LITERATURE SURVEY

ON

HERBAL

TOOTHPASTE

REPORT

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Submitted by

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1.1 INTRODUCTION

This literature survey report delves into the diverse landscape of herbal toothpaste formulations, focusing on products that features herbal ingredients. This reports aims to provide a comprehensive overview of the existing scientific literature on herbal toothpaste, shedding light on the botanical components commonly employed, their purported benefits.

Through this literature survey, we aim to offer valuable insights into the current state of herbal toothpaste formulations and their place in the evolving landscape of natural oral care products.

2.1 Test Formula

Sr. No.	Name of Ingredients	Role of Ingredients
1	Calcium Carbonate	Abrasive
2	Vegetable Glycerin	Humectant
3	Stevia Sugar/Raw Cane Sugar/Date Syrup	Sweetener
4	Reetha	Cleansing agent, Foaming agent
5	Rosemary Extract	Preservative
6	Papaya Extract	Antioxidant, Reduce Stains and protects against plague formulation
7	Sea salt	Reduce Bacteria, Preservative & Helps to maintain pH level of mouth
8	Neem Extract	Preventing cavities and Gum disease, Whitening & Antibacterial
9	Aloe Vera Extract	Control bacteria & soothing agent
10	Liquorice extract	Anti-inflammatory, Antioxidant
11	Tomar Extract	Antioxidant, Anti-inflammatory & Relieve mouth pain and dental problems
12	Babool Extract	Antibacterial, anti-inflammatory and astringent
13	Pomegranate Extract	Strengthening gums and fastening loose teeth, anti-inflammatory
14	Sodium Carboxymethyl Cellulose	Thickener
15	Peppermint oil	Flavouring agent, Controls bad breath
16	Nano-Hydroxyapatite	Remineralizing teeth
17	Spearmint oil	Flavouring agent, Controls bad breath
18	Clove oil	Flavouring agent, Antioxidant
19	Cinnamon oil	Flavouring agent
20	Menthol	Flavouring agent, Controls bad breath
21	Strawberry Syrup/Mint/Chocolate Mint	Flavouring agent
22	Aqua	Solvent

Common Differences between Ayurvedic Toothpaste vs Regular Toothpaste

The distinguishing characteristics that set Ayurvedic toothpaste apart from conventional toothpaste are explained in detail in this table.

Parameters	Regular Toothpaste	Ayruvedic Toothpaste
Cleaning Action	Depends on the synthetic abrasives and fluoride to clean your teeth	It cleans the teeth using natural abrasives such as neem, miswak, charcoal, etc.
Ingredients	Contains artificial flavours, fluoride. And synthetic chemicals	Natural herbs and ingredients such as neem, aloe vera, clove, bamboo, etc.
Chemicals	Contains artificial colors, preservatives & sodium lauryl sulphate	No additives or harsh chemicals
Flavours	It may include artificial sweeteners such as Sodium saccharin and Aspartame	It only contains natural flavours derived from spices and herbs like clove, mint, pepper, etc.
Sensitivity	It might cause sensitivity due to chemicals	Suitable for people with sensitivity issues in gums and teeth
Methods used	Leverages state-of-the-art dental technology	Derived from Ayurvedic practices
Antibacterial Properties	Contains synthetic antibacterial agents	Use natural antibacterial herbs only
Holistic approach	Focuses on cleaning & fluoride protection	Encourages gum and oral health

Environmental impact	Packaging or ingredients may have greater environmental impacts	An eco-friendly choice with sustainable packaging

List of Comparatives/ Reference Brands Available for Indian Consumers

1. Dabur Red Toothpaste
2. Himalaya Complete Care Toothpaste
3. Colgate Swarna Vedshakti Toothpaste
4. Vicco Toothpaste
5. Sri Sri Tattva Herbal Toothpaste
6. Patanjali Dant Kanti
7. AYURFRESH Oral Care Toothpaste
8. Dabur Red Ayurvedic Paste
9. MYDENT Cavity Protection Toothpaste
10. Haoma Herbal Toothpaste
11. Bentodent Toothpaste
12. Ayush Anti Cavity Toothpaste

Chapter-4

Ingredients Details/ Category

1. Name of Ingredient: Calcium Carbonate
   Role of Ingredient in the formulation/Category: Abrasive

2. Name of Ingredient: Vegetable Glycerin
   Role of Ingredient in the formulation/Category: Humectant

3. Name of Ingredient: Stevia Sugar/Raw Cane Sugar/Date Syrup
   Role of Ingredient in the formulation/Category: Sweetener

4. Name of Ingredient: Reetha
   Role of Ingredient in the formulation/Category: Cleansing agent, Foaming agent

5. Name of Ingredient: Rosemary Extract
   Role of Ingredient in the formulation/Category: Preservative

6. Name of Ingredient: Papaya Extract
   Role of Ingredient in the formulation/Category: Antioxidant, Reduce Stains and protects against plague formulation

7. Name of Ingredient: Sea salt
   Role of Ingredient in the formulation/Category: Reduce Bacteria, Preservative & Helps to maintain pH level of mouth

8. Name of Ingredient: Neem Extract
   Role of Ingredient in the formulation/Category: Preventing cavities and Gum disease, Whitening & Antibacterial

9. Name of Ingredient: Aloe Vera Extract
   Role of Ingredient in the formulation/Category: Control bacteria & soothing agent

10. Name of Ingredient: Liquorice extract
    Role of Ingredient in the formulation/Category: Anti-inflammatory, Antioxidant

11. Name of Ingredient: Tomar Extract
    Role of Ingredient in the formulation/Category: Antioxidant, Anti-inflammatory & Relieve mouth pain and dental problems

12. Name of Ingredient: Babool Extract
    Role of Ingredient in the formulation/Category: Antibacterial, anti-inflammatory and astringent

13. Name of Ingredient: Pomegranate Extract
    Role of Ingredient in the formulation/Category: Strengthening gums and fastening loose teeth, anti-inflammatory

14. Name of Ingredient: Sodium Carboxymethyl Cellulose
    Role of Ingredient in the formulation/Category: Thickener

15. Name of Ingredient: Peppermint oil
    Role of Ingredient in the formulation/Category: Flavouring agent, Controls bad breath

16. Name of Ingredient: Nano-Hydroxyapatite
    Role of Ingredient in the formulation/Category: Remineralizing teeth

17. Name of Ingredient: Spearmint oil
    Role of Ingredient in the formulation/Category: Flavouring agent, Controls bad breath

18. Name of Ingredient: Clove oil
    Role of Ingredient in the formulation/Category: Flavouring agent, Antioxidant

19. Name of Ingredient: Cinnamon oil
    Role of Ingredient in the formulation/Category: Flavouring agent

20. Name of Ingredient: Menthol
    Role of Ingredient in the formulation/Category: Flavouring agent, Controls bad breath

21. Name of Ingredient: Strawberry Syrup/Mint/Chocolate Mint
    Role of Ingredient in the formulation/Category: Flavouring agent

22. Name of Ingredient: Aqua
    Role of Ingredient in the formulation/Category: Solvent

Name of Ingredient: - Calcium Carbonate

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Calcium Carbonate**
CAS No	**:**	**471-34-1**
Date	**:**	**23/1/24**

Sr. No.	Test	Specification
01.	Description	White color powder
02.	Solubility	Insoluble in water and Ethanol
03.	Identification	Passes Test
04.	Substances insoluble in acetic acid	≤ 0.2%
05.	Substances insoluble in hydrochloric acid	≤ 0.005%
06.	Chloride (Cl)	≤ 0.005%
07.	Sulfate (SO_4)	≤ 0.03%
08.	Heavy Metals (as Pb)	≤ 0.002 %
09.	Total nitrogen (N)	≤ 0.001%
10.	Al (Aluminium)	≤ 0.005%
11.	As (Arsenic)	≤ 0.0004%
12.	Ba (Barium)	Passes test
13.	Cu (Copper)	≤ 0.0005%
14.	Fe (Iron)	≤ 0.001%
15.	K (potassium)	≤ 0.005%
16.	Mg (Magnesium)	≤ 0.02%
17.	Na (Sodium)	≤ 0.2%
18.	Pb (Lead)	≤ 0.0005%
19.	Sr (Strotium)	≤ 0.1%
20.	Magnesium and alkali metals	≤ 1.5%
21.	Particle Size (d 50)	about 14 µm
22.	Bulk Density	~0.52 g/cm^3
23.	True Density	~5.3 g/cm^3
24.	Loss of Drying (at 200°C)	≤1.0 %
25.	Assay (complexometric; calculated on dried substance)	98.5-100.5%

Name of Ingredient: - Vegetable Glycerin

Master Copy		Controlled Copy

Specifications		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Vegetable Glycerin (EP)**
Date	**:**	**23/1/24**
CAS No.	**:**	**56-81-5**

Sr. No.	Test	Specification
01.	Description	Clear, colourless or almost colourless syrupy liquid, oily to the touch
02.	Color APHA	10 Max
03.	Solubility	Slightly soluble in acetone, practically insoluble in fatty oils and essential oils, miscible with water.
04.	Refractive Index	1.470 – 1.475 @ 20°C
05.	Identification B: DEG & EG Impurities	
	Diethylene Glycol:	0.1% Max
	Ethylene Glycol	0.1% Max
	Total Impurity	1.0% Max
	Residue on Ignition	0.01% Max
06.	Halogenated Compounds	35 ppm Max
07.	Acidity (0.1N NaOH)	0.2 Max
08.	Esters (0.1N HCl)	8 ml Min
09.	Sulphated Ash	0.01 % Max
10.	Aldehydes	10 ppm Max
11.	Chlorides	10 ppm Max
12.	Heavy Metals as Pb	5 ppm Max
13.	Water content	<0.5 %
14.	Saponification Equivalent	0.024 % Na_2O Max
15.	Microbiology	
	Total Plate Count:	1 x 10^2 cfu/g max.
	E.coli	Absent in 1g
	Salmonella	Absent in 25g
	Yeast & Mould	10 cfu/g max
16.	Assay	99.5 %

Name of Ingredient: - Reetha

Master Copy		Controlled Copy

Specifications		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Reeta**
Date	**:**	**23/1/24**
CAS No.	**:**	**223748-41-2**

Sr. No.	Test	Specification
01.	Description	Off white to light brown color powder having characteristic odor and taste
02.	Solubility in water (w/w)	NLT 85%
03.	Solubility in 50% alcohol (w/w)	NLT 70%
04.	Identification by TLC	Positive
05.	pH 1% sol. (w/v)	5-7
06.	Specific Gravity	0.900-2.00
07.	Assay Total Saponins	NLT 10%
08.	Microbiological Tests	
	Total Plate Count	NMT-1000 cfu/gm
	Yeast/Molds	NMT-100 cfu/gm
	E.coli	Absent
	Salmonella	Absent
	Total coliforms	Absent

Name of Ingredient: - Rosemary Extract

Master Copy		Controlled Copy

Specifications		
Department	:	**Quality Control Department**
Product Name	:	**Rosemary Extract**
Date	:	**23/1/24**
CAS No.	:	**84604-14-8**

Sr. No.	Test	Specification
01.	Description	Beige to light brown powder
02.	Solubility	Insoluble in water; soluble in vegetable and animal fats and oils
03.	Loss on drying	Not more than 5%
04.	Bulk density	0.925-0.950 g/l
05.	Refractive index	1.475-1.485
06.	Residual solvents	
	Acetone	Not more than 50 mg/kg
	Arsenic	Not more than 3 mg/kg
	Lead	Not more than 2 mg/kg
07.	Assay	Not less than 5%
08.	Microbiological	
	TVC	1000 cfu/g max
	Yeasts	100 cfu/g max
	Moulds	100 cfu/g max
	Enterobacteriacae	0 cfu/g max
	E coli	0 cfu/g max
	Aerobic Plate Count	1000 cfu/g max

Name of Ingredient: - Papaya Extract

Master Copy		Controlled Copy

Specification		
Department	:	**Quality Control Department**
Product Name	:	**Papaya Extract (liquid)**
Date	:	**27/1/24**
CAS No.	:	**130121-2**

Sr. No.	Tests	Specification
1.0	Appearance	Yellowish-brown to brown liquid
2.0	Odour	Characteristics
3.0	Density/Specific Gravity (@ 25 °C)	1.05 - 1.15
4.0	Boiling Point (°C)	290
5.0	Water solubility	Complete
6.0	Refractive index (20°C)	1.385-1.415
7.0	Specific Gravity (20°C)	1.120-1.150
8.0	Water Content Karl Fischer	48.0-52.5
9.0	pH Value (20°C)	4.5-6.5
10.0	Total Moulds/Yeasts	10 Max cfu/ml

Name of Ingredient: - Sea Salt

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Sea Salt**
Date	**:**	**27/1/24**
CAS No.	**:**	**7647-14-5**

Sr. No.	Test	Specification
01.	Description	Odourless, typical salty taste. White and Homogenous
02.	Odor	No foreign taste and odour
03.	Humidity	Max 0.3%
04.	Arsenic	Max 0.5 ppm
05.	Copper	Max 2.0 ppm
06.	Lead	Max 2.0 ppm
07.	Mercury	Max 0.1 ppm
08.	Calcium	Max. 0.1%
09.	Sulphate	Max. 0.5%
10.	Magnesium	Max. 0.1%
11.	Cadmium	Max. 0.5 ppm
12.	Insolubility in water	Max. 0.1%
13.	Insolubility in acid	Max. 0.1%
14.	Sodium Chloride (Dry)	99.80 % min
15.	Heavy Metals (as Pb)	2.0 ppm Max

Name of Ingredient: - Neem Extract

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Neem Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**130121-2**

Sr. No.	Tests	Specification
1.	Appearance	Oily liquid at approx. 20°C, turning waxy then solid at temperatures below approx. 10°C
2.	Colour	Brown to greenish brown
3.	Refractive Index @ 20°C	1.450-1.490
4.	Specific Gravity @ 20°C	0.900-0.975 g/ml
5.	Acid Value	≤ 20.0 mg KOH/g
6.	Peroxide Value	≤ 20.0 meq O2/kg
7.	Saponification Value	190 – 200 mg KOH/g
8.	Unsaponifiable Matter	≤ 4.0 %
9.	Heavy metals	≤ 10.0 ppm
10.0	Azadiractin content	≤ 2500 ppm
11.0	Flash Point (Closed Cup)	>280°C

Name of Ingredient: - Aloe Vera Extract

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Aloe Vera Extract**
Date	**:**	**27/1/24**
CAS No.	**:**	**85507-69-3**

Sr. No.	Tests	Specification
1.	Appearance	White coloured powder
2.	Odour & taste	Characteristics
3.	Loss on drying	≤5.0%
4.	Bulk density	0.30-0.80 gm/ml
5.	pH	4-7
6.	Identification	Complies with standard
7.	Alloin content	≤0.1 ppm
8.	Total plate count	≤ 1000cfu/gm
9.	Yeast & Mould	≤ 100 cfu/gm
10.0	E.coli & Salmonella	Absent/25 gm
11.0	Coliform	Absent/10 gm
12.0	Heavy Metals	≤ lO ppm
13.0	Lead	≤ 3.0 ppm
14.0	Arsenic	≤ 0.1 ppm
15.0	Cadmium	≤ 1.0 ppm
16.0	Mercury	≤ 0.1 ppm

Name of Ingredient: - Liquorice Extract

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Liquorice Extract**
Date	**:**	**27/1/24**
CAS No.	**:**	**68916-91-6**

Sr. No.	Tests	Specification
1.0	Appearance	Brownish liquid
2.0	Odor	Characteristic
3.0	Solubility	Soluble in water; soluble in most organic solvents
4.0	pH	4.0-6.5 at 25°C
5.0	Refractive Index	1.3920-1.5000 at 25°C
6.0	Specific Gravity	1.05-1.15 at 25°C
7.0	Alcohol % v/v	27.6 – 32.6
8.0	Physico-chemical Analysis:	
9.0	Arsenic Content(As)	3 max. mg/kg
10.0	Cadmium Content(Cd)	3 max. mg/kg
11.0	Lead Content(Pb)	10 max. mg/kg
12.0	Nickel Content(Ni)	10 max. mg/kg
13.0	Mercury Content	1 max mg/kg
14.0	Microbiological Analysis:	
15.0	Arsenic content(As)	$<10^3$ cfu/g
16.0	Cadmium Content(Cd)	Absent
17.0	Lead Content(Pb)	Absent
18.0	Nickel Content(Ni)	Absent
19.0	Mercury Content	Absent

Name of Ingredient: - Tomar Extract

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Tomar Seed Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**68916-91-6**

Sr. No.	Tests	Specification
1.0	Appearance	Light yellow oily liquid
2.0	Solubility	Soluble in alcohol and oils, Insoluble in water
3.0	Specific Gravity	0.910 @25°C
4.0	Refractive Index	1.4795 @25°C
5.0	Optical Rotation	+12° @25°C
6.0	Heavy metal	Not more than 5 ppm
7.0	Microbial Count	Nil

Name of Ingredient: - Pomegranate Extract

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Pomegranate Extract**
Date	**:**	**27/1/24**
CAS No.	**:**	**84961-57-9**

Sr. No.	Tests	Specification
1.0	Appearance	Fine Brown colour powder
2.0	Loss on Drying, %	≤ 5.0
3.0	Ash, %	≤ 5.0
4.0	Heavy Metals	
	Arsenic (As), mg/kg	≤ 1.0
	Lead (Pb), mg/kg	≤ 1.0
	Cadmium (Cd), mg/kg	≤ 3.0
	Mercury (Hg), mg/kg	≤ 1.0
5.0	Microbiological control	
	Total Aerobic Plate Count, cfu/g	≤ 1,000
	Yeast & Mold, cfu/g	≤ 100
	Coliforms, cfu/g	≤ 10
	Escherichia Coli,25 g	Negative
	Staphylococcus Aureus, 25g	Negative
	Salmonella, 25g	Negative

Name of Ingredient: - Sodium Carboxy Methyl Cellulose

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Sodium Carboxymethyl Cellulose**
Date	**:**	**27/1/24**
CAS No.	**:**	**9004-32-4**

Sr. No.	Test	Specification
01.	Description	White or slightly yellowish, almost odourless hygroscopic granules, powder or fine fibres
02.	Solubility	Yield viscous colloidal solution with water; insoluble in ethanol
03.	Loss on drying	Not more than 12% after drying
04.	pH of A 1% solution @ 25°C	6.0-8.5
05.	Sodium (dried Basis)	Not more than 12.4% on the dried basis
06.	Heavy Metals (As Pb)	10 max. ppm
07.	Lead	2 max. ppm
08.	Arsenic	3 max. ppm
09.	Sodium chloride	Not more than 0.5% on the dried basis
10.	Viscosity of 1% Aqueous Solution @25°C	1,500-3,000 cps
11.	Free glycolate	Not more than 0.4% as sodium glycolate on the dried basis
12.	Total plate count	1000/g max.
13.	Yeast and Moulds	100/g max.
14.	Coliform bacteria	Nil/g
15.	Salmonella	Nil/g
16.	Assay	Not less than 99.5% of sodium carboxymethyl cellulose, calculated on the dried basis

Name of Ingredient: - Peppermint Oil

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Peppermint Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**8006-90-4**

Sr. No.	Test	Specification
01.	Appearance	Colorless, Pale Yellow or Pale Greenish-Yellow Liquid
02.	Solubility	Miscible with Ethanol (96%) and with Methylene Chloride
03.	Relative Density @ 25°C	0.1885-0.915
04.	Refractive index @ 25°C	1.445-1.470
05.	Optical Rotation °C	-2 to -35
06.	Heavy Metals	
	Arsenic	<3 ppm
	Lead	<3 ppm
	Cadmium	<1 ppm
	Mercury	<0.1 ppm
07.	Acid Value	≤ 1.4

Name of Ingredient: - Nano-Hydroxyapatite

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Nano-Hydroxyapatite**
Date	**:**	**27/1/24**
CAS No.	**:**	**1306-06-05**

Sr. No.	Particulars	Specification
1.	Appearance	White powder, Hexagonal crystal structure
2.	Purity	≥ 99%
3.	Specific Surface Area (m2/g)	>9.4 m2/g
4.	Melting Point	1650°C
5.	Particle Size	0~50μm
6.	Molecular Weight	1004
7.	Total Heavy Metals (as Pb)	≤ 20 ppm
8.	Specific surface area	≥ 80 m^2/g

Name of Ingredient: - Spearmint Oil

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Spearmint Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**8008-79-5**

Sr. No.	Particulars	Specification
01.	Appearance	Clear, Colorless to Pale Yellow Liquid
02.	Odor	Minty, gentler than peppermint
03.	Color	Straw yellow to light yellow
04.	Solubility	Soluble in alcohol and fixed oils
05.	Specific Gravity @20°C	09170-0.9340
06.	Optical Gravity @20°C	-62.0° to - 50.0 °
07.	Refractive Index @20°C	1.480-1.494

Name of Ingredient: - Clove Oil

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Clove Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**8000-34-8**

Sr. No.	Test	Specification
01.	Colour and appearance	Colorless to pale yellow
02.	solubility	Soluble in alcohol & oils. Insoluble in water
03.	Specific Gravity	1.038 to 1.060 @ 25 °C
04.	Refractive Index	1.523.0 to 1.531.0
05.	Optical Rotation	-1° to 10°@ 25 °C
06.	Total eugenol, percent by volume	82-87%

Name of Ingredient: - Cinnamon Oil

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Cinnamon Oil**
Date	**:**	**27/1/24**
CAS No.	**:**	**8015-91-6**

Sr. No.	Test	Specification
01.	Description	Pale yellow to dark yellow or light to dark amber
02.	Odour	Powerful, diffusive, warm, spicy and tenacious
03.	Solubility	Soluble in alcohol and oils. Insoluble in water
04.	Flash Point	93°C
05.	Specific Gravity	1.0340 to 1.0550
06.	Refractive Index	1.5250 to 1.5400
07.	Optical Rotation	-2° to +2.5°
08.	Cinnamic Aldehyde	70.00 - 83.00%
09.	Cinnamyl Acetate	< 8.00%
10.	Eugenol	< 15.00%
11.	Coumarin	Absent

Name of Ingredient: - Menthol

Master Copy		Controlled Copy

Specification		
Department	**:**	**Quality Control Department**
Product Name	**:**	**Menthol**
Date	**:**	**27/1/24**
CAS No.	**:**	**218-690-9**

Sr. No.	Test	Specification
01.	Description	Colorless, transparent hexagonal or needle like crystals.
02.	Solubility	Soluble in either, ethanol (95%), volatile oils and liquid paraffin.
03.	Melting point(℃)	41～44℃
04.	Specific rotation (25℃)	-45°～-51°
05.	Limit of Non-volatile residue (%)	Not overrun 0.05 under condition of 105℃
06.	Organic volatile impurities	Solvent-Use dimethyl sulfoxide
07.	Chromatographic purity	The peak response due to menthol is not less than 97%
08.	Non – Volatile Matter	<=0.03%
09.	L-Menthol	≥97
10.	Heavy metal	≤10ppm
11.	Related Substance (GC)	1.0% Maximum
12.	Optical Rotation	50.0 to – 48.0 C

Name of Material: - Calcium Carbonate

Section 1: Identification of the substance

1.1 Product Identifiers

Product Name : Calcium Carbonate
Synonyms : Precipitated chalk; Aragonite; Agricultural limestone; Agstone; Bell mine pulverized limestone; Calcite; Dolomite; Franklin; Boiling chips.
CAS-No. : 471-34-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

Section 2: Hazard Identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

2.3 Other Hazards

This substance/mixture contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Section 3: Composition/information on ingredients

3.1 Substances

Formula	:	$CCaO_3$
Molecular weight	:	100,09 g/mol
CAS-No.	:	471-34-1
EC-No.	:	207-439-9

Section 4: First Aid Measures

4.1 Description of first-aid measures

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Calcium oxide
Not combustible.
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

none

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental Precautions

No special precautionary measures necessary.

6.3 Methods and materials for containment and cleaning up

Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed, Dry.
Hygroscopic

Storage class

Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Section 8: Exposure controls/ Personal protection

8.1 Engineering Controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

8.2 Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA- Final PELs
Calcium carbonate	None listed	10 mg/m^3 TWA (total dust); 5 mg/m^3 TWA (repairable dust)	15 mg/m^3 TWA (total dust); 5 mg/m^3 TWA (repairable fraction) (listed under Calcium carbonate)

OSHA Vacated PELs: Calcium carbonate: No OSHA vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9: Physical and Chemical Properties

9.1 Information on basis physical and chemical properties

a) Physical state	powder
b) Color	white
c) Odor	No data available
d) Melting point/freezing point	Melting point/freezing point: 800 °C - Decomposes on heating.
e) Initial boiling point and boiling range	800 °C

f) Flammability (solid, gas)	The product is not flammable. - Test N.1: Test method for readily combustible solids
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	Not applicable
i) Autoignition temperature	not auto-flammable
j) Decomposition temperature	No data available
k) pH	8.0
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m) Water solubility	0,017 g/l at 20 °C - OECD Test Guideline 105- slightly soluble
n) Partition coefficient: n-octanol/ water	Not applicable for inorganic substances
o) Vapor pressure	No data available
p) Density	2,93 g/cm3 at 25 °C - lit.
Relative density	No data available
q) Relative vapor density	No data available
r) Particle characteristics	No data available
s) Explosive properties	No data available
t) Oxidizing properties	None

9.2 Other safety information

No data available

Section 10: Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of Hazardous Reactions

Generates dangerous gases or fumes in contact with:
acids
carbon dioxide
ammonium compounds
acidic
salts acidic

Exothermic reaction with:
Fluorine
Aluminium
magnesium

10.4 Conditions to avoid

Exposure to moisture may affect product quality. No information available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - > 2.000 mg/kg
(OECD Test Guideline 420)
LC50 Inhalation - Rat - male and female - 4 h - > 3 mg/l - aerosol

(OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - reconstructed human epidermis (RhE)
Result: No skin irritation - 15 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation
Eyes - Bovine cornea
Result: No eye irritation - 4 h
(OECD Test Guideline 437)

Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse
Result: negative
(OECD Test Guideline 429)

Germ cell mutagenicity
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Endocrine disrupting properties

Product:

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 48 Days - NOAEL (No observed adverse effect level) - 1.000 mg/kg

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.
Handle in accordance with good industrial hygiene and safety practice.

Section 12: Ecological information

12.1 Toxicity

Toxicity to fish	semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l -48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - 14 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability	aerobic- Exposure time 28 d Result: 90 % - Readily biodegradable. (OECD) Test Guideline 301B)

12.3 Bio accumulative potential

Bioaccumulation is unlikely.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bio-accumulative and toxic (PBT), or very persistent and very bio-accumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No ecological problems are to be expected when the product is handled and used with due care and attention.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-series: None listed.
RCRA U-series: None listed

Section 14: Transport information

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class (es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA:

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

Further information

Not classified as dangerous in the meaning of transport regulations.

Section 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

15.3 European/International Regulations

European Labelling in Accordance with EC Directives
Hazard Symbols:
XI
Risk Phrases:
R 36 Irritating to eyes
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 39 wear eye/face protection.

WGK (Water Danger/ Protection)

CAS # 471-34-1 : 0

Canada –DSL/NSDL

CAS # 471-34-1 is listed on Canada's DSL List.

Canada- WHMIS

This product has a WHMIS classification of D2B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure list

CAS # 471-34-1 is not listed on the Canadian Ingredient Disclosure List.

Name of Material:- Vegetable Glycerin

Section 1: Identification of the substance

1.1 Product identifier

· **Trade name:** Vegetable Glycerine 4 fl oz / Vegetable Glycerine 16 fl oz / Vegetable Glycerine 32 fl oz
· **Product code:**
· **CAS Number:**
56-81-5
· **Recommended use and restriction on use**
· **Recommended use:** Additive
· **Restrictions on use:** No relevant information available.

Section 2: Hazard Identification

· **Classification of the substance or mixture**
The substance is not classified as hazardous according to the Globally Harmonized System (GHS).
· **Label elements**
· **GHS label elements** Not regulated.
· **Hazard pictograms:** Not regulated.
· **Signal word:** Not regulated.
· **Hazard statements:** Not regulated.
· **Precautionary statements:** Not regulated.
Other hazards : There are no other hazards not otherwise classified that have been identified

Section 3: Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
56-81-5 Glycerol

Section 4: First Aid Measures

Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**
Generally the product does not irritate the skin.Wash with soap and water.
If skin irritation is experienced, consult a doctor.
· **After eye contact:**
Remove contact lenses if worn. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. ·
· **After swallowing:**
Product is indicated for oral usage. In cases of over ingestions or pediatric ingestions, DO NOT INDUCE VOMITING. Contact a physician or hospital. ·
· **Most important symptoms and effects, both acute and delayed**:
Gastric or intestinal disorders when ingested. ·
· **Indication of any immediate medical attention and special treatment needed:**
If medical advice is needed, have product container or label at hand.

Section 5: Fire-Fighting Measures

· Extinguishing media

· Suitable extinguishing agents:

Carbon dioxide
Fire-extinguishing powder
Foam Water fog / haze
· **For safety reasons unsuitable extinguishing agents:** None.
· **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective

Section 6: Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation.
Product forms slippery surface when combined with water.
Use personal protective equipment as required.
· **Environmental precautions**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Methods and material for containment and cleaning up**
Wipe up small spills with paper towel and discard.
For larger spills, add sawdust, chalk or other inert binding material, then sweep up and discard.

Dispose of the collected material according to regulations.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Section 7: Handling and Storage

· **Handling**

· **Precautions for safe handling:** Keep out of reach of children.
· **Information about protection against explosions and fires:** No special measures required.
· **Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:**
Avoid storage near extreme heat.
Store in cool, dry conditions in well sealed receptacles.
· **Information about storage in one common storage facility:**
Store away from oxidizers, strong acids, strong bases.
· **Further information about storage conditions:** This product is hygroscopic.
· **Specific end use(s)** No relevant information available

Section 8: Exposure controls/Personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
56-81-5 Glycerol	
PEL (USA	Long-term value: 15* 5** mg/m^3
	mist; *total dust **respirable fraction
TLV (USA)	TLV withdrawn-insufficient data human occup. ex
EL (Canada)	Long-term value: 10* 3** mg/m^3
	mist; **mist, respirable
EV (Canada)	Long-term value: 10 mg/m^3
LMPE (Mexico)	Long-term value: 10 mg/m

Exposure controls
· General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
· **Engineering controls:** No relevant information available.

· **Breathing equipment:** Not required under normal conditions of use.
· **Protection of hands:**
Gloves are advised for repeated or prolonged contact.
Wear protective gloves to handle contents of damaged or leaking units.
· **Eye protection:** Follow relevant national guidelines concerning the use of protective eyewear.
· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment** No special requirements.
· **Risk management measures** No special requirements

Section 9: Physical and chemical properties

· Information on basic physical and chemical properties

· Appearance:
Form: Viscous

Color : · Odor · Odor threshold	Colorless Pleasant Not determined
pH value: · Melting point/Melting range: · Boiling point/Boiling range:	Not determined 18.2 °C (64.8 °F) 290 °C (554 °F
Flash point:	160 °C (320 °F) The product is not flammable
· Flammability (solid, gaseous):	Not applicable.
· Auto-ignition temperature:	400 °C (752 °F)
· Decomposition temperature:	Not determined
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits Lower: Upper: · Oxidizing properties:	 Not determined. Not determined Non-oxidizing.
· Vapor pressure at 20 °C (68 °F):	<0.1 hPa (<0.1 mm Hg)
· Density: Relative density at 20 °C (68 °F): Vapor density: Evaporation rate:	 1.26 Not determined Not determined
· Solubility in / Miscibility with Water:	Fully miscible
· Partition coefficient (n-octanol/water):	Not determined
· Viscosity Dynamic: Kinematic: · Other information	 Not determined Not determined No relevant information available

Section 10: Stability and reactivity

· **Reactivity:** No relevant information available.
· **Chemical stability:** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
Toxic fumes may be released if heated above the decomposition point.
· **Conditions to avoid** Excessive heat.
· **Incompatible materials** Oxidizers, strong bases, strong acids
· **Hazardous decomposition products**
Under fire conditions only:
Carbon monoxide and carbon dioxide

Section 11: Toxicological Information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**		
56-81-5 Glycerol		
Oral	LD50	12,600 mg/kg (rat)

· **Primary irritant effect:**
· **On the skin:** Based on available data, the classification criteria are not met.
· **On the eye:** Based on available data, the classification criteria are not met.
· **Sensitization:** Based on available data, the classification criteria are not met.

IARC (International Agency for Research on Cancer):
None of the ingredients are listed.

NTP (National Toxicology Program):
None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration):
None of the ingredients are listed

· **Probable route(s) of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.
· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:** Based on available data, the classification criteria are not met.
· **Reproductive toxicity:** Based on available data, the classification criteria are not met.
· **STOT-single exposure:** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
· **Aspiration hazard:** Based on available data, the classification criteria are not met.

Section 12: Ecological Information

Toxicity
· **Aquatic toxicity** No relevant information available.
· **Persistence and degradability** No relevant information available.
· **Bio-accumulative potential:** No relevant information available.
· **Mobility in soil:** No relevant information available.
· **Additional ecological information**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Due to available data on eliminability/decomposition and bioaccumulation potential, a prolonged damage of the environment is unlikely.
Other adverse effects No relevant information available.

Section 13: Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Smaller quantities can be disposed of with household waste.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non hazardous wastes.
· **Uncleaned packaging**
· **Recommendation:** Disposal must be made according to official regulations. · **Recommended cleansing agent:** Water, if necessary with cleansing agents.

Section 14: Transport information

· **UN-Number**	
· **DOT, ADR/RID/ADN, IMDG, IATA**	Not regulated

· UN proper shipping name **· DOT, ADR/RID/ADN, IMDG, IATA**	Not regulated.
· Transport hazard class(es) **· DOT, ADR/RID/ADN, IMDG, IATA · Class**	Not regulated
· Packing group **· DOT, ADR/RID/ADN, IMDG, IATA**	Not regulated
· Environmental hazards **· Marine pollutant:**	Not regulated
· Special precautions for use	Not applicable
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

Section 15: Regulatory information

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

· United States (USA)

· SARA

· Section 302 (extremely hazardous substances):
None of the ingredients are listed.

· Section 355 (extremely hazardous substances):
None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):
None of the ingredients are listed

· TSCA (Toxic Substances Control Act)
Substance is listed

· Proposition 65 (California)

Chemicals known to cause cancer:
None of the ingredients are listed.

· Chemicals known to cause developmental toxicity for females:
None of the ingredients are

Chemicals known to cause developmental toxicity for males:
None of the ingredients are

Chemicals known to cause developmental toxicity:
None of the ingredients are listed.

EPA (Environmental Protection Agency):
None of the ingredients are listed

IARC (International Agency for Research on Cancer):
None of the ingredients are listed

Canadian Domestic Substances List (DSL):
Substance

Section 16: Other information

Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
OSHA: Occupational Safety & Health Administration

Name of Materials:- Reetha

Section 1: Identification of the substance

Product name: Reetha Powder

INCI Name: Sapindus Trifoliatus

Section 2: Composition & Ingredient Information

CAS Number: 223748-41-2

EINECS Number: 923-782-3

FEMA Number: Not Available

REACH Registration No: Exempted in accordance with Annex V.7

Section 3: Hazards Identification

3.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]
No Known Hazard identified
Adverse physicochemical, human health and environmental effects
No Known Hazard identified

3.2. Label elements

According to EC directives or the corresponding national regulations there is no labelling obligation for this product.

3.3. Other hazards

No additional information available

Section 4: First Aid Measures

Description of First-aid measures general	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
Eye Contact	Flush with plenty of Water or eye wash solution for 15 minutes. Get Medical attention if irritation persists.
Skin Contact	Non-hazardous, however over exposure may cause slight irritation. Flush with water. No adverse effects are expected.
Ingestion	Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention

Inhalation	Use Dust mask,if breathing becomes difficult, remove person to fresh air & maybe given oxygen and seek medical attention. Allow the victim to rest.

Section 5: Fire Fighting Measures

Flash point/ Smoke Point/ Fire Point	Non-Flammable
Recommended Extinguishes and firefighting measures	This material is compatible with all extinguishing media.
1.2 Medical conditions generally aggravated by Exposure. 1.3 Recommendations to Physicians	Contact with Eyes may cause Irritation Treat symptoms and eliminate overexposure

Section 6: Measures in case of Accidental release- Steps for spills

Personal Safety **Methods for cleaning up**	Vacuum, sweep up or flush with water and dispose of according to local regulations. Avoid generating dust. Ventilate area.
<u>For emergency responders</u> **Protective equipment:** **Emergency procedures**	Equip clean-up crew with proper protection. Ventilate area
Environmental measures	Prevent entry to sewers and public waters.
Methods and material for containment and cleaning up	Clear up rapidly by scoop or vacuum. Minimise generation of dust.
Storage conditions	Keep container closed and protect from Humidity.
Storage premises	No Special storage conditions required. Store away from other materials.

Section 7: Handling & Storage

Precautions for safe Handling	Wash hands and other exposed areas with mild soap and water before eating, drinking,or smoking and when leaving work. Ensure good ventilation of the workstation. Wearpersonal protective equipment. Wear safety glasses, avoid creating dust and breathing of dust.
Incompatible materials	Direct Sunlight
Storage conditions	Keep in Dry place, Avoid Humidity.
Storage premises	Ensure good ventilation of work situation

Section 8: Exposure controls/personal protection

8.1 Exposure Controls:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above. Not usually required in Well Ventilated Areas

8.2 Precautionary measures:

Appropriate engineering controls:	Provide local exhaust or general room ventilation.
Personal protective equipment:	Avoid all unnecessary exposure
Protection of respiratory tract	Not needed under normal circumstances. If needed while handling large amounts of Powder, & in case of inadequate ventilation - Use properly fitted Dust Mask or Respirator.
Protection for Hands	Gloves may be worn
Protection for eyes	Not needed under normal circumstances. If Excessive dust exists wear goggles. Chemical goggles or safety glasses
Protection for skin	Gloves may be worn


Personal protective equipment symbol(s):

Environmental exposure controls: Do not exceed the occupational exposure limits (OEL).

Other information: Do not eat, drink, or smoke during use.

Section 9: Physical and chemical properties

8.1 Information on basic physical and chemical properties

Physical state: **Appearance:**	Solid Fine Brown Powder	**Colour:** **Odour :**	Brown (Light to Dark) Characteristics
Odour Threshold	No Data Available	**Relative evaporation rate (butyl acetate=1)**	No Data Available
pH	5-7	**Solubility**	No Data Available
Melting/Freezing Point	No Data Available	**Relative density**	No Data Available
Boiling Point	No Data Available	**Solubility**	Insoluble in Water

Flash Point	No Data Available	**Log Power**	No Data Available
Flammability limits	Non-flammable	**Viscosity, dynamic**	No Data Available
Density	No data available	**Viscosity, kinematic**	No Data Available
Vapour Pressure (mm Hg @20°C (60°F)	No data available	**Oxidising properties**	No Data Available
Relative vapour density at 20 °C	No data available	**Explosive properties / Explosive Limits**	No data available No data available
Weight per Gallon	No data available	**Partition Coefficient (n-octanol/water):**	No data available
Auto-Ignition Temperature:	No data available	**Decomposition Temperature**	No data available

8.2 Other information: No other information available

Section 10: Stability and Reactivity

Reactivity	This product is not reactive.
chemical stability	Stable under normal conditions
Possibility of hazardous reactions	Not established
Conditions to avoid	Excess – Moisture
Incompatible materials	No additional information available
Hazardous decomposition products	When heated to decomposition, produces fumes of carbon monoxide or smoke.

Section 11: Toxicological Information

Suspected Cancer Agent: Ingredients within this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies

Toxicity: Non-Toxic Product

Irritation and Burning: May cause eye irritation with direct contact.

Acute Toxicity (Dermal) Skin: Not Established

Acute Toxicity Oral: Contains Saponins (Thus may cause some intolerance)

Inhalation: KEEP IN SAFE

Allergy Causing Properties: NOT KNOW

Section 12: Ecological Information

16.1 Toxicity

Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Not classified

Reetha Powder (223748-41-2)

EC50other aquatic organisms 1	>1000 mg/l
NOEC chronic fish	> 1000 mg/l LC 50,96 Hrs
NOEC chronic crustea	> 1000 mg/l EC 50, 48 Hrs
NOEC chronic algae	> 1000 mg/l IC72 Hrs 12.2
Persistence and degradability	% Biodegradation. Not established
Bio accumulative potential	Not established
mobility in soil	No additional information available
Results of PBT and vPvB assessment	No additional information available
Other adverse effects	No additional information available

Section 13: Disposal Considerations

Waste treatment methods Product/Packaging disposal recommendations:	Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials:	Avoid release to the environment.

Dispose of according to Local, State and Federal Regulations

Section 14: Transport Information

In accordance with Road/Air/Water Transportation

14.1 UN Number	**By Road**	**By Air**	**By Water**
14.2 UN Proper shipping name	Not applicable	Not applicable	Not applicable
14.3 Transport Hazard Class(es)	Not applicable	Not applicable	Not applicable

14.4 Packing group	Not applicable	Not applicable	Not applicable
14.5 Environmental hazards	Not applicable	Not applicable	Not applicable
No supplementary information available	Not applicable	Not applicable	Not applicable

Section 15: Regulatory Information

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

15.1.1 EU-Regulations

No REACH Annex XVII restrictions
This Product is not on the REACH Candidate List
This Product is not on the REACH Annex XIV List
This Product is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.
This Product is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC15.1.2. National regulations No additional information available

15.3 National regulations

No additional information available

15.3 Chemical safety assessment

No chemical safety assessment has been carried out.

Name of Materials:- Rosemary Extract

Section 1: Identification of the Product

1.1 Globally Harmonized System (GHS) product identifier

Product name: Rosemary Antioxidant
Organic Latin name of botanical source: Salvia rosmarinus
INCI Name: Rosmarinus Officinalis (Rosemary) Leaf Extract, Helianthus Annuus (Sunflower) Seed Oil

1.2 Other means of identification

Item number/size: 1105 – Various sizes not to exceed 33.81 Fluid Ounces or 1 Liter.

1.3 Recommended use of the chemical and restrictions on use:

Aromatherapy, natural perfumery, as recommended. Do not ingest.

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

Skin Sensitization, Category 1

2.2 GHS label elements, including precautionary statements

Signal word	Hazardous Statement	Precautionary	Hazard Pictograms

Warning	H317 – May cause an allergic reaction	P102 - Keep out of the reach of children. P261 –Avoid breathing dust/fume/gas/mist/vapours/spray. P272 –Contaminated work clothing should not be allowed out of the workplace. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P302 + P352 – IF ON SKIN: Wash with plenty of water/soap. P333 + P313 – If skin irritation or rash occurs: Get medical advice/attention. P362 + P364 –Take off contaminated clothing and wash before reuse. P501 – Dispose of contents/container to an approved waste disposal plant.	

Section 3: Composition / information Ingredients

3.1 Composition

Hazardous Ingredients	CAS	EC No./ REACH Registration No.	% w/w	Hazard statement(s)	Hazard Pictogram(s)
Rosemary Extract powder	84604-14-8	-	30-70	Skin Irrit. 2 H315 Eye Irrit. 2 H319	GHS07
Maltodextrin	9050-36-6	232-940-4	30-70	Not classified	None

Section 4: First Aid Measures

4.1 Description of necessary first-aid measures (of Substance)

Eye contact:
Check for and remove any contact lenses. Flush with water for 15 minutes. If symptoms persist get medical attention.

Skin Contact:
No harmful effect with normal skin. If skin irritation does occur, wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.

Inhalation:
Not likely to occur under normal conditions of use. If symptoms occur, move to fresh air and obtain medical advice.

Ingestion:
Not an expected route of exposure. In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with milk or water and consult a doctor. Keep the exposed person at rest. Do NOT force vomiting unless directed to do so by medical personnel. Seek immediate medical attention and show the Substance's label to medical personnel.

4.2 Most important symptoms and effects, both acute and delayed (of Substance)

Eye contact:
May cause eye irritation and corneal damage if not immediately rinsed out.

Skin Contact:
Repeated contact may cause allergic dermatitis.

Inhalation:
Provide fresh air if needed.

Ingestion:
Not an expected route of exposure.

4.3 Indication of any immediate medical attention and special treatment needed (of Substance)

None known

Section 5: Fire-Fighting Measures

5.1 Flash point
>100 ˚C

5.2 Extinguishing media
Suitable extinguishing media: sprayed water or water mist, alcohol-resistant foam, multipurpose ABC powder, BC powder, carbon dioxide (CO2) Unsuitable extinguishing media: water jet (straight stream).

5.3 Specific hazards arising from the chemical
None known.

5.4 Special protective actions for firefighters
Use self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Stop leak if you can do so without risk. Consult safety measures listed under Sections 7 and 8.

For fire-fighters:

Fire-fighters will be equipped with suitable personal protective equipment (See Section 8). High temperature may increase the pressure inside the container—cool the container by sprinkling water. Avoid breathing emitted vapors.

6.2 Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, or diatomaceous earth in drums for waste disposal. Avoid allowing product to reach sewage system or any waterways. Inform respective authorities in case of seepage into sewage system or waterways.

6.3 Methods and material for containment and cleaning up

Absorb spill with non-combustible matter (such as detergent--do not use solvents) and transfer to containers.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid unintentional contact with skin surfaces. Wear suitable protective clothing. Avoid inhalation. Ensure good ventilation or exhaust in workplace. Do not allow contact with eyes. Always wash hands after handling. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in closed glass containers, away from heat, light and other sources of ignition. Store in cool area.

Section 8: Exposure Control/Personal Protection

8.1 Control parameters

OSHA TWA: None established
OSHA STEL: None established
ACGIH TWA: None established
ACGIH STEL: None established
NOHSC TWA: None established
NOHSC STEL: None established

8.2 Appropriate engineering controls
General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.

8.3 Individual protection measures
Personal protective equipment:
Use personal protective equipment that is clean and has been properly maintained. Store personal protective equipment in a clean place away from the work area. Never eat, drink, or smoke during use. Remove and wash contaminated clothing before re-using.
Eye/face protection:
Avoid contact with eyes. Use eye protectors (safety goggles in accordance with standard EN166) designed to protect against liquid splashes.
Hand protection:
Wear suitable protective gloves (resistant to chemical agents in accordance with standard EN374) in the event of prolonged or repeated skin contact.
Type of gloves recommended: Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR)) or PVA (Polyvinyl alcohol).
Body protection: Work clothing worn by personnel shall be laundered regularly. After contact with the product, all parts of the body that have been soiled must be washed.

Section 9: Physical chemical Properties

Physical state: Viscous liquid
Color: Dark brown
Odor: Mild scent of rosemary
Miscibility in water: Insoluble
Miscibility in alcohol: Insoluble
Miscibility in essential oil: Soluble
Liposolubility: Liposoluble
pH: Not applicable
Boiling point/boiling range: Not specified
Flash Point: >100 °C
Vapor pressure: Not specified
Evaporation rate: Not specified
Density @ 20˚C: < 1,00 g/cm3 pycnometer
Water solubility: Insoluble
Self-ignition temperature: Not specified
Decomposition point/decomposition range: Not specified
Refractive index @ 20˚C: Not specified
Partition coefficient: Not specified
Specific gravity @ 20 ˚C: Not specified

Section 10: Stability and Reactivity

10.1 Reactivity
Not reactive.

10.2 Chemical stability
This substance is stable under the recommended handling and storage conditions in Section 7.

10.3 Possibility of hazardous reactions
When exposed to high temperatures, the substance may release hazardous decomposition products, such as carbon monoxide, carbon dioxide, fumes, and nitrogen oxide.

10.4. Conditions to avoid
None known.

10.5 Incompatible materials
Alkali metals, ammonia, oxidizing agents, peroxides strong inorganic acids.

10.6 Hazardous decomposition products
The thermal decomposition may release/form carbon monoxide (CO) and carbon dioxide (CO2)

Section 11: Toxicological Information

11.1 Substance
Acute toxicity:
No data available.
Skin corrosion/irritation:
May be irritating to skin.
Serious eye damage/irritation:
May be irritating to eyes. Prompt rinsing and removal of the substance will avoid damage.
Respiratory sensitization:
Breathing high concentrations of vapor may cause anesthetic effects.
Germ cell mutagenicity:
Not specified
Carcinogenicity:
IARH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity:
Not specified

STOT-single exposure:
Not specified

STOT-related exposure:
Not specified

Aspiration hazard:
Not specified

11.2 Information on the likely routes of exposure
Skin/scalp contact.

11.3 Symptoms related to the physical, chemical, and toxicological characteristics
None known. Irritation of the eye if exposed. Redness of the skin if irritated.

11.4 Delayed and immediate effects and also chronic effects from short-term and long-term exposure
Exposure to vapors from this solvent in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver, and central nervous system. Repeated or prolonged contact with the substance may cause removal of natural oil from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible damage.

11.6 Interactive effects
Not specified

11.7 Where specific chemical data are not available
Not specified

11.8 Substances
Not specified

11.9 Substances verses ingredient information
Not specified

11.10 Other Information
None

Section 12: Ecological Information

12.1 Info summery of Ecological information
Balance of data on substance as a whole, not determined.

12.2 Eco toxicological properties of specific substances
See each category below for specific substances

12.3 Toxicity
Acute fish toxicity:
LC50 / 96 HOUR – No data available
Toxicity to aquatic plants – No data available
Toxicity to microorganisms – No data available
Toxicity threshold – No data available

12.4 Persistence and degradability
Biodegradation is expected

12.5 Bio-accumulative potential
Bioaccumulation is unlikely

12.6 Mobility in soil
Unknown

12.7 Other adverse effect
Avoid exposure to marine environments and waterways

Section 13: Disposal Considerations

13.1 Waste treatment methods
Do not pour into drains or waterways. Observe all federal, state, and local environmental regulations. Member State-specific and Communityspecific provisions must be considered. Considering the relevant known environmental and human health hazards of the materials, review and implement appropriate technical and procedural wastewater and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental release. This may include destructive techniques for waste and wastewater. In extreme situations, contact a licensed professional waste disposal service to dispose of this material. Waste: Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC. Do not pour into drains or waterways.

Waste
management is carried out without endangering human health, without harming the environment, and in particular without risk to water, air, soil, plants, or animals. Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Soiled packaging:
Empty all containers completely. Keep label(s) on every container. Give to a certified disposal contractor.

Section 14: Transport Information

14.1 UN Number
N/A

14.2 UN Proper shipping name
Not regulated

14.3 Transportation hazard classes
Road (U.S. DOT): Not regulated
Air (IATA): Not regulated
Sea (IMDG): Not regulated

14.4 Packing group, if applicable
N/A

14.5 Environmental hazards
Substance not determined. Avoid exposure to waterways.

14.6 Special precautions for user
Not specified

14.7 Transport in bulk according to Annex II of MARPOL 73/78° and IBC Code
Not specified

14.8 Additional transport information
Not specified

Section 15: Regulatory Information

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

Country	Notification
Canada	Not regulated
EU	See EU Allergens in Section 3
Hong Kong	Not regulated
Singapore	Not regulated
USA	Not regulated by Federal or State Regulations **California Prop. 65 Components** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, and/or reproductive harm. See Section 3 for details.

Section 16: Other Information

Disclaimer:

The information in this Safety Data Sheet (SDS) is believed to be accurate as of the date issued.

Name of Materials:- Papaya Extract

Section 1: Identification of the substance

1.1 Product Identifier:

Product Code:

Product Name: Papain, Carica papaya

REACH Registration Number : A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline

CAS-No. : 9001-73-4

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

Identified uses Reagent for development and research

Section 2: Hazard Identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319
Respiratory sensitisation, Category 1, H334

Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word

Danger

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation.

Precautionary statements

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Reduced labelling (≤125 ml)

Hazard pictograms

Signal word

Danger

Hazard statements

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Contains: Papain

Index-No. 647-007-00-0

2.3 Other hazards

None known.

Section 3: Composition/information on ingredients

Chemical nature Thiol enzyme of vegetable origin.

3.1 Substance

Index-No. 647-007-00-0

EC-No. 232-627-2

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No.	Registration number	Classification
9001-73-4		Skin irritation, Category 2, H315 Eye irritation, Category 2, H319 Respiratory sensitisation, Category 1, H334 Specific target organ toxicity- single exposure, category 3, H335

3.2 Mixture

Not applicable

Section 4: First aid measures

4.1 Description of first aid measures

General advice
First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects, Allergic reactions, Cough, Shortness of breath

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water, Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given

5.2 Special hazards arising from the substance or mixture

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of: nitrogen oxides

5.3 Advice for firefighters

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system. Suppress (knock down) gases/vapours/mists with a water spray jet.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).

Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Advice on safe handling
Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Hygiene measures Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry. Keep locked up or in an area accessible only to qualified or authorised persons. Protected from light.

Recommended storage temperature see product label.

7.3 Specific and use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

Full contact:

Glove material: Nitrile rubber

Glove thickness: 0,11 mm

Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber
Glove thickness: 0,11 mm
Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).
The breakthrough times stated above were determined by KCL in

laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves.

Other protective equipment

Protective clothing

Respiratory protection

required when dusts are generated.
Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances.
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

Section 9: Physical and chemical properties

9.1 Information on basis physical and chemical properties

Form	Solid
Colour	Yellow
Odour	characteristic
Odour Threshold	No information available.
pH	4 - 7 at 1 g/l 25 °C
Melting point	No information available.
Boiling point	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	at 20 °C soluble
Oxidizing properties	None

9.2 Other data

Bulk density ca.800 kg/m^3

Section 10: Stability and reactivity

10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability

sensitive to moisture
Sensitivity to light
Sensitive to air.
hygroscopic

10.3 Possibility of hazardous reactions

Violent reactions possible with:
Strong oxidizing agents

10.4 Conditions to avoid

no information available

10.5 Incompatible materials

No information available

10.6 Hazardous decomposition products

No information available

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity
LD50 Rat: > 4.000 mg/kg

(RTECS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: Cough, Shortness of breath, Possible damages:, mucosal irritations

Acute dermal toxicity
This information is not available.

Skin irritation
Causes skin irritation.

Eye irritation
Causes serious eye irritation.

Sensitisation
Human experience
Result: positive

(Lit.)

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity
Genotoxicity in vitro
Result: negative

(Lit.)

Carcinogenicity
This information is not available.

Reproductive toxicity
This information is not available.

Teratogenicity
This information is not available.

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

12.2 Further information

Other dangerous properties cannot be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Section 12: Ecological information

12.1 Toxicity

No information available.

12.2 Persistence and degradability

No information available.

12.3 Bio-accumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information
Discharge into the environment must be avoided.

Section 13: Disposal considerations

Waste treatment methods
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Section 14: Transport information

Land transport (ADR/RID)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

Section 15: Regulatory information

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

EU regulations

Major Accidental Hazard	SEVESO III
Legislation	Not applicable
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC Not regulated

Substances of very high concern (SVHC)

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of ≥ 0.1 % (w/w).

National legislation

Storage class 10-13

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

Section 16: Other information

Full text of H-statements referred to under sections 2 and 3.

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms

Signal word

Danger

Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary statements

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Name of Materials:- Sea Salt

Section 1: Chemical Product Identification

Product/Chemical Name: Sea Salt

INCI Name: Maris Sal

Section 2: Composition/ Information on Hazardous Ingredients

Chemical Identifications: Common salt; Halite; Rock salt; Saline; Salt; Sea salt

CAS NO: 7647-14-5

Composition: Sodium chloride with trace minerals.

Section 3: Hazards Identification

Eye Contact: May cause irritation

Skin Contact: May cause irritation

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion of large amounts may cause nausea and vomiting, rigidity or convulsions. Continued exposure can produce coma, dehydration, and internal organ congestion.

Inhalation: May cause respiratory tract irritation.

Section 4: First Aid Measures

Eye Contact: Irrigate with warm water
Skin Contact: Wash off with soap and water.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid. Wash mouth out with water.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Section 5: Fire-Fighting Measures

Extinguishing Media Recommended: Water mist, carbon dioxide, foam or dry powder. Do not use direct water jet.
Special Measures: Fire fighters should wear protective clothing and approved respirator.
Hazards: Avoid inhalation of fumes.

Section 6: Accidental Release Measures

Environment Precautions: Prevent from entering drains, surface and ground water.
Methods For Cleaning Up: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing caution. Avoid generating dusty conditions. Provide ventilation.

Section 7: Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Do not ingest or inhale.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

Section 8: Exposure Controls/ Personal Protection

Precautions: Goggles and gloves should be worn if there is a risk of splashing.

Section 9: Physical and Chemical Properties

Odour: Free from rancid odours.

Appearance: White to grey grains

Section 10: Stability and Reactivity

Materials to avoid: Reacts with most non-noble metals such as iron or steel, building materials (such as cement), bromine, or trifluoride. Potentially explosive reaction with dichloromaleic anhydride + urea. Electrolysis of mixtures with nitrogen compounds may form explosive nitrogen trichloride.

Stability: Stable

Section 11: Toxicological Information

Epidemiology: No information reported.
Teratogenicity: An experimental teratogen.
Reproductive Effects: Human reproductive effects by intraplacental route: terminates pregnancy. Experimental reproductive effects.
Neurotoxicity: No information reported.
Mutagenicity: See actual entry in RTECS for complete information.
Other Studies: No information reported.

LD/LC50 Value: not tested on animals.

Section 12: Ecological Information

Not harmful to the environment.

Section 13: Disposal Considerations

Dispose of according to local and national regulations.

Section 14: Transport Regulations

No restrictions on transportation by land, sea or air.

Section 15: Regulatory Information

Not classified as hazardous.

Section 16: Other Information

Disclaimer: The information in this leaflet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

Name of Materials:- Neem Extract

Section 1: Product Name Identification

Product Name: Neem Oil

Section 2: Composition and information on ingredients

CAS Number: 84696-25-3

Composition: Neem 100%

INCI Name: Azadirachta Indica Seed Extract

Section 3: Hazards Identification

This product is not hazardous.

Section 4: First Aid Procedures

Skin Contact: If a reaction occurs, rinse irritated area with soap and water.
Eye Contact: Rinse with sterile water.
Inhalation: Remove from exposure site to fresh air.
Ingestion: No Important measures required. Seek medical advice if necessary.

Section 5: Fire Fighting Measures

Suitable Extinguishers: Carbon dioxide, Foams and Inert powder
Unsuitable Extinguishers: Water
Fire Hazard: At high temperatures, acrolein may be formed.

Section 6: Accidental Release Measures

Personal Precautions: The usual precautions for handling chemicals should be observed.
Safety Clothing: N/A
Environmental Precautions: Contain the leak with earth or sand. Prevent from entering drains and sewers; if this cannot be done advise the local authority.
Clean Up Procedure: Absorb spillage onto sand or earth. Transfer to a suitable container for disposal.
Prohibited Materials: Oxidising substances.

Section 7: Handling and storage

Handling: Avoid spillage and eye contact.
Ventilation: N/A
Storage Conditions: Store at ambient temperature in a dark container. Store away from oxidizing substances e.g. Bleach. Store in sealed containers.
Fire Protection: Keep away from ignition sources and naked flames. Take precautions to avoid static discharges in working area.
Container materials: Metal r Plastic for bulk storage and glass or plastic for small quantities.

Section 8: Exposure Control/ Personal Protection

Precautions: Wash all items that come into contact with the product before and after each use.
Engineering Control: None.

Control Limits: Vary your carrier products to reduce the chance of acquiring a sensitivity reaction.

Personal Protection
Respiratory: Not required.
Hand Protection: Wear Gloves If applicable Eye Protection: Wear goggles if applicable
Skin Protection: Wear suitable protection clothing if applicable
Other: Evaluate the need of protection based on the application of the product.

Section 9: Physical & Chemical Properties

Physical State: Paste to Oil
Odour: Bitter to light citrus
Colour: Dark Green to Brown
pH Level: Neutral
Boiling Point: >100°C
Flash Point: >400°C.
Auto flammability: N/A
Explosive properties: N/A
Oxidizing Properties: N/A
Melting Point: N/A
Specific Gravity: 0.958 to 0.964°C
Vapour Pressure mm: Not reported.
Evaporation rate: N/A
Solubility in water: Insoluble
Solubility in solvent: Miscible

Section 10: Stability and Reactivity

The product is stable under normal storage conditions.

Conditions to avoid:	High Temperatures
Materials to avoid:	Strong oxidizing agents
Polymerisation Hazard:	Will not occur

Section 11: Toxicological information

General: Product is non-toxic
Acute LD50: No Data Available

Carcinogenicity: Not carcinogenic
Mutagenicity: No Data Available

Section 12: Ecological information

Biodegradability: Biodegradable
Precautions: Prevent surface contamination of soil, ground and surface water.

Section 13: Disposal considerations

Recover the product where possible or bury in authorised landfill sites according to local authority regulations. Avoid disposing to drainage systems and into the environment. Seek expert advice.

Section 14: Transport information

Road: n/a
Rail: n/a
Air: n/a
sea: n/a

Section 15: Regulatory information

Labels for Conveyance: n/a
Labels for Supply: n/a

Section 16: Other Information

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product.

Name of Material: Aloe Vera Extract

Section 1: Identification of the substance/ Preparation

Product identifier

Product Name: Aloe Vera Extract 200:1

Section 2: Ingredients/Identity information

Components	% in Product	CAS Number	Formula	EINECS Number
Aloe Vera Extract	100	N/A	N/A	N/A

Section 3: Possible Hazards

Physical & chemical Hazards None

Environmental Hazards None

Adverse Human Health Effects None

Specific Hazards	None

Section 4: Emergency and First Aid Procedures

Inhalation	**The product is not dangerous by inhalation**
Skin Contact	Not dangerous by skin contact
Eye Contact	Not dangerous. Irrigate with water
Ingestion	Not dangerous

Section 5: Fire and Hazard Data

Suitable Fire Media	Non-flammable
Non Suitable Media	None
Special Protective Equipment	None
Additional Information	None

Section 6: Accidental Release Measures

Not harmful. No special measures required

Section 7: Storage

Recommendations	Avoid high temperature humidity and long storage time, keep container closed
Storage	Store in a dry, cool well-ventilated places away from the sun, heat.

Section 8: Control Methods/ Personal Protection

Respirator Protection	Special measures are not required
Hand Protection	Special measures are not required
Eye Protection	Special measures are not required

Skin Protection	Special measures are not required
General Hygiene	Special measures are not required
Protective Measures	Special measures are not required

Section 9: Physical and Chemical Properties

Physical State	Powder
Colour	White to off white
Odour & Taste	Characteristic
Explosive Property	None

Section 10: Stability and Reactivity

Chemical Stability Stable product at normal conditions of pressure and temperature. No dangerous reactions are expected.

Conditions to Avoid	High temperatures, Humidity
Materials to Avoid	Iron, Copper
Hazardous Decomposition Products	None

Section 10: Toxicological Information

Not considered toxic

Section 11: Ecological Information

Natural Product

Section 12: Disposal Considerations

Normal disposal

Section 13: Transport Information

Transport Classification Not classified as dangerous for any mode of UK or International transport.

Section 14: Regulatory Information

European Regulation This product is not classified according to the EU regulations

Reviews, Standards and Regulations Health & Safety at work act 1974. COSHH Regulations (1994). EH40 Occupational exposure limits.

US Federal Regulations Not known

Name of Material: Liquorice Extract

Section 1: Identification of the substance

Product Name: Liquorice Extract

Section 2: Hazards Identification

Classification of the substance or mixture:

Not classified for physical or health hazards according to GHS
Hazards Not otherwise classified- Combustible Dust

Hazard statements:
Precautionary statements:

If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use

Other Non-GHS Classification:

WHMIS
NFPA/HMIS

NFPA SCALE (0-4)

HMIS RATINGS (0-4)

Section 3: Composition/information on ingredients

Ingredients:		
CAS N/A	Liquorice Extract	100%
		Percentages are by weight

Section 4: First aid measures

Description of first aid measures

After inhalation: Loosen clothing as necessary and position individual in a comfortable position. Move exposedto fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact: Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medicaladvice if discomfort or irritation persists.

After eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing.Seek medical attention if irritation persists or if concerned.

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation,discomfort, or vomiting persists. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:
Irritation, Headache,Nausea, Shortness of breath; Not determined

Indication of any immediate medical attention and special treatment needed:
If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

Section 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents:

Special hazards arising from the substance or mixture:
Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment: Wear protective eyeware, gloves, and clothing. Refer to Section 8.Use NIOSH- approved respiratory protection/breathing apparatus.

Additional information (precautions): Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eye ware, gloves, and clothing. Refer to Section 8.Sweep up or use vacuum with HEPA filter andplace in appropriate container for disposal. For disposal, refer to Section 13.Prevent generation of dust.

Section 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8.Do not eat, drink, smoke, or use personal products when handling chemical substances.

Conditions for safe storage, including any incompatibilities:

Keep container tightly sealed. Store away from incompatible materials. Store with similar hazards.

Section 8: Exposure controls/ personal protection

Control Parameters: None, Liquorice Extract, This material has no known Exposure Limits.

Appropriate Engineering controls: Provide adequate ventilation. Ensure eye wash and safety showers are available.

Respiratory protection: Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as abackup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin: Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique withouttouching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection: Safety glasses or goggles are appropriate eye protection.

General hygienic measures: Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing washcontaminated clothing.

Section 9: Physical and chemical properties

Appearance (physical state,color):	Brown powder	**Explosion limit lower**:**Explosion limit upper**:	Not Determined Not Determined

Odor:	Characteristic licoriceodor	**Vapor pressure**:	Not Determined
Odor threshold:	Not Determined	**Vapor density**:	Not Determined
pH-value:	Not Determined	**Relative density**:	Not Determined
Melting/Freezing point:	Not Determined	**Solubilities**:	Soluble in hot water.
Boiling point/Boiling range:	Not Determined	**Partition coefficient (n-octanol/water)**:	Not Determined
Flash point (closedcup):	Not Determined	**Auto/Self-ignition temperature**:	Not Determined
Evaporation rate:	Not Determined	**Decomposition temperature**:	Not Determined
Flammability (solid, gaseous):	Not Determined	**Viscosity**:	a. Kinematic: NotDetermined b. Dynamic: Not Determined

Section 10: Stability and reactivity

Reactivity: Nonreactive under normal conditions.

Chemical stability: Stable under normal conditions.

Possible hazardous reactions: None under normal processing.

Conditions to avoid: Incompatible materials high temperatures.

Incompatible materials: Strong oxidizes.

Hazardous decomposition products: Oxides of carbon.

Section 11: Toxicological information

Acute Toxicity: No additional information.	
Chronic Toxicity: No additional information.	
Corrosion Irritation: No additional information.	
Sensitization:	No additional information.
Single Target Organ (STOT):	No additional information.

Numerical Measures:	No additional information.
Carcinogenicity:	Licorice extract: Not listed as a carcinogen (ACGIH, IARC, NTP)
Mutagenicity:	No additional information.
Reproductive Toxicity:	No additional information.

Section 12: Ecological information

Ecotoxicity Persistence and degradability: Not Determined

Bioaccumulative potential: Not Determined

Mobility in soil: Not Determined

Other adverse effects: Not Determined

Section 13: Disposal considerations

Waste disposal recommendations:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

Section 14: Transport information

UN-Number
Not Regulated

UN proper shipping name
Not Regulated

Transport hazard class(es)

Packing group: Not Regulated

Section 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients is listed

RCRA (hazardous waste code):

None of the ingredients is listed

TSCA (Toxic Substances Control Act):

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):None of the ingredients is listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females:None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:None of the ingredients is listed

Chemicals known to cause developmental toxicity:None of the ingredients is listed

Section 16: Other information

GHS Full Text Phrases:

Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
PNEC: Predicted No-Effect Concentration (REACH)
CFR: Code of Federal Regulations (USA)
SARA: Superfund Amendments and Reauthorization Act (USA)RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)
NPRI: National Pollutant Release Inventory (Canada)
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)

Name of Material: Tomar Extract

Section 1: Chemical Product identification

Product Name: Tomar Seed Oil

CAS#: 91770-90-0

Botanical Name: Zanthozylum armathum

Chemical Formula: Not available

Section 2: Composition and information on Ingredients

Composition: Tomar Seed Oil

Percentage by Weight: 100%

Toxicological Data on Ingredients:

Not available

Section 3: Possible Hazard

Potential Acute Health Effects: Non hazardous in case of skin contact, irritant in case of eye contact (irritant) of ingestion, of inhalation.

Potential Chronic Health Effects: Not available

Carcinogenic Effects: Not available.

Section 4: Hazard Identification

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if needed.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention develops. Cold water may be used.

Inhalation: If inhaled, remove to fresh air. Get medical attention if any symptoms appear.

Ingestion: Do Not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Section 5: Fire and Explosion Data

Flash Points: Closed Cup: 78°C

Fire Hazards: Flammable in presence of open flames and spaks, of heat. Non-flammable in presence of shocks.

Fire: Use DRY chemical powder/ Sand.

Large Fire: Use foam, water spray or Fog.

Flammability of the product: Not flammable

Section 6: Accidental Release Measures

Spill: Dilute with washing soap & water and regular mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Section 7: Handling and storage

Precautions: Keep away from Heat & from source of ignition. Ground all equipment containing material. Do not ingest. Keep away from eyes.

Storage: Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Away from heat & spark keep tightly closed container.

Section 8: Exposure controls/Personal Protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat, Vapor respirator. Be sure to use an approved/ certified respirator or equivalent gloves.

Section 9: Physical and chemical properties

Physical state and appearance: Light yellow liquid

Odor: Spicy aroma with a sweet floral undertone.

Taste: Sweet

Boling Point: N/A

Melting Point: N/A

Section 10: Stability and Reactivity Data

Stability: The product is stable

Corrosivity: Non-corrosive in presence of glass.

Special remarks on reactivity: Not reactive

Special remarks on corrosivity: Not available

Polymerisation: No

Section 11: Toxicological information

Routes of Entry: Ingestion

Toxicity to Animals: LD50: Not available. LC50: Not available

Toxic effects on Humans: Hazardous in case of ingestion. Non hazardous in case of skin contact (irritant), of inhalation.

Section 12: Ecological information

Ecotoxicity: Not available

BOD5 and COD: Not available

Products of Biodegradation: Product is Bio-Degradable

Toxicity of the products of Biodegradation: The products of degradation are non-toxic.

Section 13: Disposal considerations

Waste Disposal: Keep away from drains, surface and ground water.

Dispose according to recognised method of chemical waste disposal.

Section 14: Transport information

DOT Classification: Not a DOT Controlled material United States (USA), As per IATA regulations.

Identification: Not applicable.

Special Provisions for transport: Not applicable.

The Material Safety Data Sheet (MSDS) should accompany all shipments for reference in the event of spillage or accidental release. Transportation and shipping of this

product is not restricted. It has no known, significant hazards requiring special packaging or labelling for air, maritime, or ground transport purposes.

Section 15: Other Regulatory information

WHMIS (Canada): N/A,

HMIS (USA): Health:1 I Flammability:1 I Reactivity: 0 **SARA 302/SARA 313:** None

Name of Material: Pomegranate Extract

Section 1: Product Name Identification

Product Name: Pomegranate Extract

Product Use: Personal Care Formulations

Section 2: Composition/Ingredient Information

Chemical Identity: Certified Organic Pomegranate Extract

Hazardous Components: All materials used in this product are non-toxic and conform to the Toxic Substances Control Act and may be found in the

FDA's Generally Regarded as Safe list. No materials used are listed by California's Proposition 65 as carcinogens or reproductive toxicants. The specific chemical identities of the ingredients in this mixture are considered to be trade secrets, and are withheld in accordance with the provisions of 1910.1200 of Title 29 of the Federal Code of Regulations.

Section 3: Hazard Identification

Routes of Entry:
- Skin
- Ingestion
- Inhalation

Eye Contact: Undiluted liquid maybe irritating to eyes

Skin Contact: Undiluted liquid may be irritating to skin. Prolonged or repeated skin contact may cause allergic dermatitis.

Section 4: First Aid Measures

Eyes: Flush with plenty of water or eye wash solution for 15 minutes. Get medical attention if irritation persists.

Skin: Wash with soap and water - get medical attention if irritation occurs.

Ingestion: Do not induce vomiting. Administer milk or water to dilute. Seek medical attention.

Inhalation: Remove to fresh air.

Section 5: Fire Fighting Measures

Flash Point (Method Used): > 141 ˚F (TOC)

Extinguishing Media: • Dry Chemical • Carbon Dioxide • Foam

Special Firefighting Procedures: Note: Do not use water except to cool containers.

- Use self contained breathing equipment for fighting interior fires.

Unusual Fire& Explosion Hazards: Not established

Section 6: Accidental Release Measures (STEPS FOR SPILLS)

Personal Protection: OSHA approved chemical resistant gloves and safety glasses should be worn. Chemical resistant clothing may also be worn as an added precaution. If desired, use a NIOSH approved respirator.

Environmental Protection: Notify authorities if large amounts of product enters sewer.

Methods for Cleaning Up: • Eliminate sources of ignition and ventilate area.
• Absorb onto an inert, absorbent substrate and sweep up. Wash with soap and water.

Section 7: Handling and Storage

Handling

Safe Handling: • Wear safety glasses.
• Keep away from oxidizing agents, excessive heat and sources of ignition.

Storage

Requirements for Storage Areas and Containers: Store in a cool, dry location, in a sealed container in a well ventilated area.

Section 8 : Exposure Control/ Personal Protection

Engineering Controls: Have eye wash stations available near workstations
Personal Protection

Eye: OSHA approved safety glasses should be worn.

Skin/Body: Chemical resistant clothing and gloves may be worn.

Respiratory: Not needed under normal conditions of use. Use adequate ventilation or NIOSH-approved respiratory devices if required for application.

Ventilation: Handle in well ventilated areas.

Other: Evaluate need based on application. Slip proof shoes may be worn where spills may occur.

Work/Hygiene Practice: Normal work and hygiene practices for handling chemicals

Section 9: Physical and Chemical Properties

Physical State: Liquid

Color: Clear to hazy

Odor: Characteristic

Specific Gravity (H2O = 1): 0.981

Flash Point: > 141˚F

Boiling Point: ~100˚C

Evaporation Rate: N/A

Solubility in water: Complete

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Extreme heat

Incompatibility (Materials to Avoid): None

Hazardous Decomposition or By-products: None

Hazardous Polymerization: Will Not Occur

Section 11: Toxicological Information

Signs and Symptoms of Exposure: Irritation of skin or eyes.

Irritancy: Skin: May be an irritant
Eyes: May be an irritant

Carcinogenicity: NTP: No IARC: No OSHA Regulated: No

Section 12: Ecological Information

Ecological Information: No ecological hazards are associated with this product.

Section 13: Disposal Considerations

Waste Disposal Methods: Do not put into sewer lines. Dispose of according to local, state and federal regulations.

Section 14: Transport Information

DOT Classification: Not regulated

Section 15: Regulatory Information

No information

Material Name: Sodium Carboxymethyl Cellulose

Section 1: Identification

Product Name: Carboxymethyl cellulose, sodium salt

Synonyms: Sodium Carboxymethyl Cellulose; Aquaplast; Carboxymethyl Cellulose

Recommended Use Laboratory chemicals

Uses advised against Food, drug, pesticide or biocidal product use.

Section 2: Hazard(s) Identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements

None required

Hazards Not otherwise classified (HNOC)

None identified

Section 3: Composition/information on Ingredients

Component	CAS No	Weight %
Sodium carboxymethyl cellulose	**90004-32-4**	**100**

Section 4: First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

Inhalation Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

Ingestion Clean mouth with water. Get medical attention.

Most important symptoms and effects. No information available

Notes to Physician Treat symptomatically

Section 5: Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO2). Dry chemical. Chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available

Method- No information available

Autoignition Temperature 370 °C/ 698°F

Explosion Limits

Upper No data available
Lower No data available
Sensitivity to Mechanical impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO2).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	1	0	N/A

Section 6: Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal.

Section 7: Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

Section 8: Exposure controls/ personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures None under normal use conditions.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection No protective equipment is needed under normal use conditions.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and chemical properties

Physical State	Powder Solid
Appearance	Beige
Odor	Odorless
Odor Threshold	No information available
pH	6.5-8 1% aq.sol.
Melting Point/Range	300 °C / 572 °F
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid, gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	370 °C / 698 °F
Decomposition Temperature	No information available
Viscosity	Not applicable

Section 10: Stability and reactivity

Reactive Hazard None known, based on information available
Stability Stable.
Conditions to Avoid Incompatible products.
Incompatible Materials Strong oxidizing age
Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)
Hazardous Polymerization No information available
Hazardous Reactions None under normal processing.

Section 11: Toxicological Information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Mist LC50 Based on ATE data, the classification criteria are not met. ATE > 5 mg/l.

Component information

Component	LD50 Oral	LD50 Dermal	LC50 inhalation
Sodium carboxymethyl cellulose	LD50 = 27000 mg/kg (Rat)	Not listed	LC50 > 5800 mg/m3 (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available
Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Sodium carboxymethyl cellulose	9004-32-4	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available
Reproductive Effects No information available.
Developmental Effects No information available.
Teratogenicity No information available.
STOT - single exposure None known
STOT - repeated exposure None known
Aspiration hazard No information available
Symptoms / effects, both acute and delayed No information available
Endocrine Disruptor Information No information available
Other Adverse Effects The toxicological properties have not been fully investigated.

Section 12: Ecological Information

Ecotoxicity

Persistence and Degradability	Soluble in water Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation	No information available.
Mobility	Will likely be mobile in the environment due to its water solubility.

Section 13: Disposal considerations

Waste Disposal Methods	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Section 14: Transport information

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

Section 15: Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Sodium carboxymethyl cellulose	9004-32-4	x	ACTICVE	XU

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed

'-' - Not Listed
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Sodium carboxymethyl cellulose	9004-32-4	X	-	-	X	X	X	X	X	KE-05354

KECL – NIER number or KE number

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 chemicals. This product does not contain any Proposition 65

U.S. State Right-to-Know Regulations Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Sodium carboxymethyl cellulose	9004-32-4	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Sodium carboxymethyl cellulose	9004-32-4	Not applicable	Not applicable	Not applicable	Not applicable

Name of Product: Peppermint Oil

Section 1: Identification

Product identifier

Product Name Peppermint Oil, NF

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use No information available

Restrictions on use No information available

Section 2: Hazard(s) Identification

Classification

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1A
Flammable liquids	Category 4

Hazards not otherwise classified (HNOC)

Not applicable

Label element

Warning

Hazard statements

Causes serious eye irritation
May cause an allergic skin reaction
Combustible liquid

Appearance Clear and Oily **Physical state** Liquid **Odor** No information Available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace
Keep away from flames and hot surfaces. - No smoking
Wear protective gloves/eye protection/face protection

Precautionary Statements - Response
Specific treatment (on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of water and soap
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
In case of fire: Use CO2, dry chemical, or foam to extinguish

Precautionary Statements - Storage
Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Section 3: Composition/information on ingredients

Substance

Chemical Name	CAS No.	Weight-%	Trade secret
Peppermint Oil	8006-90-4	100	.

Section 4: First-aid Measures

Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Ingestion Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). water spray. Alcohol resistant foam.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous combustion products Carbon dioxide (CO2).

Explosion data

Sensitivity to mechanical impact none.

Sensitivity to static discharge yes.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: Accidental release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

Other information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Section 7: Handling and Storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Do not breathe vapor or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use with local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children.

Section 8: Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Appropriate engineering controls

Engineering controls, Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid
Appearance Clear and Oily
Color Colorless; or; light yellow
Odor No information available
Odor threshold No information available

Property	Values	Remarks• Method
pH	no data available	None known

Melting point /freezing point	no data available	None known
Boiling point / boiling	no data available	None known
Flash point	67 - 71 °C/ 152.6-159.8°F	CC (closed cup)
Evaporation rate	no data available	None known
Flammability (solid, gas)	no data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	0.896-0.908	None known
Water solubility	Insoluble in water	None known
Solubility(ies)	Soluble in Alcohol	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No data available
Oxidizing properties	No data available
Softening point	No data available
Molecular weight	No data available
VOC Content (%)	No data available
Liquid Density	No data available
Bulk density	No data available

Section 10: Stability and Reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Heat, flames and sparks.

Incompatible materials None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Section 11: Toxicological information

Information on likely routes of exposure

Product Information.

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

Skin contact May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause irritation. Prolonged contact may cause redness and irritation. Ingestion Specific test data for the substance or mixture is not available.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed

Symptoms related to the physical, chemical and toxicological characteristic

Symptoms Itching. Rashes. Hives. May cause redness and tearing of the eyes

Acute toxicity

Numerical measures of toxicity

Content information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Peppermint Oil 8006-90-4	= 2426 mg/kg (Rat)	-	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitization May cause sensitization by skin contact.

Germ cell mutagenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

Section 12: Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Persistence and degradability No information available.

Bioaccumulation Inherently biodegradable.

Other adverse effects No information available.

Section 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: Transport information

DOT not regulated
TDG not regulated
MEX not regulated
ICAO (air) not regulated
IATA not regulated
IMDG not regulated
RID not regulated
ADR not regulated
ADN not regulated

Section 15: Regulatory information

International Inventories

TSCA Complies
DSL/NDSL Complies
EINECS/ELINCS Does not Comply
ENCS This product complies with ENCS:
IECSC This product complies with China:
KECL Complies
PICCS Complies
AICS All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

Section 16: Other information

NFPA

Health hazards 2
Flammability 2
Instability 0
Physical and chemical properties -
HMIS Health hazards 2
Flammability 2
Physical hazards 0
Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL
STEL (Short Term Exposure Limit) Ceiling Maximum limit value

Material Name: Nano-Hydroxyapatite

Section 1: Identification of the product

Product Name	Hydroxyapatite powder
Use	For medical Purpose

Section 2: Composition & Information on Ingredients

Chemical Characterisation	$HCa_5O_{13}P_3$
Hazardous Ingredients	Nil

Section 3: Hazard Identification

Toxicity	No Data Available
Eye Contact	Dust may cause irritation

Section 4: First Aid Measures

Skin	Wash skin with soap and copious amounts of water
Eyes	Immediate and prolonged irritation treat with copious amounts of water.
Ingestion	Wash out mouth with water provided person Is Conscious.
	breathing give artificial respiration. If breathing is difficult, given oxygen.

Section 5: Firefighting Measures

Extinguishing Data	**Water Spray**
Extinguishing Data	Water Spray
Unsuitable Extinguishing Data	Carbon Dioxide, Dry Chemical Powder, Polymer Foam
Unusual Firefighting Hazards	Capable of creating a dust explosion
Special Firefighting Procedures	Use normal procedures which include wearing self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6: Accidental Release Measures

Personal Precautions	Wear respirator, chemical safety goggles, rubber boots and gloves.
Precautions to the Environment	Sweep up, place in a bag and hold for waste disposal.

Clean-up Procedures	Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7: Handling and Storage

Handling Precautions	Chemical Safety Goggles. Compatible with Chemical-resistant Gloves
Storage	Store in a cool dry place
Unusable packaging materials	Wash thoroughly after handling. Irritating dust, Keep tightly closed

Section 8: Exposure Controls and Personal Protection

Personal Protective Equipment	
Respiratory	Self- contained breathing apparatus
Hand	Chemical-resistant gloves
Eye	Avoid contact with eyes
Skin	Wash thoroughly after handling

Section 9: Physical and Chemical Properties

Appearance	
Form	Crystalline (Powder)
Color	White/off white
Odour	No odour

Safety Related Information	
FlashPoint	N/A
Boiling Point	N/A
Melting Point	1100 °C
pH	N/A

Section 10: Stability and Reactivity

Stability	Completely Stable
Reactivity	Non Reactive/ Non Soluble

Section 11: Toxicological Information

Possible Health Effects	
Skin	No effect
Eyes	Irritation
Inhalation	No Chocking Hazard
Toxicity	Non-Toxic

Section 12: Ecological Impact

Avoid raising dust. Ventilate area and wash spill site after material pickup is complete. No Negative Ecological Impact, Data not Available

WASTE DISPOSAL

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator, equipped with an afterburner and scrubber

Section 13: Transport information

HS Code	-
CAS	1306-06-05
Proper Shipping Name	Hydroxyapatite Powder
Air Transport	Micro Powder
Class	Non Hazardous

Section 14: Other Regulatory information

Federal and State Regulations: TSCA 8(b) inventory: Hydroxyapatite Powder

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada)
DSCL (EEC):

R36- Irritating to eyes
S2- Keep out of the reach of children
S46- If swallowed, seek medical advice immediately & show container or label.

HMIS (U.S.A.):

Health Hazard: 1
Fire Hazard: 0
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A):

Health: 1
Flammability: 0
Reactivity: 0
Specific hazard:

Protective Equipment:

Gloves.
Lab coat.
Dust respirator. Be sure to use an approved/certified respirator or equivalent.
Splash goggles.

Section 15: Other information

References: Not available
Other Special Considerations: Not available

Name of Material: Spearmint Oil

Section 1: Product Identification

1.1 Trade Name (as labeled): Spearmint Oil

Botanical Name: Mentha Spicata
INCI Name: Mentha Spicata (Spearmint) Oil
Synonyms: None
CAS No: 8008-79-5
EINECS No: 616-927-4
FEMA No: Not available

1.2 Product Use: Personal Care Formulations

Section 2: Hazard Identification

EMERGENCY OVERVIEW: This product is a colorless to pale yellow oil with a characteristic odor.

Health Hazards: May cause skin and eye irritation. Can cause allergic reaction in contact with skin. May be harmful if swallowed. May be an aspiration hazard.

Flammability Hazards: This product is considered a combustible liquid with a flashpoint of > 66 °C (150°F).

Reactivity Hazards: No data available.

Environmental Hazards: No specific data available on this product.

US DOT Symbols:

EU and GHS Symbols:

Signal word: Danger

1.1 <u>EU labelling and Classification</u>

This product does meet the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

Components Contributing to Classification:

Spearmint Oil (Mentha Spicata Oil

1.2 <u>Label Elements:</u>

GHS Hazard Classifications: Flammable Liquid Category 4
Acute Toxicity Category 4 (Oral)
Skin Irritation Category 2
Eye Irritation Category 2A
Skin Sensitization Category 1
Aspiration Hazard Category 1

Hazard Statements: H227 Combustible liquid
H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H317 May cause an allergic skin reaction
H304 May be fatal if swallowed and enters airways

Prevention Statements: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash area affected thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response Statements: P370+P378 In case of fire: See Section 5 for appropriate media to extinguish.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P331 Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of water.
P321 Specific treatment (See Section 4 of this SDS).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage Statements: P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.

Disposal Statements: P501 Dispose of contents/container in accordance with local regulations.

1.3 Health Hazards or Risks From Exposure:

Symptoms of Overexposure by Route of Exposure:

The most significant routes of overexposure for this product are by contact with skin. The symptoms of overexposure are described in the following paragraphs.

Acute:

Inhalation: May be harmful if inhaled. May cause respiratory or irritation.

Skin Contact: May cause skin irritation upon direct contact. May cause allergic reaction.

Eye Contact: May cause eye irritation.

Ingestion: May be harmful if swallowed. Aspiration hazard.

Chronic: No data available.

Target Organs:

Acute: Skin, Eyes, Respiratory System

Chronic: No data available.

Section 3: Composition/Information on ingredients

3.1 Type of Product: Natural Sourcing Organic Essential Oils

Ingredients:	WT%	CAS No.	EINECS No.	Hazard Classification
Spearmint Oil (Mentha Spicata Oil)	100%	8008-79-5	616-927-4	Flammable Liquid Category 4, Acute Toxicity Category 4 (Oral), Skin Irritation Category 2, Eye Irritation Category 2A, Skin Sensitization Category 1, Aspiration Hazard Category 1

Section 4: First Aid Measures

4.1 Description of First Aid Measures:

Eye Contact: If product enters the eyes, flush with plenty of water or eye wash solution for several minutes. Seek medical attention if irritation persists.

Skin Contact: Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.

Inhalation: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

Ingestion: If product is swallowed, call physician or poison center if you feel unwell. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

Medical conditions Generally Aggravated by Exposure: No data available

4.2 Symptoms and Effects Both Acute and Delayed: Contact with skin and eyes may cause irritation. May cause an allergic reaction of the skin.

4.3 Recommendations to Physicians: Treat symptoms and eliminate overexposure

Section 5: Fire Fighting Measures

5.1 Fire Extinguishing Materials:

Use the following fire extinguishing materials:

Water Spray: No **Foam:** Yes **Halon:** Yes
Carbon Dioxide: Yes **Dry Chemical:** Yes **Other:** Any "B" Class

5.2 Unusual Fire and Explosion Hazards:

Use of water is not a suitable extinguishing material. In the event of a fire: formation of dangerous fumes possible.
Explosive Sensitivity to Mechanical Impact: No
Explosive Sensitivity to Static Discharge: No

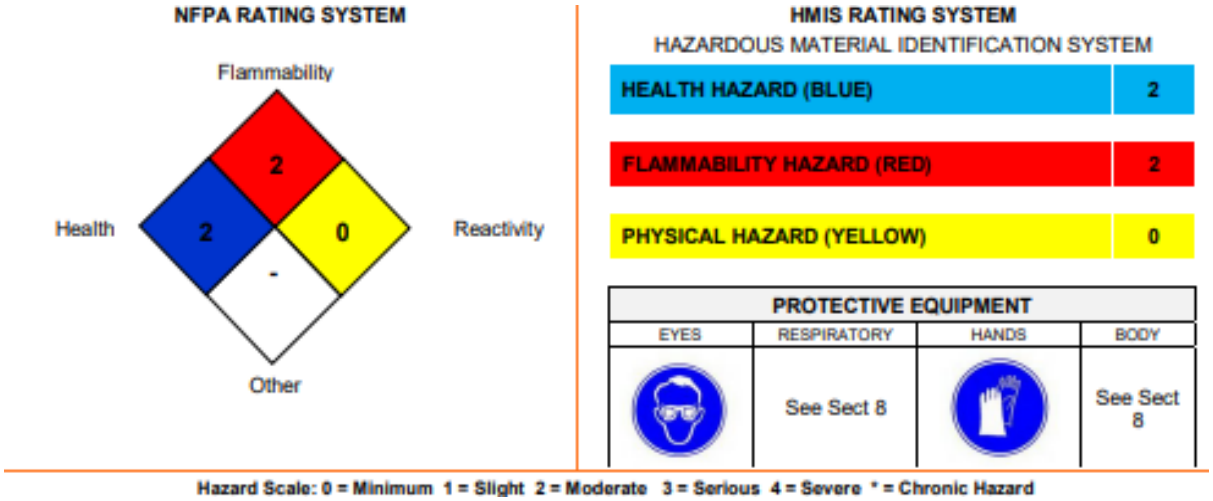
5.3 Special Fire-Fighting Procedures:

- Incipient fire responders should wear eye protection.
- Structural firefighters must wear Self-Contained Breathing Apparatus

(SCBA) and full protective equipment.

• Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray.

• If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.



Section 6: Accidental Release Measures (Steps for Spills)

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Use cautious judgment when cleaning up spill. Wear suitable protective clothing, gloves, and eye/face protection.

6.2 Environmental Precautions:

Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

6.3 Spill and Leak Response:

Small Spills:

- Collect material via broom or mop. Place in tightly sealed containers for proper disposal. Large Spills:
- Approach spill areas with caution.
- If liquid was introduced, create a dike or trench to contain material. Soak up with absorbent material such as clay, sand or other suitable non-reactive material.
- Place in leak-proof containers. Seal tightly for proper disposal.

- Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

Section 7: Handling and Storage

7.1 Precautions for Safe Handling:

To prevent eye contact under the foreseeable conditions of use, wear appropriate safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling.

7.2 Storage and Handling Practices:

Keep away from oxidizing agents. Store in a cool, dry location, in a sealed container in a well ventilated area away from sources of ignition.

7.3 Specific Uses:

Personal care formulations.

Section 8: Exposure Control/Personal Protection

8.1 Exposure Parameters:

Ingredients	CAS No.	OSHA PEL	NIOSH PEL
Spearmint Oil (Mentha Spicata Oil)	8008-79-5	Not listed	Not listed

8.2 Exposure Controls:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Not required for properly ventilated areas.

Respiratory Protection: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection

authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Eye Protection:	Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.
Hand Protection:	Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.
Body Protection:	Use body protect appropriate to task being performed. If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.
Body Protection:	If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

Section 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties:

Appearance (Physical State and Color): This product is a colorless to pale yellow liquid oil.
Odor: Characteristic odor
Odor Threshold: Not Available
pH: Not Available
Melting/Freezing Point: Not Available
Boiling Point: Not Available
Flash Point: > 66 °C (150°F) closed cup
Evaporation Rate: Not Available
Flammability (Solid; Gas): Not Available
Upper/Lower Flammability or Explosion Limits: Not Available
Vapor Pressure (mm Hg @ 20°C (68°F): Not Available
Vapor Density: Not Available
Relative Density: Not Available
Specific Gravity: 0.928
Solubility in Water: Insoluble
Weight per Gallon: Not Available

Partition Coefficient (n-octanol/water): Not Available
Auto-Ignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available

9.2 Other Information: No additional information available at this time.

Section 10: Stability and Reactivity

10.1 Reactivity: This product is not reactive.
10.2 Stability: Stable under conditions of normal storage and use.
10.3 Possibility of Hazardous Reactions: Will not occur.
10.4 Conditions to Avoid: Heat, open flame, sun light
10.5 Incompatible Substances: Oxidizing agents.
10.6 Hazardous Decomposition Products: Burning produces carbon monoxide and carbon dioxide.

Section 11: Toxicological Information

11.1 Information on Toxicological Effects: No specific data available for this product.

Suspected Cancer Agent: Ingredients within this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

Irritancy: Expected to be a skin and eye irritant

Sensitization to the Product: This product is expected to cause respiratory and skin sensitization.

Reproductive Toxicity: No specific information is available concerning the effects of this product and its components on the human reproductive system.

Section 12: Ecological Information

12.1 Toxicity: No specific data available on this product.
12.2 Persistence and Degradability: No specific data available on this product.
12.3 Bioaccumulative Potential: No specific data available on this product.
12.4 Mobility in Soil: No specific data available on this product.
12.5 Results of PBT and vPvB Assessment: No specific data available on this product.
12.6 Other Adverse Effects: No data available
12.7 Water Endangerment Class: At present, there are no ecotoxicological assessments for this product

Section 13: Disposal Considerations

13.1 Waste Treatment Methods: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

13.2 EU Waste Code: Not determined

Section 14: Transportation Information

US DOT, IATA, IMO, ADR:

14.1 U.S. Department of Transportation (DOT) Shipping Regulations:

This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN Identification Number: NA1993
Proper Shipping Name: Combustible Liquids, n.o.s.
Hazard Class Number and Description: Class 3 – Flammable Liquid
Packing Group: III
DOT Label(s) Required: Flammable Liquid
North American Emergency Response Guidebook Number: 128
RQ Quantity: None

14.2 Environmental Hazards:

Marine Pollutant: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

14.3 Special Precaution for User: When shipping with inner packaging not over 5.0L (1.3 gal) may be shipped as limited quantities.

14.4 International Air Transport Association Shipping Information (IATA):

This product is not considered as dangerous goods**.**

14.5 International Maritime Organization Shipping Information (IMO):

This product is not considered as dangerous goods.

14.6 Transport in Bulk According to Annex II of Marpol 73/78 and IBC code:

European Agreement Concerning the International
Carriage of Dangerous Goods by Road (ADR:) This product is not considered by the United Nations Economic Commission for Europe to be dangerous goods

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations Specific for the Substance or Mixture:

United States Regulations:

U.S. SARA Reporting Requirements:
The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows: None

U.S. SARA Threshold Planning Quantity:
There are no specific Threshold Planning Quantities for the components of this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA Reportable Quantity: None

U.S. TSCA Inventory Status:
The components of this product are listed on the TSCA Inventory or are exempted from listing. Other

U.S. Federal Regulations:
None known

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):
This product does not contain ingredients on the Proposition 65 Lists.

15.2 Canadian Regulations:

Canadian DSL/NDSL Inventory Status:
Components are DSL Listed, NDSL Listed and/or are exempt from listing

Other Canadian Regulations:
Not applicable

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.

Canadian WHMIS Classification and Symbols:
This product is classified per WHMIS Controlled Product Regulations.

15.3 European Economic Community Information:

This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives. See Section 2 for Details.

Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 Australian Information for Product:

Components of this product are listed on the International Chemical Inventory list.

Name of Materials: Clove oil

Section 1: Identification of the substance

1.1 Product identifier

Identification of the substance	Oil of cloves ≥80 %, natural, rectified
Registration number (REACH)	01-2119971802-33-xxxx
EC number	284-638-7
CAS number	84961-50-2
Alternative name(s)	Oleum Caryophyllorum

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

Relevant identified uses: Laboratory chemical Laboratory and analytical use

Uses advised against:	Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.4S	Skin sensitisation	1	Skin Sens. 1	H317
3.10	Aspiration hazard	1	Asp. Tox. 1	H304

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word **Danger**

Pictograms

GHS07, GHS08

Hazard statements

H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation

Precautionary statements

Precautionary statements – prevention

P280 Wear protective gloves/eye protection

Precautionary statements- response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor
P302+P352 IF ON SKIN: Wash with plenty of water
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P331 Do NOT induce vomiting

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)

H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.

P280 Wear protective gloves/eye protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352 IF ON SKIN: Wash with plenty of water.
P331 Do NOT induce vomiting

2.3 Other hazards

Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment
According to the results of its assessment, this substance is not a PBT or a vPvB.

Section 3: Composition/ information on ingredients

3.1 Substances

Name of substance Oil of cloves
REACH Reg. No 01-2119971802-33-xxxx
CAS No 84961-50-2
EC No 284-638-7

Impurities and additives, classification acc. to GHS				
Name of substance	**Identifier**	**Wt%**	**Classification acc. to GHS**	**Pictograms**
Eugenol	CAS No 97-53-0 EC No 202-589-1	70 – < 95	Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Skin Sens. 1 / H317	

β-Caryophyllene	CAS No 87-44-5 EC No 201-746-1	5 – < 15	Skin Sens. 1 / H317 Asp. Tox. 1 / H304	
α-Humulene	CAS No 6753-98-6 EC No 229-816-7	1 – < 10	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 STOT SE 3 / H335	
Isoeugenol	CAS No 97-54-1 EC No 202-590-7 Index No 604-094-00-X	<0,1	Acute Tox. 4 / H302 Skin Sens. 1A / H317	

Section 4: First aid measures

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

lRinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Call a physician immediately. Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard, Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

none

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO_2)

5.2 Special hazards arising from the substance or mixture

Combustible

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO_2), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill
covering of drains.

Advice on how to clean up a spill
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation.

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice:
Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

Section 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)
This information is not available.

Relevant DNELs of components of the mixture						
Name of substance	**CAS No**	**End-point**	**Threshold level**	**Protection goal, route of exposure**	**Used in**	**Exposure time**
Eugenol	97-53-0	DNEL	21,2 mg/ m^3	human, inhalatory	worker (industry)	chronic - systemic effects
Eugenol	97-53-0	DNEL	6 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
Eugenol	97-53-0	PNEC	1,13 µg/l	aquatic organisms	freshwater	short-term (single instance)
Eugenol	97-53-0	PNEC	0,113 µg/l	aquatic organisms	marine water	short-term (single instance)
Eugenol	97-53-0	PNEC	0,081 mg/ kg	aquatic organism	freshwaters	short-term (single instance)
Eugenol	97-53-0	PNEC	0,008 mg/ kg	aquatic organism	marine sediment	short-term (single instance)
Eugenol	97-53-0	PNEC	0,015 mg/ kg	Terrestrial organism	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection

Skin protection

- **Hand protection**

  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

  - **Type of material**
    NBR (Nitrile rubber)

  - **Material thickness**

    ≥0,3 mm

  - **breakthrough times of the glove material**
    >480 minutes

  - **other protection measures**
    Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown). Type: ABEK (combined filters against gases and vapours, colour code: Brown/Grey/Yellow/Green).

Environmental exposure controls

Keep away from drains, surface and ground water.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Form	Viscous
Colour	Colourless-light brown
Odour	characteristic
Melting point/freezing point	-9 °C
Boiling point or initial boiling point and boiling range	248 °C
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	Not determined
Flash point	117 °C
Auto-ignition temperature	380 °C
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	Not determined
Water solubility	Not determined
Partition coefficient n-octanol/water (log value):	this information is not available
Vapour pressure	not determined
Density	1,03 – 1,06 g /cm^3 at 20 °C
Relative vapour density	information on this property is not available
Particle characteristics	Not relevant (liquid)
Oxidising properties	None

9.2 Other information

Information with regard to physical hazard classes GHS:
hazard classes acc. to (physical hazards): not relevant

Other safety characteristics:
Refractive index 1,528 – 1,537 (20 °C)

Section 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated

Vapours may form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products

Section 11: Toxicological Information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity
Shall not be classified as acutely toxic.

Acute toxicity of components of the mixture					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
Eugenol	97-53-0	Oral	LD50	1.930 mg/kg	rat
β-Caryophyllene	87-44-5	**Oral**	LD50	>5.000 mg/kg	Mouse
Isoeugenol	97-54-1	oral	LD50	1.560 mg/kg	rat

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitisation
May cause an allergic skin reaction.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
Shall not be classified as carcinogenic.

Reproductive toxicity
Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity -
repeated exposure Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
May be fatal if swallowed and enters airways

Symptoms related to the the physical, chemical and toxicological characteristic

- **If swallowed**
  vomiting, nausea, Spasms, aspiration hazard

- **If in eyes**
  Causes serious eye irritation

- **If inhaled**
  cough, breathing difficulties

- **If on skin**
  causes skin irritation, May produce an allergic reaction, pruritis, localised redness

- **Other information**
  None

11.2 Endocrine disrupting properties

Not listed.

11.3 Information on other hazards

There is no additional information.

Section 12: Ecological Information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	**CAS No**	**Endpoint**	**Value**	**Species**	**Exposure time**
Eugenol	97-53-0	EC50	1,05 mg/l	daphnia magna	48 h
Eugenol	97-53-0	ErC50	24 mg/l	algae	72 h
β-Caryophyllene	87-44-5	EC50	>0,17 mg/l	daphnia magna	48 h
β-Caryophyllene	87-44-5	ErC50	>0,033 mg/l	algae	72 h

Biodegradation

Data are not available.

12.2 Process of degradability

Aquatic toxicity (acute) of components of the mixture					
Name of substance	**CAS No**	**Process**	**Degradation rate**	**Time**	**Exposure time**
Eugenol	97-53-0	biotic/abiotic	82%	28 d	
Eugenol	97-53-0	oxygen depletion	50 %	7 d	ECHA
β-Caryophyllene	87-44-5	oxygen depletion	10 %	28 d	ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture				
Name of substance	**CAS No**	**BCF**	**Log KOW**	**BODS/COD**
Eugenol	97-53-0		1,83 (pH value: 5,5, 30 °C)	
β-Caryophyllene	87-44-5		6,23 (pH value: 7, 25 °C)	
Isoeugenol	97-54-1		2,1	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

Section 13: Disposal Considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal- relevant information

Do not empty into drains.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

Section 14: Transport information

14.1 UN number or ID number no subject to transport regulations

14.2 UN proper shipping name Not assigned

14.3 Transport hazard class(es) none

14.4 Packing group not assigned

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information
Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG) - Additional information
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information
Not subject to ICAO-IATA.

Section 15: regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangers substances with restrictions (REACH, Annex XVII)				
Name of substance	**Name acc. to inventory**	**CAS No**	**Restriction**	**No**
oil of cloves	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
oil of cloves	substances in tattoo inks and permanent make-up		R75	75

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list
Not listed.

Seveso Directive

2012/18/EU (seveso III)		
No	**Dangerous substance/hazard categories**	**Qualifying quantity (tonnes) for the application of lower and upper-tier requirements**

	Not assigned	

Deco-Paint Directive

VOC content	100%, 1.060 g/l

Industrial Emissions Directive (IED)

VOC content	100%
VOC content	1.060 g/l

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

Country	Inventory	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	IECSC	substance is listed
EU	ECSI	substance is listed
NZ	REACH Reg.	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed

Legend

AICS Australian Inventory of Chemical Substances
CICR Chemical Inventory and Control Regulation
DSL Domestic Substances List (DSL) ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
NZIoC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances TCSI Taiwan Chemical Substance Inventory

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out for this substance.

Section 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by In-land Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Asp. Tox	Aspiration hazard
BCF	Bio concentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations

Name of Materials: Cinnamon Oil

Section 1: Identification of the substance

1.1 Product Identifier

Identification of the substance	**Oil of cinnamon**, artificial
Registration number (REACH)	not relevant (mixture)

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

Relevant identified uses: Laboratory and analytical use Laboratory chemical

Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.1D	Acute toxicity (dermal)	4	Acute Tox. 4	H312
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
3.45	Skin sensitisation	1	Skin Sens. 1	H317
4.1C	Hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word **Warning**

Pictograms

GHS07

Hazard statements

H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of water
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P333+P313 If skin irritation or rash occurs: Get medical advice/attention

Hazardous ingredients for labelling: Cinnamaldehyde, Eugenol, β-Caryophyllene, Linalool

Labelling of packages where the contents do not exceed 125 ml
Signal word: **Warning**

Symbol(s)

H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.
P280	Wear protective gloves/eye protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
contains:	Cinnamaldehyde, Eugenol, β-Caryophyllene, Linalool

2.3 Other Hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Section 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Cinnamaldehyde	CAS No 104-55-2 EC No 203-213-9 REACH Reg. No 01-2119935242-45-xxxx 01-2119950687-24-xxxx	50 -< 70	Acute Tox. 4 / H312 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Skin Sens. 1 / H317 Aquatic Chronic 3 / H412		
Eugenol	CAS No 97-53-0 EC No 202-589-1 REACH Reg. No 01-2119971802-33-xxxx	10 - <25	Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Skin Sens. 1 / H317		
β-Caryophyllene	CAS No 87-44-5 EC No 201-746-1	< 10	Skin Sens. 1 / H317 Asp. Tox. 1 / H304	 	
Linalool	CAS No 78-70-6 EC No 201-134-4	< 5	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Skin Sens. 1B / H317		GHS-HC

	Index No 603-235-00-2 REACH Reg. No 01-2119474016-42-xxxx				

Notes

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/ 2008/EC, Annex VI)

Name of substance	Identifier	Specific Conc. Limits	M-Factors	ATE	Exposure route
Cinnamaldehyde	CAS No 104-55-2 EC No 203-213-9	-	-	1.260 mg/kg	Dermal
Eugenol	CAS No 97-53-0 EC No 202-589-1	-	-	1.930 mg/kg	Oral

Section 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

Following eye contact
Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed
Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed
none

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
co-ordinate firefighting measures to the fire surroundings water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO_2)

Unsuitable extinguishing media
water jet

Special hazards arising from the substance or mixture
Combustible.

Hazardous combustion products
Carbon monoxide (CO), Carbon dioxide (CO_2), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill
Covering of drains.

Advice on how to clean up a spill
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

Section 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation

Measures to prevent fire as well as aerosol and dust generation


keep away from source of ignition- No smoking,

Advice on general occupational hygiene
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice:

Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

Section 8: Exposures Controls/ personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)
Data are not available.

Relevant DNELs of components of the mixture						
Name of substance	**CAS No**	**End-point**	**Threshold level**	**Protection goal, route of exposure**	**Used in**	**Exposure time**
Eugenol	97-53-0	DNEL	21,2 mg/ m^3	human, inhalatory	worker (industry)	chronic - systemic effects
Eugenol	97-53-0	DNEL	6 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Linalool	78-70-6	DNEL	2,8 mg/m^3	human, inhalatory	worker (industry)	chronic - systemic effects
Linalool	78-70-6	DNEL	16,5 mg/ m^3	human, inhalatory	worker (industry)	acute - systemic effects
Linalool	78-70-6	DNEL	2,5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Linalool	78-70-6	DNEL	5 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	**CAS No**	**End-point**	**Threshold level**	**Protection goal, route of exposure**	**Used in**	**Exposure time**
Eugenol	97-53-0	PNEC	1,13 µg/L	aquatic organisms	freshwater	short-term

						(single instance)
Eugenol	97-53-0	PNEC	0,113 µg/l	aquatic organisms	marine water	short-term (single instance)
Eugenol	97-53-0	PNEC	0,081 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Eugenol	97-53-0	PNEC	0,008 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Eugenol	97-53-0	PNEC	0,015 mg/kg	terrestrial organisms	soil	short-term (single instance)
Linalool	78-70-6	PNEC	0,2 mg/l	aquatic organisms	freshwater	short-term (single instance)
Linalool	78-70-6	PNEC	0,02 mg/l	aquatic organisms	marine water	short-term (single instance)
Linalool	78-70-6	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Linalool	78-70-6	PNEC	2,22 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)

Relevant PNECs of components of the mixture						
Name of substance	**CAS No**	**End-point**	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
Linalool	78-70-6	PNEC	0,222 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Linalool	78-70-6	PNEC	0,327 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

- **hand protection**
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.
  • type of material
  Butyl caoutchouc (butyl rubber)
  • material thickness
  >0,3 mm
  • breakthrough times of the glove material
  >480 minutes (permeation: level 6)
  • other protection measures
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	clear - light yellow
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	not determined
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	not determined
Flash point	>63 °C
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Density	1,02 – 1,03 g /cm^3 at 20 °C

9.2 Other information

Information with regard to physical hazard classes:

hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics:

Refractive index 1,59 – 1,596 (20 °C)

Section 10: stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated

Vapours may form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

Section 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Harmful in contact with skin.

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	**CAS No**	**Exposure route**	**ATE**
Cinnamaldehyde	104-55-2	Dermal	1.260 mg/kg
Eugenol	97-53-0	Oral	1.930 mg/kg

Acute toxicity of components of the mixture					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
Cinnamaldehyde	104-55-2	oral	LD50	2.220 mg/kg	Rat
Cinnamaldehyde	104-55-2	Dermal	LD50	1.260 mg/kg	rabbit

Eugenol	97-53-0	oral	LD50	1.930 mg/kg	rat
β-Caryophyllene	87-44-5	oral	LD50	>5.000 mg/kg	mouse

Acute toxicity of components of the mixture					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
Linalool	78-70-6	oral	LD50	2.790 mg/kg	Rat
Linalool	78-70-6	dermal	LD50	5.610 mg/kg	Rabbit

Skin corrosion/ irritation

Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation

Respiratory or skin sensitisation
May cause an allergic skin reaction.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
Shall not be classified as carcinogenic.

Reproductive toxicity
Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

- **If swallowed**
  Data are not available

- **If in eyes**
  Causes serious eye irritation

- **If inhaled**
  Data are not available.

- **If on skin**
  Causes skin irritation, may produce an allergic reaction, pruritis, localised redness

- **Other information**
  None

11.2 Endocrine disrupting properties

None of the ingredients are listed.

11.3 Information on other hazards.

There is no additional information.

Section 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	**CAS No**	**Endpoint**	**Value**	**Species**	**Exposure time**
Cinnamaldehyde	104-55-2	LC50	2,35 mg/l	fish	96 h
Cinnamaldehyde	104-55-2	EC50	119,6 mg/l	aquatic invertebrates	48 h
Eugenol	97-53-0	EC50	1,05 mg/l	daphnia magna	48 h
Eugenol	97-53-0	ErC50	24 mg/l	algae	72 h
β-Caryophyllene	87-44-5	EC50	>0,17 mg/l	daphnia magna	48 h
β-Caryophyllene	87-44-5	ErC50	>0,033 mg/l	Algae	72 h
Linalool	78-70-6	LC50	27,8 mg/l	fish	96 h
Linalool	78-70-6	EC50	59 mg/l	aquatic invertebrates	48 h
Linalool	78-70-6	ErC50	156,7 mg/l	algae	96 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	**CAS No**	**Endpoint**	**Value**	**Species**	**Exposure time**
Cinnamaldehyde	104-55-2	EC50	0,402 mg/l	aquatic invertebrates	21 d

Linalool	78-70-6	EC50	>100 mg/l	microorganisms	30 min

Biodegradation
Data are not available.

12.2 Process of degradability

Degradability of components of the mixture					
Name of substance	**CAS No**	**Process**	**Degradation rate**	**Time**	**Source**
Cinnamaldehyde	104-55-2	biotic/abiotic	100 %	28 d	
Cinnamaldehyde	104-55-2	carbon dioxide generation	89%	7d	ECHA
Eugenol	97-53-0	biotic/abiotic	82 %	28 d	
Eugenol	97-53-0	oxygen depletion	50 %	7d	ECHA
β-Caryophyllene	87-44-5	oxygen depletion	10 %	28 d	ECHA
Linalool	78-70-6	oxygen depletion	40,9%	5 d	ECHA

12.3 Bioaccumulative potential

Data are not available

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Cinnamaldehyde	104-55-2	8	2,107 (25 °C)	
Eugenol	97-53-0		1,83 (pH value: 5,5, 30 °C)	
β-Caryophyllene	87-44-5		6,23 (pH value: 7, 25 °C)	
Linalool	78-70-6		2,9 (pH value: 7, 20 °C)	

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Endocrine disrupting properties
None of the ingredients are listed.

12.7 Other adverse effects
Data are not available.

Section 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

Section 14: Transport information

14.1 UN number or ID number	not subject or transport regulations
14.2 UN proper shipping name	not assigned
14.3 Transport hazard class(es)	none
14.4 Packaging group	not assigned
14.5 Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations
14.6 Special precautions for user	There is no additional information.
14.7 Maritime transport in bulk according to IMO instruments	The cargo is not intended to be carried in bulk.

Section 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	**Name acc. to inventory**	**CAS No**	**Restriction**	**No**
Oil of cinnamon	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	8015-91-6	-	-

Legend

R3 1. Shall not be used in: - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, - tricks and jokes, - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,

2. Articles not complying with paragraph 1 shall not be placed on the market.

3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: - can be used as fuel in decorative oil lamps for supply to the general public, and, - present an aspiration hazard and are labelled with R65 or H304,

4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).

5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: (a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage'; (b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage'. (c) lamp oils and grill lighters, labelled with R65 or H304, intended

for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.

6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.

7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

None of the ingredients are listed. (Or Concentration of the substance in a mixture: <0.1% Mass concentration)

Seveso Directive

2012/18/EU (Seveso III)			
No	**Dangerous substance/hazard categories**	**Qualifying quantity (tonnes) for the application of lower and upper-tier requirements**	**Notes**
	not assigned		

Deco-Paint Directive (2004/42/EC)

VOC content	25 % 257,5 g /l

Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content	5%
VOC content	51,5 g/l

National inventories

Country	Inventory	Status
AU	AICS	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	all ingredients are listed

JP	CSCL-ENCS	all ingredients are listed
JP	ISHA-ENCS	Not all ingredients are listed
KR	KECI	all ingredients are listed
MX	INSQ	Not all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	Not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

Legend

AICS Australian Inventory of Chemical Substances
CICR Chemical Inventory and Control Regulation
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China INSQ National Inventory of Chemical Substances
ISHA-ENCS Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI Korea Existing Chemicals Inventory
NZIoC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances TCSI Taiwan Chemical Substance Inventory TSCA Toxic Substance Control Act

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

Section 16: Other information

16.1 List of relevant phrases

Code	Text
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects.

Name of Material: Menthol

Section 1: Chemical Product Identification

MSDS Name: Menthol
Catalog Numbers:
Synonyms: Peppermint Camphor

Section 2: Composition, information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
15356-70-4	Menthol	>99	**239-388-3**

Hazard Symbols: None listed.
Risk Phrases: None listed.

Section 3: Hazards Identification

EMERGENCY OVERVIEW

Appearance: white **Caution!** Sensitizer. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause allergic respiratory reaction. May cause allergic skin reaction. The toxicological properties of this material have not been fully investigated.
Target Organs: None

Potential Health Effects

Eye: May cause severe eye irritation.
Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Ingestion: May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. May cause allergic reactions (urticaria).
Inhalation: May cause respiratory tract irritation. May cause methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea (labored breathing), and death. The toxicological properties of this substance have not been full investigated.
Chronic: Not available.

Section 4: First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: No specific antidote exists. Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes.
Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions.

Section 7: Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8: Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA-Final PELs
Dl- menthol	None listed	None listed	None listed

OSHA Vacated PELs: Dl-menthol: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9: Physical and chemical properties

Physical State: Solid
Appearance: white
Odor: none reported
pH: Not available.
Vapor Pressure: Not applicable.
Vapor Density: Not available.
Evaporation Rate: Not applicable.
Viscosity: Not available.
Boiling Point: 216 deg C
Freezing/Melting Point: >28 deg C
Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
Decomposition Temperature: Not available.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.
Solubility: Not available.
Specific Gravity/Density: 0.89 (water=1)
Molecular Formula: C10H20O
Molecular Weight: 156.1394

Section 10: Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: High temperatures, incompatible materials.
Incompatibilities with Other Materials: Strong oxidizers. Hazardous
Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported

Section 11: Toxicological Information

RTECS#:
CAS# 15356-70-4: OT0525000
LD50/LC50:
CAS# 15356-70-4:
Draize test, rabbit, skin: 500 mg/24H Mild;
Oral, mouse: LD50 = 3100 mg/kg;
Oral, rat: LD50 = 2900 mg/kg;
Skin, rabbit: LD50 = >5 gm/kg;

Carcinogenicity:
CAS# 15356-70-4: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Neurotoxicity: No information available.
Mutagenicity: Please refer to RTECS# OT0525000 for specific information.
Other Studies: None.

Section 12: Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information reported.
Physical: No information available.
Other: No information available.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	No information available				No information available
Hazard Class:					
UN Number:					
Packing Group:					

Section 15: Regulatory Information

US FEDERAL

TSCA

CAS# 15356-70-4 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 15356-70-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 15356-70-4: 1

Canada

CAS# 15356-70-4 is listed on Canada's DSL List. CAS# 15356-70-4 is listed on Canada's DSL List.

This product has a WHMIS classification of D2B.

CAS# 15356-70-4 is not listed on Canada's Ingredient Disclosure List.

Conclusion:

Tentative Formula To Be Freeze

Ingredients	Source	Quantity	Role
Calcium Carbonate	Chalk, limestone	50%	Abrasive
Vegetable Glycerin	Soyabean, Coconut or palm oil	40%	Humectant
Stevia Sugar/Raw Cane Sugar/Date Syrup	Candyleaf/Sugar Cane/ Dates	20 mg	Sweetener
Reetha	Reetha seeds	10 mg	Cleansing agent, Foaming agent
Rosemary Extract	Leaves of Rosmarinus Officinalis L	10 mg	Preservative
Papaya Extract	Papaya Fruit	10%	Antioxidant, Reduce Stains and protects against plague formulation
Sea salt	Sea	0.5%	Reduce Bacteria, Preservative & Helps to maintain pH level of mouth
Neem Extract	Seeds of Azardirachta indica	10 mg	Preventing cavities and Gum disease, Whitening & Antibacterial
Aloe Vera Extract	Leafs of Aloe Barbadensis	10 mg	Control bacteria & soothing agent
Liquorice extract	Roots of Glycyrrhiza glabra	10 mg	Anti-inflammatory, Antioxidant
Tomar Extract	Tomar seeds	20 mg	Antioxidant, Anti-inflammatory & Relieve mouth pain and dental problems
Babool Extract	Babool Bark powder	20 mg	Antibacterial, anti-inflammatory and astringent
Pomegranate Extract	Punica Granatum Fruit	10 mg	Strengthening gums and fastening loose teeth, anti-inflammatory

Sodium Carboxymethyl Cellulose	Cellulose by treatment with alkali and monochloro-acetic acid or its sodium salt.	0.5%	Thickener
Peppermint oil	Parts and Leaves of the peppermint plant	1.05%	Flavouring agent, Controls bad breath
Nano-Hydroxyapatite	Calcium derived	10%	Remineralizing teeth
Spearmint oil	Flowering tops of perennial plant	10 mg	Flavouring agent, Controls bad breath
Clove oil	Clove buds	10 mg	Flavouring agent, Antioxidant
Cinnamon oil	Cinnamon bark	0.5 mg	Flavouring agent
Menthol	Derived from mint plants	0.5%	Flavouring agent, Controls bad breath
Strawberry Syrup/Mint/Chocolate Mint	From fruits/Mint leaves	0.5%	Flavouring agent
Aqua	Natural	qs	Solvent

Excipients All Natural and Vegan, However for formulation purpose some chemical excipients will be used, this will be declared after first successful trial.