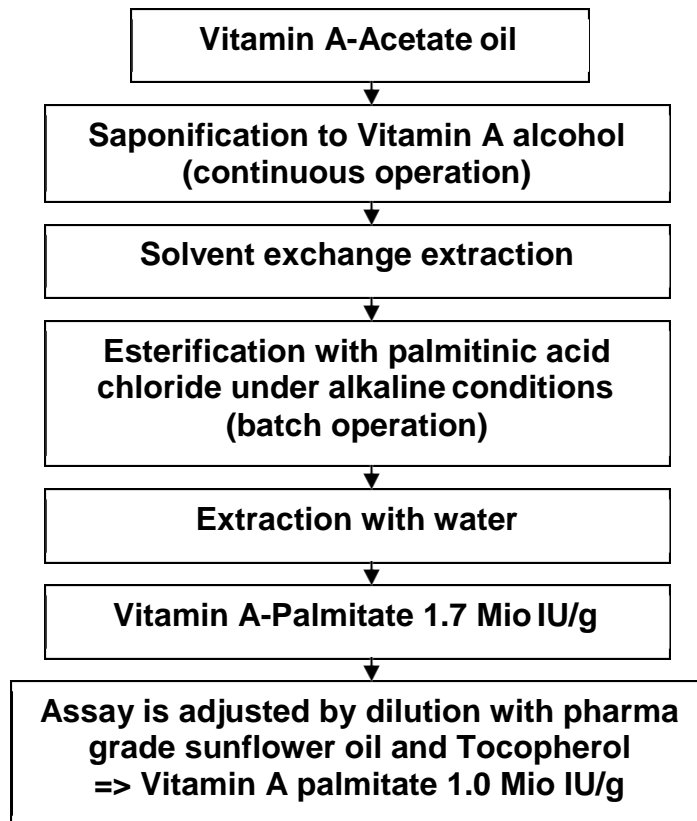


NUTRITIONAL DATA

Test	Calculated Value per 100gm
Energy KJ / Kcal	2,547KJ / 620Kcal
Fat	69g
- Of which saturates	32g
Carbohydrate	-
- Of which sugars	-
Fibre	-
Protein	-
Salt	-



PRODUCTION FLOW CHART



CONFIRMATION OF BSE/TSE STATUS

This is to certify that this product complies with all relevant current UK and EU Legislative requirements in regard to Transmissible Spongiform Encephalopathies (TSE) and Bovine Spongiform Encephalopathy (BSE) for human food, and so is free of TSE/BSE.

This is also to certify that, during the course of their manufacture, the above-mentioned product did not come into contact with any materials, which could be derived from TSE/BSE risk materials.

CONFIRMATION OF GM STATUS

This is to certify that this product is not manufactured from GM raw materials and is therefore not subject to labelling under regulations 1829/2003/EC and 1830/2003/EC.

CONFIRMATION OF NON IRRADIATION STATUS

This is to certify that this product, whole or in part, has not been subjected to Ionising Radiation as per European Directives 1999/3/EC.

CONFIRMATION OF NANDROLONE STATUS

This is to certify that this product, whole or in part, has not come into contact with Nandrolone or any of its precursors in any way.

CONFIRMATION OF IOC PRODUCT STATUS

This is to certify that this product, whole or in part, has not come into contact with any product/s, which is banned by the IOC (International Olympics Committee) and or WADA.

CONFIRMATION OF ANIMAL TESTING STATUS

This is to certify that all the products sold by Cambridge Commodities have not been tested on animals in any part of its manufacture in accordance with regulation 86/609/EEC.

CONFIRMATION OF PESTICIDES STATUS

This is to certify that the above-mentioned product complies with the regulation (EC) No.396/2005 of 23rd February 2005 and commission Regulation (EU) No. 559/2011 of 7th June 2011 amending annexes II and III of the above Regulation.

CONFIRMATION OF NANOPARTICLE STATUS

This is to certify that unless otherwise stated, the above-mentioned product is free of nanoparticles. Commission Recommendation 2011/696/EU, defines as follows: "'Nanomaterial' means a natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm".



MATERIAL SAFETY DATA SHEET

Section 1 Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product identifier

Product name: Vitamin A Palmitate 1.0 Mio IE/TOC Oil
Product code: P22037

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Food additive(s)

1.3. Details of the supplier of the safety data sheet

Company: Cambridge Commodities Limited
Lancaster Way, Ely, Cambridgeshire, CB6 3NX
Email: qa@c-c-l.com

1.4. Emergency telephone number

Tel: 01353 667258.

Section 2 Hazards Identification

2.1. Classification of the substance or mixture


According to Regulation (EC) No
1272/2008 [CLP]:
Skin Sens. 1B
Repr. 1B (unborn child)
Aquatic Chronic 4

According to Directive 67/548/EEC or
1999/45/EC:
Irritating to skin. May cause sensitization by skin contact. May cause long-term adverse effects in the aquatic environment. May cause harm to the unborn child. When finely distributed, self-ignition is possible.

2.2. Label elements

Globally Harmonized System, EU (GHS): Pictogram:
Signal Word: Danger



Hazard Statement:	H317 May cause an allergic skin reaction. H360D May damage the unborn child. H413 May cause long lasting harmful effects to aquatic life.
Precautionary Statements (Prevention):	P280 Wear protective gloves/protective clothing/eye protection/face protection. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P273 Avoid release to the environment. P202 Do not handle until all safety precautions have been read and understood. P272 Contaminated work clothing should not be allowed out of the workplace.
Precautionary Statements (Response):	P308 + P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician. P303 + P352 IF ON SKIN (or hair): Wash with plenty of soap and water. P333 + P311 If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician. P362 + P364 Take off contaminated clothing and wash before reuse.
Precautionary Statements (Storage):	P405 Store locked up.
Precautionary Statements (Disposal):	P501 Dispose of contents/container to hazardous or special waste collection point.
According to Regulation (EC) No 1272/2008 [CLP]:	Hazard determining component(s) for labelling: VITAMIN-A-PALMITATE, D, L-alpha-tocopherol
According to Directive 67/548/EEC or 1999/45/EC:	Directive 1999/45/EC ('Preparation Directive') Hazard symbol(s): Toxic
	
R-phrase(s):	R38 Irritating to skin. R43 May cause sensitization by skin contact. R53 May cause long-term adverse effects in the aquatic environment. R61 May cause harm to the unborn child.
S-phrase(s):	S36/37 Wear suitable protective clothing and gloves. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S51 Use only in well-ventilated areas. S53 Avoid exposure - obtain special instructions before use. S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

Only for the professional user. Care - avoid exposure - obtain special instructions before use.

Hazard determining component(s) for labelling:

VITAMIN-A-PALMITATE, D, L-alpha-tocopherol

2.3. Other Hazards

According to Regulation (EC) No 1272/2008 [CLP]:

When finely distributed, self-ignition is possible. The product does not contain a substance fulfilling the PBT (persistent/Bioaccumulative/toxic) criteria or the vPvB (very persistent/very Bioaccumulative) criteria.

Section 3 Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature:

Preparation based on: Retinyl palmitate
Dissolved in: Sunflower oil
Stabilized with: 3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol

Retinyl palmitate:

Content (W/W): $\geq 50\%$ - $< 75\%$
INCI Name: Retinyl Palmitate
CAS Number: 79-81-2
EC-Number: 201-228-5
REACH registration number: 01-2119480425-37
Repr. 1B (unborn child)
Aquatic Chronic 4
H360D, H413

3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol:

Content (W/W): $\geq 0.1\%$ - $< 2.5\%$
INCI name: Tocopherol
CAS Number: 10191-41-0
EC-Number: 233-466-0
Skin Sens. 1B
H317



Section 4 Emergency and First Aid Measures

4.1. Description of first aid measures

Immediately remove contaminated clothing. If adverse health effects develop seek medical attention. First aid personnel should pay attention to their own safety.

If inhaled:	Keep patient calm, remove to fresh air, seek medical attention.
On skin contact:	Immediately wash thoroughly with soap and water, seek medical attention.
On contact with eyes:	Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.
On ingestion:	Rinse mouth immediately and then drink plenty of water, induce vomiting, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

Section 5 Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: water spray, carbon dioxide, dry powder, foam
Unsuitable extinguishing media for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

acrylaldehyde; acrolein; prop-2-enal, carbon monoxide, Carbon dioxide. The substances/groups of substances mentioned can be released in case of fire. Evolution of fumes/fog. Burning produces harmful and toxic fumes.

5.3. Advice for fire-fighters

Special protective equipment: Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

In case of combustion evolution of toxic gases/vapours possible. Cool endangered containers with water-spray. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Section 6 Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures see, section 8. Ensure adequate ventilation. Do not breathe vapour/aerosol/spray mists. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material. After taking up material in containers, cover immediately with water layer. For large amounts: Dike spillage. Vacuum up spilled product. Dispose of absorbed material in accordance with regulations. Mop up spills with non-flammable adsorbents (e.g. vermiculite, spill mats). Soiled textiles / cleaning rags / adsorbents and Silica are capable of self-ignition and should be wetted with water and must be disposed of in a safe manner.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

Section 7 Handling and Storage

7.1. Precautions for safe handling

Avoid aerosol formation. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed. Ensure that there is no crystallized product in the container before use. Processing machines must be fitted with local exhaust ventilation. Protection against fire and explosion: Risk of self-ignition when a large surface area is produced due to fine dispersion. Soiled textiles / cleaning rags / adsorbents and Silica are capable of self-ignition and should be wetted with water and must be disposed of in a safe manner. Take precautionary measures against static discharges. Avoid all sources of ignition: heat, sparks, open flame. If exposed to fire, keep containers cool by spraying with water.



7.2. Conditions for safe storage, including any incompatibilities

Segregate from oxidants. Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE). Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Protect from air. Protect from the effects of light. Keep under nitrogen. Storage stability: Storage temperature: 8 - 15 °C. Damage by exceeding the maximum temperature is not reversible.

7.3. Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

Section 8 Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits: 8001-21-6: Sunflower oil

8.2. Exposure controls

Respiratory protection: Respiratory protection in case of vapour/aerosol release. Particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFP3).

Hand protection: Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection: Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection: Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).



General safety and hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Under no circumstances should the product come into contact with the skin of pregnant women or be inhaled by them. Avoid contact with skin. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

Section 9 Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	liquid to semi-crystalline
Colour:	light yellow
Odour:	mild
Odour threshold:	Not determined due to potential health hazard by inhalation.
pH value:	not applicable
softening range:	approx. 30 - 40 °C The substance / product decomposes.
Boiling point:	not applicable
Flash point:	> 100 °C (DIN 51758)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapour pressure.
Flammability:	hardly combustible
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit:	For liquids not relevant for classification and labelling.
Ignition temperature:	approx. 265 °C (DIN 51794)
Vapour pressure:	0.01 mbar (100 °C)
Density:	0.88 g/cm ³ (20 °C)
Relative vapour density (air):	not applicable
Solubility in water:	insoluble
Solubility (qualitative) solvent(s):	organic solvents soluble
Partitioning coefficient n-octanol/ water (log Kow):	not applicable for mixtures
Self-ignition:	Risk of self-ignition when a large surface area is produced due to fine dispersion.
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	27 mPa.s (60 °C)
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating



9.2. Other information

Other Information: If necessary, information on other physical and chemical parameters is indicated in this section.

Section 10 Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated. Corrosion to metals: Corrosive effects to metal are not anticipated.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

When finely distributed, self-ignition is possible.

10.4. Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge. See MSDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid: oxidizing agents

10.6. Hazardous decomposition products

Possible thermal decomposition products: acrylaldehyde; acrolein; prop-2-enal

Section 11 Toxicological Information

11.1. Information on toxicological effects

Assessment of acute toxicity: Virtually nontoxic after a single ingestion.
Information on: Retinyl palmitate
Experimental/calculated data: LD50 rat (oral): > 2,000 mg/kg (BASF-Test)
No mortality was observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.



Assessment of irritating effects:	Skin contact causes slight irritation. May cause slight irritation to the eyes.
Information on:	Retinyl palmitate
Assessment of irritating effects:	Skin contact causes irritation. Not irritating to the eyes.
Information on:	Sunflower oil
Assessment of irritating effects:	May cause slight irritation to the skin. May cause slight irritation to the eyes. May cause slight irritation to the respiratory tract.
Information on:	3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment of irritating effects:	Not irritating to the skin. Not irritating to the eyes.
Assessment of sensitization:	May cause sensitization by skin contact.
Information on:	3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment of sensitization:	Caused skin sensitization in animal studies.
Assessment of mutagenicity:	Based on the ingredients, there is no suspicion of a mutagenic effect.
Information on:	Retinyl palmitate
Assessment of mutagenicity:	In the majority of tests performed (bacteria/microorganisms/cell cultures) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.
Information on:	Sunflower oil
Assessment of mutagenicity:	The chemical structure does not suggest a specific alert for such an effect.
Information on:	3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment of mutagenicity:	Most of the results from the available studies show no evidence of a mutagenic effect.
Assessment of carcinogenicity:	Based on available Data, the classification criteria are not met.
Information on:	Retinyl palmitate
Assessment of carcinogenicity:	Results from a number of long-term carcinogenicity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic. Literature data.
Information on:	3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment of carcinogenicity:	In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Literature data.
Assessment of reproduction toxicity:	Not classified, due to lack of data.
Assessment of teratogenicity:	May cause harm to the unborn child.



Information on:	Retinyl palmitate
Assessment of teratogenicity:	May cause harm to the unborn child.
Assessment of STOT single:	Lack of data.
Information on:	Retinyl palmitate
Assessment of repeated dose toxicity:	Repeated exposure to large quantities may affect certain organs.
Information on:	Sunflower oil
Assessment of repeated dose toxicity:	The information available on the product provides no indication of toxicity on target organs after repeated exposure.
Information on:	3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment of repeated dose toxicity:	Repeated oral uptake of the substance did not cause substance-related effects.
Aspiration hazard:	No data available.
Other relevant toxicity information:	The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

Section 12 Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:	There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.
Information on:	Retinyl palmitate
Toxicity to fish:	LC50 (96 h) > 10,000 mg/l, <i>Leuciscus idus</i> (DIN 38412 Part 15, static) The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Information on:	Sunflower oil
Toxicity to fish:	LC50 (96 h) > 1,000 mg/l, <i>Brachydanio rerio</i> . The details of the toxic effect relate to the nominal concentration.
Information on:	Retinyl palmitate
Aquatic invertebrates:	EC50 (48 h) > 100 mg/l, <i>Daphnia magna</i> (Screening test, static) The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
Information on:	Sunflower oil
Aquatic invertebrates:	EC50 (48 h) > 100 mg/l, <i>Daphnia magna</i> . The details of the toxic effect relate to the nominal concentration.
Information on:	Retinyl palmitate



Aquatic plants:	EC50 (72 h) 152.94 mg/l (growth rate), <i>Scenedesmus subspicatus</i> (DIN 38412 Part 9, static). The product has low solubility in the test medium. An aqueous solution prepared with solubilisers has been tested.
Information on: Aquatic plants:	Sunflower oil EC50 > 100 mg/l, algae. The details of the toxic effect relate to the nominal concentration.
Information on: Microorganisms/Effect on activated sludge:	Retinyl palmitate EC20 (30 min) > 1,000 mg/l, activated sludge, domestic (DIN EN ISO 8192-OECD 209-88/302/EEC, P. C, aerobic)

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O): Information on:	Product is not expected to be readily biodegradable. Retinyl palmitate
Assessment biodegradation and elimination (H2O): Information on:	Not readily biodegradable (by OECD criteria). Moderately/partially biodegradable. 3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol
Assessment biodegradation and elimination (H2O):	Not readily biodegradable (by OECD criteria). Biodegradable.

12.3. Bioaccumulative potential

Information on:	Retinyl palmitate
Assessment bioaccumulation potential:	Does not significantly accumulate in organisms. Because of the product's consistency and low water solubility, bioavailability is improbable.
Information on: Bioaccumulation potential:	Sunflower oil Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

12.4. Mobility in soil

Information on:	Retinyl palmitate
Assessment transport between environmental compartments:	Adsorption in soil: Adsorption to solid soil phase is expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/Bioaccumulative/toxic) criteria or the vPvB (very persistent/very Bioaccumulative) criteria. Self-classification.

12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information

Other Eco toxicological advice: The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

Section 13 Disposal Considerations

13.1. Waste treatment methods

Observe national and local legal requirements.

Section 14 Transport Information

Land transport

ADR:	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

RID:	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known



Inland waterway transport

AND:	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known
Transport in inland waterway vessel:	Not evaluated

Sea transport

IMDG:	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Air transport

IATA/ICAO:	Not classified as a dangerous good under transport regulations
UN number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

14.1. UN number

See corresponding entries for “UN number” for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.



14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

Section 15 Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required

Section 16 Other Information

16.1. Other Information

This advice is given by Cambridge Commodities Ltd who accepts no legal liability for it. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

Individuals working with chemicals should consider all chemicals to be potentially hazardous even if their individual hazards may be uncharacterised or unknown.



This Information provided in this document is subject to change and the batch specific Certificate of Analysis should always be referenced.

To be used as per local legislation.

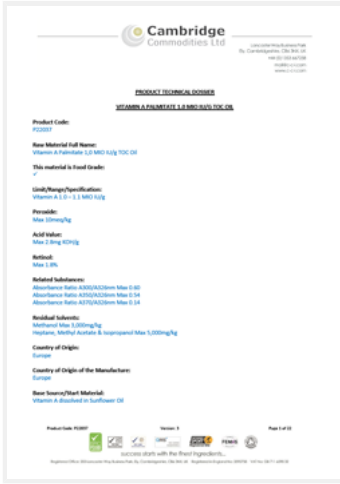
Change History

Version	Change	Customer Notification required Yes / No
1	First Issue	N/A
2	INCI names were added to the MSDS Section 3	No
3	Changed origin of product from fermented to synthetic. Added composition. Removed ethanol as solvent used. General reformat.	Yes

Document Approval

Originator Job Title	QC Team Leader	Approver Job Title	Quality Specialist
<i>Ash Bean</i> Ash Bean (Jan 26, 2018)		<i>Casey White</i> Casey White (Jan 26, 2018)	










P22037-Vitamin A Palmitate 1.0 MIO IETOC Oil-Technical Dossier v3

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