## 01. IDENTIFICATION OF THE SUBSTANCE/PREPARATION & THE COMPANY/UNDERTAKING

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| **1.1** | **Product Identifier** |
| Product Name | Lemon Oil.  |
| Biological Definition | Citrus Limon Peel Oil is the volatile oil obtained by cold compression of the fresh peel of the Lemon, *Citrus limon (L.), Rutaceae.*  |
| INCI Name | Citrus Limon Peel Oil. |
| Synonyms & Trade Names | - |
| CAS-No | 8008-56-8 / 84929-31-7 | EC No. | - / 284-515-8 | EINECS No. | - / 284-515-8 |
| **1.2** | **Relative identified uses of the substance or mixture and uses advised against** |
|  | Suitable for Flavours, Fragrances, Cosmetics and Professional use only. Use in accordance with good manufacturing and industrial hygiene practices. Not for personal use in this concentration.  |

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| **1.3** | **Details of the supplier of the safety data sheet** |
| Bomar Ltd, Sea Road, Kilcoole, Co. Wicklow, Ireland |
| 1.4 **Emergency Telephone number** | +353 (0)1 2875110 |

## 02. HAZARDS IDENTIFICATION

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| **2.1** | **Classification of the substance or mixture** |
|  | The full text for all hazard statements are displayed in Section 16. |
| Classification (EC 1272/2008) |
|  | Physical hazards: Flam Liq. 3 – H226Health hazards: Asp. Tox. 1 - H304, Skin Irrit. 2 - H315, Skin Sens. 1 - H317Environmental hazards: Aquatic Chronic 2 - H411\*See section 16 for other Information on product information. |
| **2.2** | **Label Elements** |
| Label in accordance with (EC) No 1272/2008  |
|  |  GHS02 GHS08 GHS07 GHS09 flamme C:\SharedDrive\Callum\Images & Logo\download.png   |
| Signal Word | Danger. |
| Contains | d-Limonene, beta-Pinene, alpha-Pinene, Myrcene  |
| Hazard Statements |
|  | H226 Flammable liquid and vapour.H304 May be fatal if swallowed and enters airways.H315 Causes skin irritation.H317 May cause an allergic skin reaction.H411 Toxic to aquatic life with long lasting effects. |
| Precautionary Statements |
|  | P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 Use explosion-proof electrical/ventilating/lighting/equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges.P261 Avoid breathing vapours/spray. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protectionP301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P302+P352 IF ON SKIN: Wash with plenty of water. P303+P361+P353 IF ON SKIN (or hair) Take off immediately all contaminated clothing. Rinse skin with water. P331 Do NOT induce vomiting. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P370+P378 In case of fire Use water spray, dry powder or carbon dioxide to extinguish. P362+P364 Take off contaminated clothing. And wash it before reuse. P391 Collect spillage. P501 Dispose of contents in accordance with local, state or national legislation.  |
| Supplementary Precautionary Statements |
|  | P264 Wash hands and exposed skin thoroughly after handling.  |
| **2.3** | **Other Hazards** |
| PBT or vPvB according to Annex XIII | This substance is not PBT / vPvB. |
| Adverse physio-chemical properties | No additional data available.  |
| Adverse effects on human health | Due to the presence of furocoumarins, the product may have phototoxic effects (Skin). |

##### 03. COMPOSITION/INFORMATION ON INGREDIENTS

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| **3.1** | **Substances** |
|  | **≤ 70.0% d-Limonene** CAS No: 5989-27-5 EC No: 227-813-5Classification (EC 1272/2008) Flam. Liq. 3 - H226, Asp. Tox. 1 - H304, Skin Irrit. 2 - H315, Skin Sens. 1 - H317, Aquatic Acute 1 - H400, Aquatic Chronic 1 - H410 |
|  | **≤ 17.0% beta-Pinene** CAS No: 127-91-3 EC No: 204-872-5Classification (EC 1272/2008) Flam. Liq. 3 - H226, Asp. Tox. 1 - H304, Skin Irrit. 2 - H315, Skin Sens. 1 - H317, Aquatic Acute 1 - H400, Aquatic Chronic 1 - H410 |
|  | **≤ 12.5% gamma-Terpinene** CAS No: 99-85-4 EC No: 202-794-6Classification (EC 1272/2008) Flam. Liq. 3 – H226, Repr. 2 - H361, Aquatic Chronic 2 - H411 |
|  | **≤ 3.5% alpha-Pinene** CAS No: 80-56-8 EC No: 201-291-9Classification (EC 1272/2008) Flam. Liq. 3 - H226, Acute Tox. 4 - H302, Asp. Tox. 1 - H304, Skin Irrit. 2 - H315, Skin Sens. 1 - H317, Aquatic Acute 1 - H400, Aquatic Chronic 1 - H410 |
|  | **≤ 2.5% Citral** CAS No:5392-40-5 EC No: 226-394-6Classification (EC 1272/2008) Skin Irrit. 2 - H315, Skin Sens. 1B - H317, Eye Irrit. 2 – H319  |
|  | **≤ 3.0% Myrcene (7-methyl-3-methyleneocta-1,6-diene)**  CAS No: 123-35-3 EC No: 204-622-5Classification (EC 1272/2008) Flam. Liq. 3 - H226, Asp. Tox. 1 - H304, Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Aquatic Acute 1 - H400, Aquatic Chronic 2 - H411 |

##### 04. FIRST AID MEASURES

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| **4.1** | **Description of first aid measures** |
| Inhalation | Remove from exposure area to fresh air. Get medical advice/attention.  |
| Ingestion  | Do not induce vomiting. Ingestion may cause nausea and vomiting. Immediately rinse mouth and provide fresh air. Get medical advice/attention. |
| Skin Contact | Remove contaminated clothing immediately and wash skin with soap and water. Get medical advice/attention if any discomfort continues. |
| Eye Contact  | Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical advice/attention. Continue to rinse. |
| **4.2** | **Most important symptoms and effects, both acute and delayed** |
|  | No additional data available. |
| **4.3** | **Indication of any immediate medical attention and special treatment needed** |
|  | Treat symptomatically. |

##### 05. FIRE-FIGHTING MEASURES

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| **5.1** | **Extinguishing Media** |
|  | Suitable extinguishing media: carbon dioxide, dry chemical, foam.Unsuitable extinguishing media: do not use water jet as an extinguisher, as this may scatter and spread fire. |
| **5.2** | **Special hazards arising from the product** |
|  | A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health. Do not breathe in smoke.Thermal decomposition or combustion products may include the following substances:Carbon dioxide (CO2), Carbon monoxide (CO), other toxic gases.Containers close to fire should be removed or cooled with water. |
| **5.3** | **Advice for firefighters** |
|  | Avoid inhalation of generated fumes or vapours. Wear self-contained breathing apparatus and appropriate protective clothing. |

##### 06. ACCIDENTAL RELEASE MEASURES

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| **6.1** | **Personal precautions, protective equipment and emergency procedures** |
|  | Wear protective clothing as described in Section 8 of this safety data sheet. Handle the product using protective gloves resistant to the chemicals exposed. Avoid contact with skin and inhalation of its vapours. Maintain adequate ventilation in the working area after spilling. |
| **6.2** | **Environmental Precautions** |
|  | Do not discharge into drains, water courses or onto the ground. |
| **6.3** | **Methods and material for containment and cleaning up.** |
|  | Absorb with liquid binding material e.g. sand, diatomaceous earth or vermiculite. Collect in closed and suitable containers for disposal in accordance with local, state or national legislation. Prevent any material from entering drains or waterways. Wash spill site after removal with a detergent. |
| **6.4** | **Reference to other sections** |
|  | See sections 4, 7, 8 and 13.  |

##### 07. HANDLING AND STORAGE

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| **7.1** | **Precautions for safe handling** |
|  | Apply good manufacturing practice & industrial hygiene practices, ensuring proper workplace ventilation. Keep original container closed. Avoid contact with skin and eyes. Observe good personal hygiene, and do not eat, drink or smoke whilst handling. Keep away from heat, sparks and open flame. Avoid exposing to high temperatures during processing.  |
| **7.2** | **Conditions for safe storage, including any incompatibilities**  |
|  | Store in tightly-closed, original container in a dry, cool and well-ventilated area, away from potential sources of ignition and protected from light. |
| **7.3** | **Specific end use(s)** |
|  | No additional data available. |

##### 08. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| **8.1** | **Control parameters** |
|  | No additional data available. |
| **8.2** | **Exposure controls** |
| Protective Equipment |
|  |   http://f.tqn.com/y/chemistry/1/S/i/h/protectiveclothing.jpg  |
| Process Conditions | Provide eyewash station. |
| Engineering Measures | Provide adequate ventilation or respiratory protection. |
| Respiratory Equipment | Usually not required in a well-ventilated area. In confined or poorly ventilated area approved respiratory masks may be required. |
| Hand Protection | Wear suitable protective gloves that are resistant to chemical agents in accordance with standard EN374. |
| Eye Protection | Avoid contact with eyes. Wear safety goggles in accordance with standard EN166. |
| Other Protection | Wear appropriate clothing to prevent any possibility of skin contact. |
| Hygiene Measures | Good personal hygiene practices are always advisable, especially when working with chemicals / oils. |
| Personal Protection | Use of chemical resistant clothing is recommended when handling. |
| Skin Protection | Wear appropriate protective clothing to prevent skin contact. Work clothing worn by personnel should be laundered regularly. After contact with the product, all parts of the body that have been exposed must be washed thoroughly.  |
| Environmental Exposure Controls | Avoid discharging into drainage water. Only eliminate by authorised companies. |

##### 09. PHYSICAL AND CHEMICAL PROPERTIES

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| **9.1** | **Information on basic physical and chemical properties** |
| Appearance | Liquid, yellow to light greenish. |
| Colour | Yellow to light greenish.  |
| Odour | Characteristic. |
| Relative Density | Approx. 0.853 @ 20°C |
| Flash Point (°C) | > 49.0  |
| Refractive Index | Approx. 1.475 @ 20°C |
| Melting Point (°C) | No additional data available. |
| Boiling Point (°C) | REACH dossier information. 160 +/-20°C @ 1016 hPa |
| Vapour Pressure |  218 Pa @ 25°C |
| Solubility in Water @20°C | Negligible in water. Soluble in alcohol and other oils.  |
| Auto-ignition temperature (°C) | > 235.0 |
| **9.2** | **Other information** |
|  | No additional data available. |

##### 10. STABILITY AND REACTIVITY

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| **10.1** | **Reactivity** |
|  | Presents no significant reactivity hazards, by itself or in contact with water. Stable under normal temperature and storage conditions and recommended use.  |
| **10.2** | **Chemical stability** |
|  | Stable under normal temperature and storage conditions and recommended use. |
| **10.3** | **Possible hazardous reactions** |
|  | Not expected under normal temperature conditions and recommended use. |
| **10.4** | **Conditions to Avoid** |
|  | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Prevent storing the product in open containers for long periods so as to prevent product deterioration. |
| **10.5** | **Incompatible materials** |
|  | Avoid contact with strong acids, alkalis and oxidising agents. |
| **10.6** | **Hazardous Decomposition Products** |
|  | Not expected under normal temperature conditions and recommended use. Thermal decomposition may release/form oxides of carbon (carbon monoxide, carbon dioxide) and other toxic gases. |

##### 11. TOXOLOGICAL INFORMATION

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| **11.1** | **Information on toxicological effects**  |
|  | Acute Toxicity | Not classifiedLD50: > 5000mg/kg bw (Oral. Rat, similar to OECD 401)LD50: > 1000mg/kg bw (Dermal rabbit, similar to OECD 402) |
|  | Skin corrosion / irritation | Causes skin irritation. |
|  | Serious eye damage / irritation | Not classified as irritating to the eye. (Tested according to OECD guideline no 405) |
|  | Respiratory or skin sensitisation | May cause an allergic skin reaction. (OECD guideline 429) |
|  | Germ Cell Mutagenicity | Not classified. |
|  | Carcinogenicity | Not classified. |
|  | Reproductive toxicity | The CLP additivity calculation classifies the product as Repr. 2, H361 - Suspected of damaging fertility or the unborn child. Although product contains substances classified as H361, the REACH registration information does not classify the product as toxic for reproduction. |
|  | STOT-single exposure | Not classified. |
|  | STOT-repeated exposure | Not classified. |
|  | Aspiration hazard | May be fatal if swallowed and enters airways. |
|  | Photo-toxicity | Due to the presence of furocoumarins, the product may have phototoxic effects. |
|  | Other Information | No additional data available. |

##### 12. ECOLOGICAL INFORMATION

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| **12.1** | **Toxicity** |
|  | The CLP additivity calculation classifies the product as Aquatic Chronic 1- H410 (Very toxic to aquatic life with long lasting effects). However, based on ecotoxicolgical data Lemon Oil is classified as Toxic to aquatic life with long lasting effects. Algae/aquatic plants: 72h ELr50 Desmodesmus subspicatus 150mg/l (WAF)  72h NOECr ~50mg/l (OECD 201, WAF)Fish: 96h EL50 Danio rerio 5.65mg/l 96h LC50 2.76mg/l (OECD 203, WAF)Aquatic invertebrates: 48h EL50 Daphnia magna 1.1mg/l NOEL 0.48mg/l (OECD 202, WAF) |
| **12.2** | **Persistence & degradability** |
|  | Readily biodegradable. |
| **12.3** | **Bioaccumulation Potential** |
|  | As the material is readily biodegradable, bio-accumulation is not expected. |
| **12.4** | **Mobility in soil** |
|  | As the material is readily biodegradable, tests in surface water, sediment and soil are not required. |
| **12.5** | **Results of PBT and vPvB Assessment** |
|  | This substance does not meet the PBT/vPvB criteria of REACH, annex XIII. |
| **12.6** | **Other adverse effects** |
|  | Do not discharge into the environment especially not into waterways, sewers and the sea. |

##### 13. DISPOSAL CONSIDERATIONS

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| **13.1** | **Waste treatment methods** |
|  | Do not allow entry into drains or waterways.**Waste:**Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.Do not contaminate the ground or water with waste. Do not dispose of waste into the environment.**Soiled packaging:**Empty container completely. Keep label(s) on container.Dispose of via a certified disposal contractor. |

##### 14. TRANSPORT INFORMATION

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| **14.1** | **UN number**  |
|  | UN No. Road | UN 1169 |
|  | UN No. SEA | UN 1169 |
|  | UN No. AIR | UN 1169 |
| **14.2** | **UN proper shipping name**  |
|  | EXTRACTS, AROMATIC, LIQUID |
| **14.3** | **Transport hazard class(es)** |
|  | **ADR/RID**ADR/RID– Class 3ADR Classification Code – F1Special provisions – 601 Limited quantities – 5LExpected quantities – E1Emergency Action Code – 3YTunnel Restriction Code – D/E**IMDG**IMDG – Class 3Special Provisions – 601 Limited quantities – 5LExpected quantities – E1IMDG EMS – F-E, S-DStowage and Handling – Category A**ICAO/IATA**ICAO/IATA– Class 3IATA proper shipping name - EXTRACTS, AROMATIC, LIQUIDExpected quantities – E1Transport LabelsVehicle label 250mm x 250mm Class 3 |
| **14.4** | **Packing group** |
|  | ADR/RID/ADN Packing group IIIIMDG Packing group IIIICAO Packing group III |
| **14.5** | **Environmental hazards** |
|  | Environmentally Hazardous Substance/Marine Pollutant.C:\Users\t\Desktop\icons\dang to env.jpg |
| **14.6** | **Special precautions for user** |
|  | Contains constituents that are flammable & dangerous to the environment. |
| **14.7** | **Transport in bulk according to Annex II of MARPOL73/78 and the IBC code** |
|  | No additional data available. |

##### 15. REGULATORY INFORMATION

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| --- | --- |
| **15.1** | **Safety, health and environmental regulations/legislation specific for the substance or mixture**  |
|  | Statutory InstrumentsThe Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716).Guidance NotesWorkplace Exposure Limits EH40. CHIP for everyone HSG(108).EU LegislationRegulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation 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, including amendments. |
| **15.2** | **Chemical safety assessment** |
|  | No additional information available. |

##### 16. OTHER INFORMATION

|  |  |
| --- | --- |
| Hazard and/or Precautionary Statements in Full | H226 Flammable liquid and vapour.H302 Harmful if swallowed.H304 May be fatal if swallowed and enters airways.H315 Causes skin irritation.H317 May cause an allergic skin reaction.H319 Causes serious eye irritation.H361 Suspected of damaging fertility or the unborn child.H400 Very toxic to aquatic life.H410 Very toxic to aquatic life with long lasting effects.H411 Toxic to aquatic life with long lasting effects. |
| Other Information | The CLP additivity calculation classifies the product as: 1. Repr. 2, H361 (Suspected of damaging fertility or the unborn child). 2. Aquatic Chronic 1- H410 (Very toxic to aquatic life with long lasting effects). However based REACH information Lemon Oil:Is not classified as toxic for reproduction. Is classified as hazardous to the aquatic environment Aquatic Chronic 2 – H411 (Toxic to aquatic life with long lasting effects). |
| Revision Date | 02/12/2020 |
| Reason for revision  | 04 Updated SDS 03 Updated SDS 02 Updated to new SDS format 01 new SDS |
| Rev No/Repl, SDS Generated | 03 replaces version 02 |

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