MATERIAL SAFETY DATA SHEET OF ESSENTIAL OILS FROM NEPAL

Government of Nepal
Ministry of Forests and Soil Conservation
Department of Plant Resources
Natural Products Research Laboratory
Thapathali, Kathmandu, Nepal
2014

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Forewords

Nepal possesses rich heritage of Medicinal and Aromatic Plants (MAPs). Essential oils obtained from various aromatic plants are one of the exportable products of Nepal. Herbs and NTFPs Development Policy-2004 has emphasized on the promotion of value added products such as essential oils and herbs extracts rather than crude herbs. On the other hand, quality assurance and some technical data of such products are also required by EU, US and other markets. National Trade Integration Strategy (NTIS)- 2010 has provided us an opportunity to strengthen our laboratory, impart training to laboratory technicians and purchase some relevant equipment that has helped us to formulate some data and prepare technical document that can enhance export of value added products such as essential oils.

Material Safety Data Sheet (MSDS) developed for essential oils of Nepal will certainly help to enhance the export potential of these products and ease the business community to export such products to lucrative markets. This endeavor will ultimately uplift the livelihood of Nepalese village people engaged in the cultivation and collection of MAPs. There has been contribution from all stakeholders to bring out this work on essential oils of Nepal. We are also hopeful that this document will prove valuable to researchers and students involved in essential oils sector as a reference. We are optimistic that this document will be milestone in exporting essential oil from Nepal.

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Mr. Yam Bahadur Thapa
Director General
Department of Plant Resources
Thapathali, Kathmandu
July, 2014

Acknowledgment

Medicinal and Aromatic Plants (MAPs) are niche products of Nepal, prioritized by Government of Nepal as one of the exporting commodity. National Trade Integration Strategy (NTIS)- 2010 selected essential oils and herbs as one of the competitive advantage group of commodity, export of which can make difference in livelihood as well as increase growth in export scenario. Value added products like essential oils and herbs extracts need some technical documents regarding their technical information and identity. Material Safety Data Sheet (MSDS) is among one which will ease the export of Nepalese essential oils in EU, US and other markets.

Natural Products Research Laboratory, Department of Plant Resources took initiative to prepare the Safety Data Sheet to support Nepalese entrepreneurs and exporters in enhancing the export of essential oil.

Mr. Yam Bahadur Thapa, Director General of Department of Plant Resources is greatly acknowledged for his tremendous support and guidance in entire work. Sincere thanks goes to Mrs. Sushma Upadhyay, Deputy Director General for her valuable inputs and technical support.

Mr. Khilendra Gurung; Himalayan Bio Trade Pvt. Ltd, Mr. Govinda Ghimire; President of Nepal Herbs and Herbal Products Association (NEHHPA), Dr. Krishna Ram Amatya; Shambhala Herbs and Aromatic Industry, Mr. Ramesh Sthapit and all stakeholders are highly appreciated for initiating, materializing and making this task fruitful. We would also like to thank entire team of Natural Products Research Laboratory for their dedication and support in laboratory work and data compilation. We sincerely believe that this document will be very helpful in exporting essential oil from Nepal.

Natural products Research Laboratory
Thapathali, Kathmandu
July, 2014

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Chapter One

1.1 Introduction:

Essential oils are one of the high value and low volume commodity exported from Nepal. Out of the total production of essential oils in Nepal only few quantities are consumed in Nepal while major portion are exported mainly to India, EU and US based markets.

For the export to EU and US based markets, Material Safety Data Sheet (MSDS) for essential oil are mandatoryrequirements. As accordance to the European Commission (EC) Legislation Directive 91/155/EEC and 2001/58/EC or OSHA: CFR 1910: 1200 (US), MSDS is essential for the entry to EU and US markets with delivered products.

MSDSis an important component of product stewardship and occupational safety and health. It is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill-handling procedures.

Obligatory 16-points information system templates for MSDS sheets are needed. But, MSDS formats may vary from source to source within a country depending on national requirements.

The technical level of information on essential oils presented by many exporters in MSDS sheets is often extremely poor; customers are reminded they have the right to demand from their suppliers a level of information which they can both understand and which is suitable for purpose. In addition to that only basic tests for some items of essential oils have been done in Nepal and limited literature based information are available to fulfill the requirements for MSDS.

Owing to these circumstances, essential oils exporters in Nepal often have to depend on buyers for conducting such obligatory tests and depend on the secondary sources for the preparation of MSDS of the respective products.

Therefore, Natural Products Research Laboratory (NPRL) at Department of Plant Resources (DPR) in consultation with essential oils exporters took the initiative to develop MSDS template which the exporterscan use with their information during delivery of products to their destinations.

1.2. International requirements:

1.2.1 Canada

In Canada, Workplace Hazardous Materials Information System (WHMIS) establishes the requirements for MSDS's in workplaces and is administered federally by Health Canada under the Hazardous Products Act, Part II, and the Controlled Products Regulations. WHMIS and MSDS requirements are also enforced by provincial Ministries or Departments of Labor.

1.2.2 European Union

Safety Data Sheets (SDS) has been made an integral part of the system of Regulation (EC) No 1907/2006 (REACH). The original requirements of REACH for SDS have been further adapted to take into account the rules for safety data sheets of the Global Harmonized System (GHS) and the implementation of other elements of the GHS into EU legislation that were introduced by Regulation (EC) No 1272/2008 (CLP) via an update to Annex II of REACH.

The SDS follows a 16 section format which is internationally agreed and for substances especially, the SDS should be followed with an Annex which contains the exposure scenarios of this particular substance. The SDS must be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise (Article 31(5) of REACH).

The European Chemicals Agency (ECHA) has published a guidance document on the compilation of safety data sheets.

1.2.3 United Nations

The United Nations (UN) defines certain details used in SDSs such as the UN numbers used to identify some hazardous materials in a standard form while in international transit.

1.2.4 United States

In the United States, the Occupational Safety and Health Administration (OSHA) requires that MSDS be available to employees for potentially harmful substances handled in the workplace under the Hazard Communication regulation. The MSDS is also required to be made available to local fire departments and local and state emergency planning officials under Section 311 of the Emergency Planning and Community Right-to-Know Act. The American Chemical Society defines Chemical Abstracts Service Registry Numbers (CAS numbers) which provide a unique number for each chemical and are also used internationally in MSDS

CHAPTER TWO

2.1 Material Safety Data Sheet (MSDS) of Chamomile Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Chamomile Essential Oil
Botanical Name: *Matricaria chamomilla* L
Synonym: *Matricaria recutita* L
Other Name: Blue chamomile oil
Australian AICS Name: Oils, chamomile, German
USA INCI Name: Chamomilla Recutita [Matricaria] Flower Extract
EU INCI Name: Chamomilla Recutita Flower Extract

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS classification]

Xn: Harmful
R52/53: Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.
R65: Harmful, may cause lung damage if swallowed.

Section 3: Composition and Information on Ingredients

CAS No.: 84082 – 60 – 0 [TSCA; EU] & 8002 – 66 – 2 [AICS].
EINECS No.: 282-006-5
FEMA: 2275
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: trans-β-Farnesene, Germacrene-D, α- Farnesene, Bisabolol oxide A, Chamazulene
Country of Origin: Nepal

Section 4: First Aid Measures

1. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
2. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
3. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
4. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
5. Advice to Doctor: Treat symptomatically; note the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Dark blue;
pH: Not Available;
Odour: Characteristic;
Specific Gravity: 0.9035 at 25˚C;
Refractive Index: Not Available;
Optical Rotation: Not Available;
Ester Value: 9.2
Ester Value after Acetylation: 68.4
Flash Point: 99˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Flammability: Not Available;
Vapour Pressure: To Analyse;
Vapour Density: To Analyse;
Ionicity (in Water): To Analyse;
Solubility: Soluble in vegetable oils;
Solubility in Water: Insoluble.

Section 10: Stability and Reactivity

Stability: Chemically stable, hazardous material.
Conditions of Instability: Not Established.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: : Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1169.
UN Proper Shipping Name: Not Allocated.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: Class 3.
Rail: Not Allocated.
Sea: IMDG 3.
Air: IATA 3.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Harmful
Symbols: Xn
RISK PHRASES:
R22: Harmful if swallowed.
R10: Flammable.
R43: May cause sensitisation by skin contact.
R51/53: Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
R65: Harmful: may cause lung damage if swallowed.
SAFETY PHRASES:
S24: Avoid contact with skin.
S37: Wear suitable gloves.
S61: Avoid release to the environment. Refer to special instructions/safety data sheets.
S62: If swallowed, do not induce vomiting: seek medical advice immediately and show container or label.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent).
Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....
Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature:_____

2.2 Material Safety Data Sheet (MSDS) of Citronella Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Citronella Essential Oil
Common Name: Citronella oil (Java type)
Botanical Name: *Cymbopogon winterianus* Jowitt
Synonym: Not Available
Other Name: Not Available
Australian AICS Name: Oils, Citronella extract
USA INCI Name: Cymbopogon Nardus Oil
EU INCI Name: Cymbopogon Nardus Oil

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Class C1 Combustible Liquid
NOT A SUSMP Schedule Poison

Product is classified as hazardous according to Schedules 1 to 6 of the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 of the HSNO Act, 1996.
HSNO Classifications: 3.1C, 6.1E, 6.3B
Signal word: WARNING
Hazard Statements:
H226 Flammable liquid and vapour
H305 May be harmful if swallowed and enters airways
H316 Causes mild skin irritation

According to GHS Classification:

Section 3: Composition and Information on Ingredients

CAS No.: 8000 – 29 – 1
EINECS No.: 289-735-6
FEMA: 2308
NAFTA: 3301.29.6000
REACH Registration No.: Not Available
% by Weight: 100
Contents: z-Citral, Geraniol, E-Citral, Citronellol, Citronellal
Country of Origin: Nepal

Section 4: First Aid Measures

6. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
7. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
8. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.

9. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
10. Advice to Doctor: Treat symptomatically; note the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Pale yellow;
pH: To Analyse;
Odour: Characteristic of lemon;
Specific Gravity: 0.8954 at 25˚C;
Refractive Index: 1.477 at 25˚C;
Optical Rotation: -1.38 at 25˚C;
Ester Value: 33.3;
Ester Value after Acetylation: 157.8;
Flash Point: 79˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water.

Section 10: Stability and Reactivity

Stability: Chemically stable, hazardous material.
Instability Temperature: Not Available.
Conditions of Instability: Not Available.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Available.
Acute Dermal Toxicity (LD50): Not Available.
Acute Inhalation Toxicity (LC50): Not Available.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Available.
Long Term Toxicity: Not Available
Exposure Limits: Not Established.
Human Exposure Tests: Not Available.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14:Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1993.
UN Proper Shipping Name: Flammable liquid, n.o.s (contains Naphtha Petroleum).
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: ADR/RID: 9.
Sea: IMDG 9.
Rail: Not Available.
Air: IATA 3.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
DSCL (EEC):

R38: Irritating to skin
R41: Risk of serious damage to eyes

HMIS (USA):

Health Hazard: 2
Fire Hazard: 2
Reactivity: 0
Personal Protection: h

Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Informationtion

Sources: Australian Code for the Transport of Dangerous Goods; The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: …….
Last Updated: ……
Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.3 Material Safety Data Sheet (MSDS) of French Basil Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Basil Essential Oil
Common Name: French basil oil
Botanical Name: *Ocimum basilicum* L
Synonym: Not Available
Other Name: Sweet basil oil
Australian AICS Name: Oils, Basil
USA INCI Name: Ocimum Basilicum [basil] Oil
EU INCI Name: Ocimum Basilicum Oil

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS classification]

Flammable: Combustible liquid, produces oxides of carbon when burning.
Others: None Identified.

Section 3: Composition and Information on Ingredients

CAS No.: 8015 – 73 – 4
EINECS No.: 283-900-8
FEMA: 2119
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: Methyl chavicol, Linalool, Geraniol, α-Bergamotene, 1,8-Cineole, Eugenol, T-Cadinol
Country of Origin: Nepal

Section 4: First Aid Measures

11. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
12. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
13. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
14. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
15. Advice to Doctor: Treat symptomatically; note the nature of this product

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.

Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine need to evacuate or isolate the area according to your local emergency plan.

Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.

Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Light yellow;
pH: Not Available;
Odour: Basil;
Specific Gravity: 0.8854 at 25˚C;
Refractive Index: 1.469 at25˚C;
Optical Rotation: -13.53 at 25˚C;
Ester Value: 9.1;
Ester Value after Acetylation: 80.7;
Flash Point: 93˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water

Section 10: Stability and Reactivity

Stability: Chemically stable, hazardous material.
Conditions of Instability: Not Established.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: Ecological InformationI

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1169.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: Class 3.
Rail: Not Allocated.
Sea: IMDG 3.
Air: IATA 3.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Harmful
Symbols: Xn
Risk Phrases: R22: Harmful if swallowed
Safety Phrases: S46: If swallowed, seek medical attention immediately and show this data sheet.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....
Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.4 Material Safety Data Sheet (MSDS) of Jatamansi Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Spikenard Essential Oil
Common Name: Jatamansi oil
Botanical Name: *Nardostachys grandiflora* DC
Synonym: *Nardostachys jatamansi* (D.Don) DC
Other Name: Spikenard Oil
Australian AICS Name: Nardostachys Jatamansi, extract;
USA INCI Name: Nardostachys Jatamansi Rhizome/Root Extract;
EU INCI Name: Nardostachys Jatamansi Rhizome/Root Extract.

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to the Regulation (EC) No 1272/2008:
Aspiration hazard, Hazard Category 1.
Class: C1 Combustible Liquid
NOT A SUSMP Scheduled Poison
Classification according to the Directive 67/548/EEC:
Hazard Symbols:
Xn: Harmful
Risk Phrases:
R65: Harmful: may cause lung damage if swallowed

Section 3: Composition and Information on Ingredients

CAS No.: 90064-28-1
EINECS No.: 290-089-4
FEMA: 3033
NAFTA: 3301.29.6000
REACH Registration No.: Not Available
% by Weight: 100
Contents: Spirojatamol, Valeranone, 3,7-Guaidiene, β-Gurjunene, β-Guaiene, Valerenal, Calerene
Country of Origin: Nepal

Section 4: First Aid Measures

16. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
17. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
18. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
19. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
20. Advice to Doctor: Treat symptomatically, not the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Carbon Monoxide, Carbon Dioxide.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.
aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9 **:** Exposure Controls/Personal Protection

Physical State and Appearance: Liquid;
Colour: Greenish, Pale yellow to amber;
pH: Not Available;
Odour: Characteristic earthy pleasant woody odour;
Specific Gravity: 0.9494 at 25˚C;
Refractive Index: 1.509 at 25˚C;
Optical Rotation: 1.77 at 25˚C ;
Ester Value: 35.8;
Ester Value after Acetylation: 17.1;
Flash Point: 83˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water, soluble in ethyl alcohol.

Section 10**:** Stability and Reactivity

Stability: Chemically stable, hazardous material. This material presents no significant reactivity hazard.
Instability Temperature: Not Available.
Conditions of Instability: Not Available.

Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Do not allow the material to enter streams, sewers or other waterways.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1169.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.

Road: Class 3.
Rail: Not Allocated.
Sea: IMDG 3.
Air: IATA 3.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Hazardous Material Identification System (HMIS):

Health Hazard: * 2.
Fire Hazard: 1.
Reactivity: 0.
Personal Protection: B.

Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: Australian Code for the Transport of Dangerous Goods; The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.5 Material Safety Data Sheet (MSDS) of Juniper Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Juniper Essential Oil
Common Name: Juniper Oil
Botanical Name: *Juniperus indica* Bertol
Synonym: Not Available
Other Name: Not Available
Australian AICS Name: Not Allocated
USA INCI Name: Not Allocated
EU INCI Name: Not Allocated

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS classification]

Flammable: Combustible liquid.
Others: None Identified.


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Section 3: Composition and Information on Ingredients

CAS No.: 8002 – 68 – 4
EINECS No.: Not Available
FEMA: 2848
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: α-Pinene, Myrcene, δ-3-Carene, Limonene, δ-Cadinene
Country of Origin: Nepal

Section 4: First Aid Measures

21. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
22. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
23. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
24. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
25. Advice to Doctor: Treat symptomatically; note the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.

Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Water white;
pH: Not Available;
Odour: Characteristic;
Specific Gravity: 0.8664 at 25˚C;
Refractive Index: 1.478 at 25˚C;
Optical Rotation: 6.03 at 25˚C;
Flash Point: 41˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Ester Value: 5.5;
Ester Value after Acetylation: 7.6;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Soluble in ethyl alcohol;
Solubility in Water: Insoluble.

Section 10 : Stability and Reactivity

Stability: Chemically stable, hazardous material.
Conditions of Instability: Not Established.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11 : Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12 : Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13 : Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14 : Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 2319.
Proper Shipping Name: Terpene hydrocarbons, n.o.s. Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: Class 3.
Rail: Not Allocated.
Sea: IMDG 3.
Air: IATA 3.

Section 15 : Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Flammable and Hazardous to Environment.
Symbols: Xn, Xi, N and F.
HMIS: Health: 1; Flammability: 2; Reactivity: 0; Personal Protection: B.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 15 : Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.6 Material Safety Data Sheet (MSDS) of Lemongrass Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Lemongrass Essential Oil;
Common Name: Lemongrass oil;
Botanical Name: *Cymbopogon flexuosus* (Nees ex Steud.) W.Watson;
Synonym: Not Available;
Other Name: Not Available;
Australian AICS Name: Oils, Cymbopogon;
USA INCI Name: Cymbopogon Flexuosus Oil;
EU INCI Name: Cymbopogon Flexuosus Oil.

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to the Regulation (EC) No 1272/2008:
Skin corrosion/irritation, Hazard Category 2; Sensitisation — Skin, Hazard Category 1; Serious eye damage/ eye irritation, Hazard Category 1; Hazardous to the aquatic environment — long-term hazard, category chronic 2.

Classification according to the Directive 67/548/EEC:
Hazard Symbols:
Xi: Irritant
N: Dangerous for the environment

Risk Phrases:
R36/38 Irritating to eyes and skin;
R43 May cause sensitisation by skin contact;
R51/53 Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Section 3: Composition and Information on Ingredients

CAS No.: 8007-02-1 [AICS], 91844-92-7 [TSCA; EU]
EINECS No.: 289-754-1 [295-161-9]
FEMA: 2624
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: Neral, Geranial, Geraniol, Citral
Country of Origin: Nepal

Section 4: First Aid Measures

26. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
27. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
28. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.

4. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water or milk slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give liquid or anything else to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
5. Advice to Doctor: Treat symptomatically, not the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature. Do not use direct water jet.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6 : Accidental Release Measures

Small Spill: Absorb with an inert material such as sand and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7 : Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8 : Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist before handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9 : Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Pale Yellow;
pH: Not Available;
Odour: Characteristic intense sweet woody odour with flowery odour;
Specific Gravity: 0.8894 at 25˚C;
Refractive Index: 1.4585 at 25˚C;
Optical Rotation: -0.99 at 25˚C;
Flash Point: 70˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Ester Value: 55.0;
Ester Value after Acetylation: 101.6;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water, soluble in oil and alcohol.

Section 10 : Stability and Reactivity

Stability: Chemically stable, hazardous material. This material presents no significant reactivity hazard.
Conditions of Instability: Not Available.
Polymerization: Will not occur.

Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11 : Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Available.
Acute Dermal Toxicity (LD50): Not Available.
Acute Inhalation Toxicity (LC50): Not Available.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Available.
Long Term Toxicity: Not Available
Exposure Limits: Not Established.
Human Exposure Tests: Not Available.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12 : Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Do not allow the material to enter streams, sewers or other waterways.

Section 13 : Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well and do not reuse empty containers.

Section 14 : Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: UN3082.
UN Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Contains Cymbopogon flexuosus, oil).

Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: ADR Class 9.
Sea: IMDG Class 9.
Rail: Not Allocated.
Air: IATA Class 9.

Section 15 : Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Flammable.
Symbols: Xi and N.
Risk Phrases:
R36/38 Irritating to eyes and skin;
R43 May cause sensitisation by skin contact;
R51/53 Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.
Hazardous Material Identification System (HMIS):

Health Hazard: * 2.
Fire Hazard: 1.
Reactivity: 0.
Personal Protection: B.

Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16 : Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.7 Material Safety Data Sheet (MSDS) of Mentha Arvensis Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Mentha Arvensis Essential Oil;
Common Name: Mentha Arvesnsis Oil;
Botanical Name: *Mentha arvensis* L.
Synonym: Not Available;
Other Name: Cornmint Oil; Japanese Mint Oil; Oil of Mentha Arvensis;
Australian AICS Name: Oils, Mint, Mentha arvensis piperascens
USA INCI Name: Mentha Arvensis Leaf Oil
EU INCI Name: Mentha Arvensis Leaf Oil

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to the Regulation (EC) No 1272/2008:
Skin corrosion/irritation, Hazard Category 2; Sensitisation — Skin, Hazard Category 1; Serious eye damage/ eye irritation, Hazard Category 1; Hazardous to the aquatic environment — long-term hazard, category chronic 2.

Classification according to the Directive 67/548/EEC:
Hazard Symbols:
Xi: Irritant
N: Dangerous for the environment

Risk Phrases:
R36/38 Irritating to eyes and skin;
R43 May cause sensitisation by skin contact;
R51/53 Toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Section 3: Composition and Information on Ingredients

CAS No.: 68917-18-0
EINECS No.: 90063-97-1
FEMA: Not Available
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: Menthol, p-Menthone, iso-Menthone
Country of Origin: Nepal

Section 4: First Aid Measures

31. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
32. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
33. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.

34. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water or milk slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give liquid or anything else to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.

35. Advice to Doctor: Treat symptomatically, not the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.

Fire Hazards in Presence of Various Substances: Not Available.

Special Remarks on Fire Hazards: Not Identified.

Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.

Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature. Do not use direct water jet.

Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.

Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material such as sand and put the spilled material in an appropriate waste disposal.

Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.

Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.

Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.

Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.

Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Apply good manufacturing practice. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenoli

can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist before handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Mobile liquid;
Colour: Colourless; pale yellow to yellow green
pH: Not Available;
Odour: Characteristics minty odour
Specific Gravity: 0.8987 at 25˚C;
Refractive Index: 1.458 at 25˚C;
Optical Rotation: -34.71 at 25˚C;
Flash Point: 65°C;
Boiling Point: Not Available;
Melting Point: Not Available;
Acid Value: 0.2;
Ester Value: 10.9;
Ester Value after Acetylation: 132.7;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water, soluble in oil and alcohol.

Section 10: Exposure Controls/Personal Protection

Stability: Chemically stable, hazardous material. This material presents no significant reactivity hazard.
Conditions of Instability: Not Available.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Available.
Acute Dermal Toxicity (LD50): Not Available.
Acute Inhalation Toxicity (LC50): Not Available.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Available.
Long Term Toxicity: Not Available
Exposure Limits: Not Established.
Human Exposure Tests: Not Available.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: None sensitizing.

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Do not allow the material to enter streams, sewers or other waterways

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well and do not reuse empty containers.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 3082.

UN Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (Contains Mentha Arvensis oil).
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: ADR Class 9.
Sea: IMDG Class 9.
Rail: Not Allocated.
Air: IATA Class 9.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Irritant; Dangerous for the environment.
Symbols: Xi; N
Risk Phrases:
R36/38 Irritating to eyes and skin;
R43 May cause sensitisation by skin contact;
R51/53 Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
Safety Phrases:
S24 Avoid contact with skin;
S37 Wear suitable gloves;
S61 Avoid release to the environment.
Hazardous Material Identification System (HMIS):

Health Hazard: * 2.
Fire Hazard: 1.
Reactivity: 0.
Personal Protection: B.

Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....
Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.8 Material Safety Data Sheet (MSDS) of Palmarosa Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Palmorosa Essential Oil
Common Name: Palmarosa oil
Botanical Name: *Cymbopogon martini* (Roxb.) W.Watson
Synonym: *Andropogon martinii*
Other Name: Not Available
Australian AICS Name: Oil, Palmorosa
USA INCI Name: Cymbopogon Martini Oil
EU INCI Name: Cymbopogon Martini Oil

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS classification]
Hazard Category
H315: Causes Skin Irritation
H317: May Cause an Allergic Skin Reaction
H318: Cause Serious Eye Damage
H401: Toxic to Aquatic Life
H412: Harmful to Aquatic Life with Long Lasting Effects

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
R38: Irritating to Skin
R41: Risk of Serious Damage to Eyes
R43: May Cause Sensitisation by Skin Contact
R52/53: Harmful to Aquatic Organisms, may cause long-term adverse effects in the aquatic environment.

Section 3: Composition and Information on Ingredients

CAS No.: 8014 – 19 – 5 [TSCA; AICS] & 84649 – 81 – 0
EINECS No.: 283-461-2
FEMA: 2831
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: Geraniol, Geranyl acetate, Linalool, Citronellol
Country of Origin: Nepal

Section 4: First Aid Measures

36. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
37. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
38. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
39. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an

unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.

40. Advice to Doctor: Treat symptomatically; note the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.

Fire Hazards in Presence of Various Substances: Not Available.

Special Remarks on Fire Hazards: None Identified.

Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.

Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.

Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.

Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.

Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.

Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.

Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.

Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Apply good manufacturing practice. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.

Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist before handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Pale yellow;
pH: Not Available;
Odour: Characteristic of floural;
Specific Gravity: 0.8883 at 25˚C;
Refractive Index: 1.474 at 25˚C;
Optical Rotation: 0.07 at 25˚C;
Flash Point: 101˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Flammability: Not Available;
Ester Value: 56.9;
Ester Value after Acetylation: 232.5;
Flash Point: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water.

Section 10: Exposure Controls/Personal Protection

Stability: Chemically stable, hazardous material.
Conditions of Instability: Not Established.
Polymerization: Will not occur.

Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well and do not reuse empty containers.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1169.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: Class 3.

Rail: Not Allocated.
Air: IATA 3.
Sea: IMGD 3

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Safety Directions:
Avoid contact with eyes.
Wear eye protection when mixing or using.
Avoid contact with skin.
Wear protective gloves when mixing or using.
Wash hands after use.
No smoking.
Store under cover in a dry, clean, cool, well ventilated place away from sunlight.
Keep away from heat, sparks and naked flames.
Avoid contact with food.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.9 Material Safety Data Sheet (MSDS) of Wintergreen Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Wintergreen Essential Oil
Common Name: Wintergreen Oil
Botanical Name: *Gaultheria fragrantissima* Wall
Synonym: Not Available
Other Name: Not Available
Australian AICS Name: Oils, Wintergreen
INCI Name: Gaultheria fragrantissima Wall (wintergreen) leaf oil

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to the Regulation (EC) No 1272/2008:
Aspiration hazard, Hazard Category 1.
Classification according to the Directive 67/548/EEC:
Hazard Symbols:
Xn: Harmful

Risk Phrases:
R22 Harmful if swallowed;
R36 Irritating to eyes;
R66 Repeated exposure may cause skin dryness or cracking.

Section 3: Composition and Information on Ingredients

CAS No.: 68917-75-9
EINECS No.: 289-888-0
FEMA: 3113
NAFTA: 3301.29.6000
REACH Registration No.: 05-2114688787-27-0000
% by Weight: 100
Contents: Methyl salicylate, δ-3-Carene, Limonene
Country of Origin: Nepal

Section 4: First Aid Measures

41. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
42. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
43. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
44. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water or milk slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give liquid or anything else to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
45. Advice to Doctor: Treat symptomatically, not the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.
Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature. Do not use direct water jet.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour and spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.
Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist before handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Pink to red;
pH: Not Available;
Odour: Characteristic intense sweet woody odour with flowery odour;
Specific Gravity: 1.1829 at 25˚C;
Refractive Index: 1.536 at 25˚C;
Optical Rotation: Not Available;
Boiling Point: Not Available;
Melting Point: Not Available;
Acid Value: 2.7;
Ester Value: 278.9;
Ester Value after Acetylation: 331.1;
Flash Point: 95˚C ;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Insoluble in water, soluble in oil and alcohol.

Section 10: Exposure Controls/Personal Protection

Stability: Chemically stable, hazardous material. This material presents no significant reactivity hazard.
Conditions of Instability: Not Available.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Conditions to Avoid: Avoid sparks, flame and excessive heat.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Available.
Acute Dermal Toxicity (LD50): Not Available.
Acute Inhalation Toxicity (LC50): Not Available.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Available.
Long Term Toxicity: Not Available
Exposure Limits: Not Established.
Human Exposure Tests: Not Available.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified.

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Do not allow the material to enter streams, sewers or other waterways.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well and do not reuse empty containers.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: UN1169.
UN Proper Shipping Name: Extracts, Aromatic, Liquid.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: ADR/RID: 3.2.
Sea: IMDG 3.
Rail: Not Allocated.
Air: IATA 3.

Section 15: Regulatory Information

R22 : Harmful if swallowed
R36 : Irritating to eyes
Symbols: Xn, Xi and F.
Hazardous Material Identification System (HMIS):
Health Hazard: * 2.
Fire Hazard: 1.
Reactivity: 0.
Personal Protection: B.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

Disclaimer:
The information in this safety data sheet is correct to the best of our knowledge. We do not accept liability for loss, injury or damage that may result from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.
Please ensure that this safety data sheet is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Shipper:
Signature: _____

2.10 Material Safety Data Sheet (MSDS) of Zanthoxylum Essential Oil

Section 1: Product and Responsible Organization Identification

Product Name: Zanthoxylum Essential Oil
Common Name: Zanthoxylum oil
Botanical Name: *Zanthoxylum armatum* DC
Synonym: *Zanthoxylum alatum* Roxb.
Other Name: Not Available;
Australian AICS Name: Prickly ash, extracts;
USA INCI Name: Zanthoxylum Alatum Fruit Extract;
EU INCI Name: Zanthoxylum Alatum Fruit Extract.

Contact Information:
Manufacturer/Supplier:
Street address/PO Box:
Place/Country:
Tel:
Emergency Tel:
E-mail:

Section 2: Hazards Identification

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS classification]

Flammable: Combustible liquid, produces oxides of carbon when burning.
Others: None Identified.

F


Xn, XI

Section 3: Composition and Information on Ingredients

CAS No.: 91770 – 90 – 0
EINECS No.: 294-877-9
FEMA: Not Available
NAFTA: Not Available
REACH Registration No.: Not Available
% by Weight: 100
Contents: Linalool, δ-Limonene, Methyl cinnamate, trans-Linalool oxide
Country of Origin: Nepal

Section 4: First Aid Measures

46. Eye Contact: Do not try to remove any contact lenses unless trained and immediately flush affected eye with plenty of water for at least 15 minutes ensuring irrigation under eyelids and get medical attention.
47. Skin Contact: Remove contaminated clothing and shoes. Wash clothes and shoes before reuse. Immediately flush skin with plenty of water and soap for 15 minutes and get medical attention.
48. Inhalation: Try to get fresh air as quickly as possible, if not breathing give artificial respiration, if breathing is difficult provide oxygen and get medical attention.
49. Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Drink water slowly as much as casualty can comfortably drink in conscious state to dilute. Never give anything by mouth to an unconscious person. Never give anything to a person showing signs of reduced awareness or is being slowly unconscious. Contact physician or local poison centre immediately. If vomiting occurs, lean patient forward to maintain open airway and prevent aspiration.
50. Advice to Doctor: Treat symptomatically; note the nature of this product.

Section 5: Fire Fighting Measures

Products of Combustion: Oxides of carbon.
Fire Hazards in Presence of Various Substances: Not Available.

Special Remarks on Fire Hazards: None Identified.
Protective Equipment: Self-contained breathing apparatus and protective clothing should be worn when fighting fires involving essential oils or chemicals.
Extinguishing Media: Carbon Dioxide, dry chemical or foam. Closed containers may build up pressure at elevated temperature.
Special Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan.
Unsuitable Extinguishing Products: Water Spray; Others not established.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill: Keep away this combustible material from heat and source of ignition. Stop the leak if it can be done without risk. Finish cleaning by spreading water on the contaminated surface and allow evacuating through the sanitary system.
Personal Protection: Use of self-contained breathing apparatus is recommended for any major chemical spill. Refer also to section 8.
Safety Precautions: Eliminate all ignition sources. Ventilate the area. Determine the need to evacuate or isolate the area according to your local emergency plan.
Environmental Protection: Keep away from drains, surface and ground water. Report spills to appropriate Authorities if required.
Methods of Cleaning/Disposal: Contain spill and recover free product. Absorb remainder on vermiculite or other suitable absorbent material. Wipe small spills with cloth. Clean with hot water and detergent. Refer also to Section 13 for disposal procedures.

Section 7: Handling and Storage

Handling and Precautions: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. Wear suitable protective clothing and maintain good personal hygiene practices. Wash hand after any contact with the container. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Keep in a cool, well-ventilated area protected from light and extreme heat. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition. Store in stainless steel drums or aluminium containers or HDPE containers. For short term storage only steel drums lined with epoxy phenolic can be used.
Specific Procedures: Protect against electrostatic charges, Others not established.

Section 8: Exposure Controls/Personal Protection

Exposure Limits: There is a blanket recommendation of 10 mg/m3 for inspirable dusts or mists when limits have not otherwise been established.
Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours 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. Vapour respirator. Be sure to use an approved/certified respirator or equivalent. Use gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapour respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product in case of large spill.
Respiratory Protection: None generally required. Used approved/certified respirator in confined areas or if ventilation is inadequate.
Hand Protection: Use of chemical resistant gloves is recommended.
Eye Protection: Use of goggles or face shield is recommended.
Protective Clothing and Equipment: Use of chemical resistance clothing is recommended along with eyewash fountain and safety shower in the working area.
Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol / spray applications may require additional precautions.

Section 9: Physical and Chemical Properties

Physical State and Appearance: Liquid;
Colour: Pale yellow;
pH: Not Available;
Odour: Characteristic;
Specific Gravity: 0.8750 at 25˚C;
Refractive Index: 1.469 at 25˚C;
Optical Rotation: 8.67 at 25˚C;
Boiling Point: Not Available;
Melting Point: Not Available;
Ester Value: 25.7;
Ester Value after Acetylation: 89.6;
Flash Point: 51˚C;
Flammability: Not Available;
Vapour Pressure: Not Available;
Vapour Density: Not Available;
Ionicity (in Water): Not Available;
Solubility: Soluble in ethyl alcohol;
Solubility in Water: Insoluble.

Section 10: Stability and Reactivity

Stability: Chemically stable, hazardous material.
Conditions of Instability: Not Established.
Polymerization: Will not occur.
Flammability: Combustible Liquid.
Special remarks on Corrosivity: Not Available.
Special remarks on Reactivity: Not Available.
Hazardous Combustion or Decomposition Products: Carbon monoxide and unidentified organic compounds may be formed during combustion.
Materials to Avoid: Strong acids, strong alkalis and oxidizing agents.

Section 11: Toxicological Information

Routes of Entry: Eye contact, inhalation, ingestion and skin contact.
Acute Oral Toxicity (LD50): Not Identified.
Acute Dermal Toxicity (LD50): Not Identified.
Acute Inhalation Toxicity (LC50): Not Identified.
Chronic Effects: Not Identified.
Short Term Toxicity: Not Identified.
Long Term Toxicity: Not Identified
Exposure Limits: Not Identified.
Human Exposure Tests: Not Identified.
Mutagenic Effects: Not Identified.
Reproductive Effects: Not Identified.
Sensitisation: Not Identified

Section 12: Ecological Information

Eco-toxicity: Not established, avoid pollution to soil and water bodies.
Mobility: Low mobility in soil.
Bio-accumulative Potential: Not Established.
Special Remarks on the Products of Biodegradation: Low persistent level and readily biodegradable.
Bio-accumulative Potential: Not Established.
Other Adverse Effects: Not Established.

Section 13: Disposal Considerations

Waste Disposal: Place material or absorbent into sealed containers and dispose of in accordance with current applicable laws and regulations. Do not use empty containers.
Contaminated Packaging: Dispose of in accordance with current applicable laws and regulations. Refer to local authority advice.
Empty Container Disposal: Empty containers can have residues, gases and mists. Use the proper Waste Disposal Methods and Procedures for Empty Containers as well.

Section 14: Transport Information

Transportation: No special transport required. Not to be transported with Explosives, Flammable Gases (when individual container exceed 500 litres), Toxic Gases, spontaneously Combustible Substances, Oxidising Agents, Organic Peroxides, Radioactive Substances and Foodstuffs.
UN Number: 1993.
Proper Shipping Name: Flammable liquid.
Environmental Hazards: This is an environmentally hazardous substance.
Packing Group: III.
Road: Class 3.
Rail: Not Allocated.
Sea: IMDG 3.
Air: IATA 3.

Section 15: Regulatory Information

Federal and State Regulations: Not Available
Other Regulations: Not Available.
Hazards: Flammable.
Symbols: Xn, Xi and F.
Protective Equipment: Gloves, Lab Coat, Vapour respirator (Use approved/certified respirator or equivalent). Wear appropriate respirator when ventilation is inadequate and use Splash Goggles.

Section 16: Other Information

Sources: The International Cosmetic Ingredient Dictionary and Handbook; IATA Dangerous Goods Regulations, HMIS Standard.
Other Special Considerations: Not Available.
Created: .....
Last Updated: .....

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Signature: _____

References

1. United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) http://www.unece.org/trans/danger/publi/ghs/ghs_rev04/04files_e.html

2. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, corrected version in OJ L136, 29.5.2007, p.3).

3.http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html

4. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p.1)

5. Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (O.J. L133 31.05.2010, p1-43)

6. http://guidance.echa.europa.eu/exposure_scenarios_en.htm

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