Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Pyrinex 480 EC

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

Recommended Use: Insecticide
Uses advised against: No information available

1.3. Details of the supplier of the safety data sheet

Supplier Address: ADAMA SOUTH AFRICA (PTY) LTD
21 Viben Street
Brankenfell
7560

For further information, please contact

Email address: msds@mcw.co.il

1.4. Emergency telephone number

Emergency Telephone: + 27 82 331 6463
+ 27 21 982 1460

Section 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification of the product is based on the coformulants listed in section 3
R10 - Xn;R20/22 - Xi;R37 - Xi;R41 - R43 - Xn;R65 - R66 - N;R50-53

Full text of R-phrases: see section 16

2.2. Label elements

The product is classified and labeled in accordance with Directive 1999/45/EC

Hazard symbols: Xn - Harmful
N - Dangerous for the environment
R-Phrases
R10 - Flammable
R20 - Harmful by inhalation
R22 - Harmful if swallowed
R37 - Irritating to respiratory system
R41 - Risk of serious damage to eyes
R43 - May cause sensitization by skin contact
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S phrases
S2 - Keep out of the reach of children
S15 - Keep away from heat
S16 - Keep away from sources of ignition — No smoking
S20/21 - When using do not eat, drink or smoke
S23.10 - Do not breathe gas/fumes/vapor/spray
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S28 - After contact with skin, wash immediately with plenty of soap and water
S33 - Take precautionary measures against static discharges
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection
S60 - This material and its container must be disposed of as hazardous waste
S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label
S63 - In case of accident by inhalation: remove casualty to fresh air and keep at rest
S64 - If swallowed, rinse mouth with water (only if the person is conscious)

Additional phrases for PPP
SP1 - Do not contaminate water with the product or its container

2.3. Other hazards Other Information

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight-%</th>
<th>CAS No</th>
<th>EC No</th>
<th>Index No</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Classification according to 67/548/EEC</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos</td>
<td>44-48</td>
<td>2921-88-2</td>
<td>220-864-4</td>
<td>015-084-00-4</td>
<td>Acute Tox. 3 (H301) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) T; R25 N; R50-53</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hydrocarbons, C9, aromatics</td>
<td>&gt; 40</td>
<td>N/A</td>
<td>918-668-5</td>
<td>-</td>
<td>Flam. Liq. 3 (H226) Asp. Tox. 1 (H304) STOT SE 3 (H335) STOT SE 3 (H336) (EUH066) Aquatic Chronic 2 (H411) F; R10 Xn; R65 Xi; R37 R67 N; R51/53</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt</td>
<td>2 - 3</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td>Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Xi; R41, R38</td>
<td>01-2119560592-37</td>
<td>-</td>
</tr>
<tr>
<td>butan-1-ol</td>
<td>1 - 2</td>
<td>71-36-3</td>
<td>200-751-6</td>
<td>603-004-00-6</td>
<td>Flam Liq. 3 (H226) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT SE 3 (H335) STOT SE 3 (H336) R10 Xn; R22 Xi; R37/38-41 R67</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). First aider: Pay attention to self-protection!

Inhalation
Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if necessary.

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Ingestion
Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.

Self-protection of the first aider
Use personal protective equipment as required.

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

Symptoms
None known

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

Note to physicians
Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

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

Unsuitable Extinguishing Media
No information available.

5.2. Special hazards arising from the substance or mixture

No specific hazard known.

5.3. Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
Remove all sources of ignition. Evacuate personnel to safe areas. Use only with adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

Other Information
See also section 8,13

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling
Use only with adequate ventilation. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Do not breathe dust/fume/gas/mist/vapors/spray. Use with local exhaust ventilation. Use personal protective equipment as required.

General Hygiene Considerations
When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions
Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos 2921-88-2</td>
<td>STEL: 0.6 mg/m³ TWA: 0.2 mg/m³</td>
<td>TWA: 0.2 mg/m³</td>
<td>STEL: 50 ppm TWA: 0.2 mg/m³</td>
<td>S* TWA: 0.1 mg/m³</td>
<td>TWA: 0.2 mg/m³</td>
</tr>
<tr>
<td>butan-1-ol 71-36-3</td>
<td>STEL: 50 ppm TWA: 154 mg/m³</td>
<td>STEL: 50 ppm TWA: 150 mg/m³</td>
<td>STEL: 50 ppm TWA: 154 mg/m³</td>
<td>S* Ceiling / Peak: 100 ppm Ceiling / Peak: 310 mg/m³</td>
<td>TWA: 100 ppm TWA: 310 mg/m³ Ceiling / Peak: 100 ppm Ceiling / Peak: 310 mg/m³</td>
</tr>
</tbody>
</table>

Page 4 / 9
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos 2921-88-2</td>
<td>TWA: 0.1 mg/m³</td>
<td>TWA: 0.2 mg/m³</td>
<td>TWA: 0.2 mg/m³ Skin</td>
<td>TWA: 0.2 mg/m³ Skin</td>
<td>TWA: 0.2 mg/m³ Skin</td>
</tr>
<tr>
<td>butan-1-ol 71-36-3</td>
<td>TWA: 20 ppm</td>
<td>TWA: 50 ppm TWA: 150 mg/m³</td>
<td>TWA: 50 ppm TWA: 75 ppm STEL: 230 mg/m³ Skin</td>
<td>Ceiling: 50 ppm Ceiling: 150 mg/m³ Skin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos 2921-88-2</td>
<td>Skin</td>
<td>Skin</td>
<td>NDSCh: 0.6 mg/m³</td>
<td>TWA: 0.2 mg/m³ Skin</td>
<td>TWA: 0.2 mg/m³ Skin</td>
</tr>
<tr>
<td>butan-1-ol 71-36-3</td>
<td>STEL 200 ppm STEL 600 mg/m³ TWA: 50 ppm TWA: 150 mg/m³</td>
<td>STEL: 50 ppm TWA: 50 ppm TWA: 50 ppm TWA: 150 mg/m³</td>
<td>STEL: 150 mg/m³ TWA: 50 mg/m³ Skin</td>
<td>Skin Ceiling: 25 ppm Ceiling: 75 mg/m³ Skin</td>
<td>TWA: 20 ppm STEL: 25 ppm STEL: 75 mg/m³ Skin</td>
</tr>
</tbody>
</table>

**Derived No Effect Level (DNEL)**: No information available

**Predicted No Effect Concentration (PNEC)**: No information available.

### 8.2. Exposure controls

**Engineering Controls**
Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

- **Eye/face protection**
  - Tight sealing safety goggles.

- **Body Protection**
  - Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

- **Respiratory protection**
  - Use only with adequate ventilation.

**General Hygiene Considerations**
- When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

**Environmental exposure controls**
- Do not allow into any sewer, on the ground or into any body of water.

### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White or light yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Slight. Solvent Odor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point °C</td>
<td>No data available</td>
<td>CIPAC MT 75.3</td>
<td>solution (1 %)</td>
</tr>
<tr>
<td>Boiling point/boiling range °C</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point °C</td>
<td>46 - 47</td>
<td>CIPAC MT 12.2</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Applicable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available</td>
<td>EEC A.14</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure kPa</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>1.06 - 1.08</td>
<td>CIPAC MT 3.2.1</td>
<td></td>
</tr>
<tr>
<td>Solubility(ies) mg/l</td>
<td>No data available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Not available.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None under normal processing.

### 10.4. Conditions to avoid

Heat, flames and sparks.

### 10.5. Incompatible materials

No information available

### 10.6. Hazardous decomposition products

No data available

## Section 11: TOXICOLOGY INFORMATION

### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral LD50 mg/kg</td>
<td>Rat</td>
<td>OECD 401</td>
<td></td>
</tr>
<tr>
<td>Dermal LD50 mg/kg</td>
<td>Rat</td>
<td>OECD 402</td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50 mg/l/4h</td>
<td>Rat</td>
<td>OECD 403</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Rabbit</td>
<td>OECD 404</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Rabbit</td>
<td>OECD 405</td>
<td></td>
</tr>
<tr>
<td>Respiratory/skin sensitization</td>
<td>Guinea pig</td>
<td>OECD 406</td>
<td></td>
</tr>
<tr>
<td>Chronic toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Chlorpyrifos</td>
<td>Not classified</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chemical Name
Chlorpyrifos : Not Carcinogenic

Reproductive toxicity
Chemical Name
Chlorpyrifos : Not toxic for the reproductive system

STOT - single exposure
Chemical Name
Chlorpyrifos : No information available

STOT - repeated exposure
Chemical Name
Chlorpyrifos : No information available

Aspiration hazard
Chemical Name
Chlorpyrifos : No information available

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Acute toxicity

Aquatic toxicity

<table>
<thead>
<tr>
<th>Fish 96-hour LC50 mg/l</th>
<th>Values</th>
<th>Species</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 0.1</td>
<td>Rainbow trout</td>
<td>OECD 203</td>
<td></td>
</tr>
<tr>
<td>Crustacea 48-hour EC50 mg/l</td>
<td>&lt; 0.1</td>
<td>Daphnia magna</td>
<td>OECD 202</td>
<td></td>
</tr>
<tr>
<td>Algae 72-hour EC50 mg/l</td>
<td>2.07</td>
<td>Selenastrum capricornutum</td>
<td>OECD 201</td>
<td></td>
</tr>
</tbody>
</table>

Other plants EC50 mg/l

Terrestrial Toxicity
Birds Oral LD50 mg/kg
Chemical Name
Chlorpyrifos : 476

Bees Oral LD50 μg/bee
Chemical Name
Chlorpyrifos : 0.25

12.2. Persistence and degradability

Abiotic Degradation
Water DT50 days
Chemical Name
Chlorpyrifos : 16 - 35

Soil DT50 days
Chemical Name
Chlorpyrifos : 13 - 22

Biodegradation
Chemical Name
Chlorpyrifos : Not readily biodegradable

12.3. Bioaccumulative potential
### Partition Coefficient

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Values</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos</td>
<td>4.76</td>
<td>OECD 107</td>
<td></td>
</tr>
</tbody>
</table>

### Bioconcentration factor (BCF)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos</td>
<td>1374</td>
<td>No bioaccumulation potential</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Values</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorpyrifos</td>
<td>2785 - 31000</td>
<td>OECD 106</td>
<td>Koc</td>
</tr>
</tbody>
</table>

#### 12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB

#### 12.6. Other adverse effects

No information available.

### Section 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

- **Waste from residues/unused products**: Disposal should be in accordance with applicable regional, national and local laws and regulations.
- **Contaminated packaging**: Improper disposal or reuse of this container may be dangerous and illegal.
- **Other Information**: Waste codes should be assigned by the user based on the application for which the product was used.

### Section 14: TRANSPORTATION INFORMATION

#### IMDG/IMO

<table>
<thead>
<tr>
<th>14.1 UN/ID No</th>
<th>3017</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 Proper shipping name</td>
<td>ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Chlorpyrifos)</td>
</tr>
<tr>
<td>14.3 Hazard Class</td>
<td>6.1</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td></td>
</tr>
</tbody>
</table>

#### RID/ADR

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<th>14.1 UN/ID No</th>
<th>3017</th>
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<tbody>
<tr>
<td>14.2 Proper shipping name</td>
<td>ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Chlorpyrifos)</td>
</tr>
<tr>
<td>14.3 Hazard Class</td>
<td>6.1</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>14.5 Environmental hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td></td>
</tr>
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</table>

#### ICAO/IATA

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<tr>
<td>14.2 Proper shipping name</td>
<td>ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Chlorpyrifos)</td>
</tr>
<tr>
<td>14.3 Hazard Class</td>
<td>6.1</td>
</tr>
<tr>
<td>14.4 Packing Group</td>
<td>III</td>
</tr>
</tbody>
</table>
Section 15: REGULATORY INFORMATION

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

15.2. Chemical safety assessment
A chemical safety assessment according to regulation (EC) No. 1907/2006 is not required. A risk assessment was performed according to directive (EC) No. 91/414 or according to regulation (EC) No. 1107/2009.

Section 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R10 - Flammable
R22 - Harmful if swallowed
R25 - Toxic if swallowed
R37 - Irritating to respiratory system
R38 - Irritating to skin
R41 - Risk of serious damage to eyes
R43 - May cause sensitization by skin contact
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R67 - Vapors may cause drowsiness and dizziness
R20/22 - Harmful by inhalation and if swallowed
R37/38 - Irritating to respiratory system and skin
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Revision Date 20-May-2014

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

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet