International SDS Documents

*FOR INFORMATION REFERENCE ONLY*. A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.
Safety Data Sheet
Petroleum Wax

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Microcrystalline Wax</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC No. (EINECS No.)</td>
<td>264-038-1</td>
</tr>
<tr>
<td>CAS No.</td>
<td>63231-60-7</td>
</tr>
<tr>
<td>Date Issued</td>
<td>11/15/16</td>
</tr>
<tr>
<td>Revision Date</td>
<td>6/12/18</td>
</tr>
</tbody>
</table>

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

1.2.1. Relevant identified uses: Laboratory test sample

1.2.2. Uses advised against

No additional information available.

1.3. Details of the supplier of the safety data sheet

Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number

Chemtrec - 24 hour emergency response: (800) 424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

2.1.2. Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Not classified.

2.2. Label elements

2.2.1. Labeling according to Regulation (EC) No. 1272/2008 [CLP/GHS]
No labeling applicable.

2.2.2. Labeling according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
No labeling applicable.

2.2.3. Additional information

Caution: Combustible, Contact with molten material will cause thermal burns

HMIS- Health: 0  Flammability: 1  Reactivity: 0

2.3. Other hazards

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.
Environmental hazards: This substance is biodegradable and does not contain any component above 0.1% w/w which is considered carcinogenic by OSHA, IARC or NTP.

Other hazards which do not result in classification: High concentration of vapors may cause serious lung damage, and may induce headache, nausea, dizziness.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>Classification according to Directive 67/548/EEC [DSD]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline Wax</td>
<td>CAS Reg. No. 63231-60-7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>EC No. 264-038-1</td>
<td>Not classified.</td>
</tr>
</tbody>
</table>

#### 3.2. Mixtures

Not applicable.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. If medical advice is needed, have product container or label at hand.

First-aid measures after skin contact: If contacted with hot material, take off all contaminated clothing immediately. Rinse skin thoroughly with plenty of water for at least 20 minutes and take medical advice. If medical advice is needed, have product container or label at hand.

First-aid measures after eye contact: If heated material should splash into eyes, rinse immediately and plentifully with water, also under the eyelids, for at least 20 minutes. Seek immediate medical advice. If medical advice is needed, have product container or label at hand.

First-aid measures after ingestion: If swallowed, do not induce vomiting. Seek medical advice immediately and show the container label. If swallowed, do not induce vomiting. Rinse mouth with water (only if the person is conscious). Drink plenty of water.
4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: High concentration of vapors or fumes from molten substance may induce: headache, nausea, dizziness. Irritant effect on the respiratory tract.
Symptoms/injuries after skin contact: Slightly irritating to skin. Prolonged/repetitive skin contact may cause skin defatting or dermatitis. Heated product causes burns.
Symptoms/injuries after eye contact: Slightly irritating to eyes.
Symptoms/injuries after ingestion: Nausea

4.3. Indication of any immediate medical attention and special treatment needed
Following contact with the molten substance, quickly cool affected skin area with water.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media: Carbon dioxide (CO₂), dry chemical powder, foam, or water fog.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Apply aqueous extinguishing media carefully to prevent frothing/steam explosion.
Reactivity: On combustion, may form: carbon dioxide (CO₂), sulfur dioxide (SO₂), Nitrogen oxides (NOₓ), and carbon monoxide (CO).

5.3. Advice for firefighters
Firefighting instructions: Cool tanks/drums with water spray/remove them into safety.
Protective equipment for firefighters: In case of fire: Wear self-contained breathing apparatus. Refer to Section 8.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: If the substance is molten, use water spray/stream to protect personnel and to cool endangered containers. Emergency cooling must be provided for in case of fire. Wear protective clothing and equipment. Avoid contact with molten substance. Keep unprotected persons away. Ensure adequate ventilation.

6.1.1. For non-emergency personnel
Protective equipment: Wear suitable protective clothing, gloves and eye/face protection. Refer To Section 8. Emergency procedures: Remove all sources of ignition. Stop leak if safe to do so.

6.1.2. For emergency responders
Protective equipment: In case of fire, wear self-contained breathing apparatus (SCBA). Wear Suitable protective clothing, gloves and eye/face protection. Refer to Section 8.
Emergency procedures: Evacuate unnecessary personnel. Remove all sources of ignition. Stop leak if safe to do so.

6.2. Environmental precautions
Avoid release to the environment. Contaminated fire-fighting water must be collected separately. Prevent spreading over great surfaces (e.g. by damming or installing oil booms).

6.3. Methods and material for containment and cleaning up
6.3.1. For containment
Stop leak if safe to do so. Eliminate leaks immediately.

6.3.2. For cleaning up
Collect in closed containers for disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). If the substance is molten, cool down with water and allow it to solidify.
6.3.3. Other information
Relevant water authorities should be notified of any large spillage to water course or drain.

6.4. Reference to other sections
If appropriate, Sections 8 and 13 shall be referred to.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Handle in accordance with good industrial hygiene and safety procedures. Use only in well ventilated areas. Use personal protective equipment as required. The melted product can cause severe burns.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent.
Incompatible materials: Strong oxidizing agents.
Storage area: Keep away from open flames, hot surfaces, sources of ignition, and humid air. Do not store near oxidizing agents. Store in a dark area. Only use anti-static equipped (spark-free) tools. Ensure the grounding of containers, apparatus, pumps and suction equipment. Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent.

Special rules on packaging: Portable tanks/vessels.

7.3. Specific end use(s)
No additional information available.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
The information provided below refers to the occupational exposure limits for paraffin wax fumes.

<table>
<thead>
<tr>
<th></th>
<th>Limit value (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>France</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Italy - Portugal - USA ACGIH</td>
<td>ACGIH TWA (mg/m³)</td>
</tr>
<tr>
<td>Spain</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>WEL STEL (mg/m³)</td>
</tr>
<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (mg/m³)</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (8 hours ref) (mg/m³)</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (mg/m³)</td>
</tr>
<tr>
<td>Norway</td>
<td>Gjennomsnittsverdier (AN) (mg/m³)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
8.2.1. Appropriate engineering controls
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Provide adequate ventilation. Do not eat, drink or smoke when using this substance.

8.2.2. Personal protective equipment
Take off contaminated clothing and wash before reuse. Used working clothes should not be used outside the work area. Wear protective gloves and eye/face protection.

Symbol:

Protective gloves: The glove material has to be impermeable and resistant to the substance. Use gloves made of PVC.
Eye protection: Wear eye protection/face protection.
Respiratory protection: Wear respiratory protection. The filter class must be suitable for the Maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used. In case of fire, wear self-contained breathing apparatus.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>White to yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>None or mild petroleum</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability</td>
<td>No Data</td>
</tr>
<tr>
<td>Decomposition temperature, °C</td>
<td>No Data</td>
</tr>
<tr>
<td>pH</td>
<td>No Data</td>
</tr>
<tr>
<td>Melting point</td>
<td>54-102°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt;230°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;93.4°C (200°F) Method: PMCC, ASTM D93</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No Data</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.01 kPa at 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No Data</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in organic solvents</td>
<td>Soluable</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>13-18 mm²/s at 100°C</td>
</tr>
<tr>
<td>Partitioning coefficient</td>
<td>Log POW: &gt;6 This product is soluble in oil</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity
No reactivity danger exists.

10.2. Chemical stability
Stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions
No hazardous reactions are possible.

10.4. Conditions to avoid
Creation of concentrations within the explosion limits, presence of ignition sources and contact with a naked flame.
10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
Under normal conditions: none. On combustion, may form: carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxides (NOₓ), or carbon monoxide (CO).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: No data available.

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD 50 oral rat</td>
</tr>
<tr>
<td>LD 50 dermal rabbit</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Solid material is not expected to be a skin irritant; however, skin contact with molten wax may cause thermal burns. No harmful effects from skin absorption are expected.

Serious eye damage/irritation: Solid material is not expected to be an eye irritant; however, contact with substance may cause thermal burns. Vapors from molten substance may cause watering of the eyes.

Respiratory or skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

Specific target organ toxicity (single exposure): No data available.

Specific target organ toxicity (repeated exposure): No data available.

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL (oral,rat,90 days)</td>
</tr>
<tr>
<td>NOAEL (dermal,rat/rabbit,90 days)</td>
</tr>
</tbody>
</table>

Aspiration hazard: No data available.

Potential Adverse human health effects: The molten substance can cause severe burns. High concentration of and symptoms. Vapors may cause serious lung damage, and may induce headache, nausea, dizziness.

Environmental fate: Petroleum-based (mineral) waxes normally will float on water. In stagnant or slow-flowing waterways, a wax layer can reduce the atmospheric oxygen exchange with the water system. If the wax layer is not removed, oxygen depletion can result in loss of marine life.

SECTION 12: Ecological information

12.1. Toxicology

Ecology – general: When used and handled according to specifications, the substance does not have any harmful effects according to our experience and the information provided to us.
Microcrystalline Wax (CAS Reg. No. 64742-43-4)

<table>
<thead>
<tr>
<th>LC 50 fishes</th>
<th>&gt; 100 mg/l 96 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50 other aquatic organisms</td>
<td>&gt; 10000 mg/l 96 hours- shrimp</td>
</tr>
<tr>
<td>EC 50 Daphnia</td>
<td>&gt; 10000 mg/l 48 hours</td>
</tr>
<tr>
<td>NOEC (acute)</td>
<td>&gt; 1000 mg/l 48 hours- daphnia</td>
</tr>
<tr>
<td>NOEC (chronic)</td>
<td>&gt; 100 mg/l 72 hours- algae</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Not expected - the substance is not soluble in water.</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log KOW</td>
</tr>
<tr>
<td>&gt;15</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td>Not expected - the substance is biodegradable.</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
<tr>
<td>Not expected - the substance is biodegradable.</td>
</tr>
</tbody>
</table>

### 12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not expected because of the composition and low solubility in water.</td>
</tr>
</tbody>
</table>

### 12.6. Other adverse effects

The formation of product layers on water surfaces prevents the access of oxygen.

### 12.7. Additional information

No data available.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations: Consult the local waste disposal expert about waste disposal. Dispose of this substance and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

Additional information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### SECTION 14: Transport information

Under normal situation for shipment at ambient temperature, the substance is in stable solid form. It is not considered dangerous in sense of transport regulations.

### SECTION 15: Regulatory information
15.1. Health, safety, and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU regulations
EU – European Inventory of Existing Commercial chemical: Substance is listed.
Substances (EINECS)
EU – Regulation (EC) No. 1907/2006 [REACH] as amended: None of the components are listed (SVHC).
EU – Directive 2005/69/EC [RoHS] as amended: None of the components are listed.
EU – Directive 2011/65/EU [RoHS2] as amended: None of the components are listed.

15.1.2. Other regional/national regulations
OECD – List of High Production Volume Chemicals: Substance is listed.
US – Toxic Substance Act (TSCA): Substance is listed.
US EPA – High Production Volume (HPV) Challenge: Substance is listed.
Program Chemical List
US FDA – Code of Federal Regulations (CFR) for food and drugs – petroleum wax CFR 172.886b. It may be safely used as food additives.
Canada – Domestic Substances List (DSL): Substance is listed.
Japan – Existing and New Chemical Substances (ENCS): Substance is listed.
Korea – Existing Chemicals List (ECL): Substance is listed.
China – Inventory of Existing Chemical Substance (IECSC): Substance is listed.
Taiwan – National Existing Chemical Inventory (NECI): Substance is listed.
Philippines – Inventory of Chemicals and Chemical Substances (PICCS): Substance is listed.
Australia – Inventory of Chemical Substances (AICS): Substance is listed.
New Zealand – Inventory of Chemicals (NZIoC): Substance is listed.

15.2. Chemical safety assessment
Chemical safety assessment has not been established. The substance is not classified as dangerous under normal conditions.

SECTION 16: Other information
Exposure scenarios: Not required.
Sources of key data: Limdon Specialty Pte Ltd. MSDS
Prepared by: Limdon Specialty Pte Ltd
SDS – Safety Data Sheet. SVHC – Substance of Very High Concern.

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. Adequate training and instruction should be given by you to your employees and affected personnel. Appropriate warnings and safe handling procedures should be provided by you to handlers and users. Additionally, the user should review this information, satisfy itself as to its suitability and completeness, and pass on the information to its employees or customers in accordance with the applicable federal, state, provincial or local hazard communication requirements. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the fitness for use of the material, or the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, vendor neither assumes nor retains any responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to appropriate practices, or from any hazards inherent in the nature of the material. Moreover, unless an employee or a customer accesses or receives a SDS directly from the company, there is no assurance that a document obtained from alternate sources is the most currently available SDS. The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Completed by Clark PTP Staff
Domestic SDS Documents

*FOR INFORMATION REFERENCE ONLY. A product specific SDS is included with each shipment. Use the SDS sent with each sample for information related to the product supplied per program cycle.*
Safety Data Sheet
Petroleum Wax

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Substance name: Microcrystalline Wax
EC No. (EINECS No.): 264-038-1
CAS No.: 63231-60-7
Date Issued: 11/15/16
Revision Date: 6/12/18

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses: Laboratory test sample
1.2.2. Uses advised against
No additional information available.

1.3. Details of the supplier of the safety data sheet
Clark Laboratories
1801 Route 51 South
Jefferson Hills, PA 15025
412-387-1001

1.4. Emergency telephone number
Chemtrec - 24 hour emergency response: (800) 424-9300
International Collect: +1 703 741 5970
SDS Assistance Email: sds@clarktesting.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.
2.1.2. Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Not classified.
2.1.3. Additional information
No additional information available.

2.2. Label elements
2.2.1. Labeling according to Regulation (EC) No. 1272/2008 [CLP/GHS]
No labeling applicable.
2.2.2. Labeling according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
No labeling applicable.
2.2.3. Additional information
Caution: Combustible, Contact with molten material will cause thermal burns

HMIS- Health: 0  Flammability: 1  Reactivity: 0

2.3. Other hazards
This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.
Environmental hazards: This substance is biodegradable and does not contain any component above 0.1% w/w which is considered carcinogenic by OSHA, IARC or NTP.

Other hazards which do not result in classification: High concentration of vapors may cause serious lung damage, and may induce headache, nausea, dizziness.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

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<tr>
<th>Name</th>
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<td>CAS Reg. No. 63231-60-7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>EC No. 264-038-1</td>
<td>Not classified.</td>
</tr>
</tbody>
</table>

#### 3.2. Mixtures

Not applicable.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**First-aid measures after inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of breathing difficulties administer oxygen. In case of irregular breathing or respiratory arrest provide artificial respiration. If medical advice is needed, have product container or label at hand.

**First-aid measures after skin contact**: If contacted with hot material, take off all contaminated clothing immediately. Rinse skin thoroughly with plenty of water for at least 20 minutes and take medical advice. If medical advice is needed, have product container or label at hand.

**First-aid measures after eye contact**: If heated material should splash into eyes, rinse immediately and plentifully with water, also under the eyelids, for at least 20 minutes. Seek immediate medical advice. If medical advice is needed, have product container or label at hand.

**First-aid measures after ingestion**: If swallowed, do not induce vomiting. Seek medical advice immediately and show the container label. If swallowed, do not induce vomiting. Rinse mouth with water (only if the person is conscious). Drink plenty of water.
4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: High concentration of vapors or fumes from molten substance may induce:
- headache, nausea, dizziness. Irritant effect on the respiratory tract.
Symptoms/injuries after skin contact: Slightly irritating to skin. Prolonged/repetitive skin contact may cause
- skin defattening or dermatitis. Heated product causes burns.
Symptoms/injuries after eye contact: Slightly irritating to eyes.
Symptoms/injuries after ingestion: Nausea

4.3. Indication of any immediate medical attention and special treatment needed
Following contact with the molten substance, quickly cool affected skin area with water.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media: Carbon dioxide (CO₂), dry chemical powder, foam, or water fog.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Apply aqueous extinguishing media carefully to prevent frothing/steam explosion.
Reactivity: On combustion, may form: carbon dioxide (CO₂), sulfur dioxide (SO₂), Nitrogen oxides (NOₓ), and carbon monoxide (CO).

5.3. Advice for firefighters
Firefighting instructions: Cool tanks/drums with water spray/remove them into safety.
Protective equipment for firefighters: In case of fire: Wear self-contained breathing apparatus. Refer to Section 8.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: If the substance is molten, use water spray/stream to protect personnel and to
- cool endangered containers. Emergency cooling must be provided for in case of fire. Wear protective clothing and equipment. Avoid contact with molten substance. Keep unprotected persons away. Ensure adequate ventilation.

6.1.1. For non-emergency personnel
Protective equipment: Wear suitable protective clothing, gloves and eye/face protection. Refer To Section 8. Emergency procedures: Remove all sources of ignition. Stop leak if safe to do so.

6.1.2. For emergency responders
Protective equipment: In case of fire, wear self-contained breathing apparatus (SCBA). Wear Suitable protective clothing, gloves and eye/face protection. Refer to Section 8.
Emergency procedures: Evacuate unnecessary personnel. Remove all sources of ignition. Stop leak if safe to do so.

6.2. Environmental precautions
Avoid release to the environment. Contaminated fire-fighting water must be collected separately.
Prevent spreading over great surfaces (e.g. by damming or installing oil booms).

6.3. Methods and material for containment and cleaning up
6.3.1. For containment
Stop leak if safe to do so. Eliminate leaks immediately.
6.3.2. For cleaning up
Collect in closed containers for disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). If the substance is molten, cool down with water and allow it to solidify.
6.3.3. Other information
Relevant water authorities should be notified of any large spillage to water course or drain.

6.4. Reference to other sections
If appropriate, Sections 8 and 13 shall be referred to.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Handle in accordance with good industrial hygiene and safety procedures. Use only in well ventilated areas. Use personal protective equipment as required. The melted product can cause severe burns.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent.
Incompatible materials: Strong oxidizing agents.
Storage area: Keep away from open flames, hot surfaces, sources of ignition, and humid air. Do not store near oxidizing agents. Store in a dark area. Only use anti-static equipped (spark-free) tools. Ensure the grounding of containers, apparatus, pumps and suction equipment. Floors should be impenetrable, resistant to liquids and easy to clean. The floor should be leak tight, jointless and not absorbent.

Special rules on packaging: Portable tanks/vessels.

7.3. Specific end use(s)
No additional information available.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
The information provided below refers to the occupational exposure limits for paraffin wax fumes.

<table>
<thead>
<tr>
<th>Paraffin waxes (petroleum), clay-treated (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
</tr>
<tr>
<td>France</td>
</tr>
<tr>
<td>Italy - Portugal - USA</td>
</tr>
<tr>
<td>Spain</td>
</tr>
<tr>
<td>Switzerland</td>
</tr>
<tr>
<td>United Kingdom</td>
</tr>
<tr>
<td>United Kingdom</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>-country</th>
<th>Limit value (mg/m³)</th>
<th>2 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Grænseværdie (langvarig) (mg/m³)</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Finland</td>
<td>HTP-arvo (8h) (mg/m³)</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (8 hours ref) (mg/m³)</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Ireland</td>
<td>OEL (15 min ref) (mg/m³)</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>Norway</td>
<td>Gjennomsnittsverdier (AN) (mg/m³)</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
8.2.1. Appropriate engineering controls
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Provide adequate ventilation. Do not eat, drink or smoke when using this substance.

8.2.2. Personal protective equipment
Take off contaminated clothing and wash before reuse. Used working clothes should not be used outside the work area. Wear protective gloves and eye/face protection.

Symbol:

Protective gloves
Hand protection: The glove material has to be impermeable and resistant to the substance. Use gloves made of PVC.

Eye protection: Wear eye protection/face protection.

Respiratory protection: Wear respiratory protection. The filter class must be suitable for the Maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used. In case of fire, wear self-contained breathing apparatus.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>White to yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>None or mild petroleum</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability</td>
<td>No Data</td>
</tr>
<tr>
<td>Decomposition temperature, °C</td>
<td>No Data</td>
</tr>
<tr>
<td>pH</td>
<td>No Data</td>
</tr>
<tr>
<td>Melting point</td>
<td>54-102°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt;230°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt;93.4°C (200°F) Method: PMCC, ASTM D93</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No Data</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.01 kPa at 20°C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No Data</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility in organic solvents</td>
<td>Soluable</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>13-18 mm²/s at 100°C</td>
</tr>
<tr>
<td>Partitioning coefficient</td>
<td>Log POW: &gt;6 This product is soluble in oil</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available.

SECTION 10: Stability and reactivity
10.1. Reactivity
No reactivity danger exists.

10.2. Chemical stability
Stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions
No hazardous reactions are possible.

10.4. Conditions to avoid
Creation of concentrations within the explosion limits, presence of ignition sources and contact with a naked flame.
10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
Under normal conditions: none. On combustion, may form: carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxides (NOₓ), or carbon monoxide (CO).

SECTION 11: Toxicological information
11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>No data available.</th>
</tr>
</thead>
</table>

**Microcrystalline Wax (CAS Reg. No. 64742-43-4)**

<table>
<thead>
<tr>
<th>LD 50 oral rat</th>
<th>&gt; 5000 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD 50 dermal rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Solid material is not expected to be a skin irritant; however, skin contact with molten wax may cause thermal burns. No harmful effects from skin absorption are expected.

Serious eye damage/irritation: Solid material is not expected to be an eye irritant; however, contact with substance may cause thermal burns. Vapors from molten substance may cause watering of the eyes.

Respiratory or skin sensitization: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

Specific target organ toxicity (single exposure): No data available.

Specific target organ toxicity (repeated exposure): No data available.

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL (oral, rat, 90 days)</td>
</tr>
<tr>
<td>NOAEL (dermal, rat/rabbit, 90 days)</td>
</tr>
</tbody>
</table>

Aspiration hazard: No data available.

Potential Adverse human health effects: The molten substance can cause severe burns. High concentration of and symptoms. Vapors may cause serious lung damage, and may induce headache, nausea, dizziness.

Environmental fate: Petroleum-based (mineral) waxes normally will float on water. In stagnant or slow-flowing waterways, a wax layer can reduce the atmospheric oxygen exchange with the water system. If the wax layer is not removed, oxygen depletion can result in loss of marine life.

SECTION 12: Ecological information

12.1. Toxicology

Ecology – general: When used and handled according to specifications, the substance does not have any harmful effects according to our experience and the information provided to us.
### Microcrystalline Wax (CAS Reg. No. 64742-43-4)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50 fishes</td>
<td>&gt; 100 mg/l 96 hours</td>
</tr>
<tr>
<td>LC 50 other aquatic organisms</td>
<td>&gt; 10000 mg/l 96 hours- shrimp</td>
</tr>
<tr>
<td>EC 50 Daphnia</td>
<td>&gt; 10000 mg/l 48 hours</td>
</tr>
<tr>
<td>NOEC (acute)</td>
<td>&gt; 1000 mg/l 48 hours- daphnia</td>
</tr>
<tr>
<td>NOEC (chronic)</td>
<td>&gt; 100 mg/l 72 hours- algae</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not expected - the substance is not soluble in water.</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
<th>Log K OW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;15</td>
</tr>
</tbody>
</table>

| Bioaccumulative potential | Not expected - the substance is biodegradable. |

### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Microcrystalline Wax (CAS Reg. No. 64742-43-4)</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not expected - the substance is biodegradable.</td>
</tr>
</tbody>
</table>

### 12.5. Results of PBT and vPvB assessment

| Microcrystalline Wax (CAS Reg. No. 64742-43-4) | Not expected because of the composition and low solubility in water. |

### 12.6. Other adverse effects

The formation of product layers on water surfaces prevents the access of oxygen.

### 12.7. Additional information

No data available.

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**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Waste disposal recommendations:

Consult the local waste disposal expert about waste disposal. Dispose of this substance and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

Additional information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

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**SECTION 14: Transport information**

Under normal situation for shipment at ambient temperature, the substance is in stable solid form. It is not considered dangerous in sense of transport regulations.

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**SECTION 15: Regulatory information**
15.1. Health, safety, and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU regulations
EU – European Inventory of Existing Commercial chemical : Substance is listed.
Substances (EINECS)
EU – Regulation (EC) No. 1907/2006 [REACH] as amended : None of the components are listed (SVHC).
EU – Directive 2005/69/EC [RoHS] as amended : None of the components are listed.
EU – Directive 2011/65/EU [RoHS2] as amended : None of the components are listed.

15.1.2. Other regional/national regulations
OECD – List of High Production Volume Chemicals : Substance is listed.
US – Toxic Substance Act (TSCA) : Substance is listed.
US EPA – High Production Volume (HPV) Challenge : Substance is listed.
Program Chemical List
US FDA – Code of Federal Regulations (CFR) for food and : Substance meets the UV absorbance
limits described in 21
drugs – petroleum wax CFR 172.886b. It may be safely used as food
additives.
Canada – Domestic Substances List (DSL) : Substance is listed.
Japan – Existing and New Chemical Substances (ENCS) : Substance is listed.
Korea – Existing Chemicals List (ECL) : Substance is listed.
China – Inventory of Existing Chemical Substance (IECSC) : Substance is listed.
Taiwan – National Existing Chemical Inventory (NECI). : Substance is listed.
Philippines – Inventory of Chemicals and Chemical
Substances (PICCS)
Australia – Inventory of Chemical Substances (AICS) : Substance is listed.
New Zealand – Inventory of Chemicals (NZIoC) : Substance is listed.

15.2. Chemical safety assessment
Chemical safety assessment has not been established. The substance is not classified as dangerous under normal conditions.

SECTION 16: Other information
Exposure scenarios : Not required.
Sources of key data : Limdon Specialty Pte Ltd. MSDS
Prepared by : Limdon Specialty Pte.Ltd
Abbreviations and acronyms : ACHIH – American Conference of Governmental
Industrial Hygienists. ASTM –American Society for Testing and Materials. CAS – Chemical Abstracts
Service. CLP – Classification, Labeling and Packaging.
Dose, 50%. NFPA – National Fire Protection Association. NOISH – National Institute for Occupational Safety and Health. NTP –National Toxicology Program. OSHA – Occupational Safety and Health Administration. REACH –
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Completed by Clark PTP Staff