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

1.1. Product identifier

Trade name: KALIF 480 EC

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

Relevant identified uses: Herbicide

Uses advised against: None under normal conditions.

1.3. Details of the supplier of the safety data sheet

: ADAMA SOUTH AFRICA (PTY) LTD
21 Viben Street
Brackenfell  7560

Email: msds@mcw.co.il

1.4. Emergency telephone number

: +27 82 331 6463
+27 21 982 1460

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

Classification 67/548/EEC (DSD) - 1999/45/EC (DPD)

: R10
Xn; R22-R65
Xc; R41
R52-53

2.2. Label elements

Labelling 1999/45/EC (DPD)

Symbol(s)

: Xn : Harmful.

R Phrase(s)

: R10 - Flammable.
R22 - Harmful if swallowed.
R41 - Risk of serious damage to eyes.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 - Harmful : may cause lung damage if swallowed.

S Phrase(s)

: S02 - Keep out of the reach of children.
S13 - Keep away from food, drink and animal feedingstuffs.
S20/21 - When using, do not eat, drink or smoke.
S25 - Avoid contact with eyes.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.
S57 - Use appropriate container to avoid environmental contamination.
S62 - If swallowed, do not induce vomiting : seek medical advice immediately and show this container or label.

2.3. Other hazards

Other hazards: None under normal conditions.

ADAMA SOUTH AFRICA (PTY) LTD
21 Viben Street Brackenfell  7560
SECTION 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Concentration % w/w</th>
<th>CAS No</th>
<th>EC No</th>
<th>Index No</th>
<th>REACH Reg.</th>
<th>Classification</th>
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<tr>
<td>Clomazone</td>
<td>46 - 50 %</td>
<td>81777-89-1</td>
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<td>R52; R53</td>
<td>Xn; R22</td>
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<tr>
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<td>Aquatic Chronic 3 - H412</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Xi; R38-41</td>
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<td>247-557-8</td>
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<td>R52; R53</td>
<td>Xi; R38-41</td>
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<td>265-199-0</td>
<td>649-356-00-4</td>
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<td>Asp. Tox 1 - H304</td>
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</table>

SECTION 4. First aid measures

4.1. Description of first aid measures

First aid measures: Remove victim from area of exposure. Wash off remaining material with plenty of water.

Inhalation: Remove victim to fresh air. If breathing is difficult: artificial respiration.

Skin contact: Remove contaminated clothing. Wash away remainder with water and soap.

Eye contact: for at least 15 minutes. Wash out with water with the eyelid held wide open.

Ingestion: Wash out mouth with plenty of water. Get medical attention. Never give anything by mouth to an unconscious person.

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

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

Note to physician: There is no specific antidote. Treat symptomatically and give supportive therapy.

Protection of first-aiders: Use appropriate protection (see section 8).

SECTION 5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Dry chemical, water spray foam, carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Flashback may occur along vapour trail.

Hazardous decomposition products: Chloride compounds, and nitrogen oxides.

5.3. Advice for fire-fighters

Protection against fire: Self-contained breathing apparatus and total protection required in enclosed areas.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For emergency responders: Wear suitable protective clothing.

6.2. Environmental precautions

Environmental precautions: Do not discharge into the environment.

6.3. Methods and material for containment and cleaning up

Clean up methods: Keep away from: open flame, sparks and heat. Absorb remainder in sand or other inert material. Dispose of this material and its container to hazardous or special waste collection point.

6.4. Reference to other sections
SECTION 7. Handling and storage

7.1. Precautions for safe handling

Handling: Avoid contact with skin and eyes. Ventilation required. Keep away from sparks, open flame and direct sunlight.

7.2. Conditions for safe storage, including any incompatibilities

Storage: Keep only in the original container. Keep in a cool, dry, well ventilated place away from direct sunlight.

7.3. Specific end use(s)

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

TLV©: Aromatic C-9 solvent: 19

8.2. Exposure controls

Clomazone: Not established

Personal protection:
- Respiratory protection: Respiratory protection is not required if good ventilation is maintained
- Hand protection: Chemical resistant gloves
- Skin protection: Wear suitable protective clothing and chemical resistant boots
- Eye protection: Chemical goggles or face shield

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance: Liquid
Colour: Yellowish
Odour: Aromatic
Odour threshold: Not available
pH: 4-6
Melting point / Freezing point: Melting point: 32°C (Clomazone)
Initial boiling point - boiling range: Not available
Flash point: 48.5
Evaporation rate: Not available
Flammability: Flammable
Explosion limits (lower - upper): 0.8 - 7 volume % (solvent)
Vapour pressure: 2.6x10^-4 hPa (25°C) (Clomazone)
Vapour density: Not available
Relative density: 1.020 (20°C)
Solubility: Emulsion
- Water: 1.4 g/l (20°C, pH 7) (Clomazone)
- Partition coefficient: n-octanol / water: 2.5 (pH 7) (Clomazone)
- Auto-ignition temperature: 400°C
- Decomposition temperature: 390°C (Clomazone)
- Viscosity: 26 s (40°C) (3 mm ISO cup)
- Oxidising properties: Not oxidizing

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21 Viben Street  Brackenfell  7560
SECTION 9. Physical and chemical properties (continued)

9.2. Other information

: Surface tension : 29.9mN/m (22°C)

SECTION 10. Stability and reactivity

10.1. Reactivity

: Stable under normal conditions.

10.2. Chemical stability

10.3. Possibility of hazardous reactions

: Hazardous polymerization will not occur

10.4. Conditions to avoid

: High temperature, sources of ignition.

10.5. Incompatible materials

Materials to avoid

: Oxidizing agents, acids, and alkali.

10.6. Hazardous decomposition products

Hazardous decomposition products

: Chloride compounds, and nitrogen oxides.

SECTION 11. Toxicological information

On product

11.1. Information on toxicological effects

- Acute toxicity
  - Oral, Rat LD50 (mg/kg) : 300-2000
  - Dermal, Rat LD50 [mg/kg] : > 2000
  - Inhalation, Rat LC50 [mg/l/4h] : > 5.15 Maximum concentration attainable

- Skin corrosion/irritation : Not irritant
- Serious eye damage/irritation : Severe irritant
- Respiratory or skin sensitisation : Non sensitiser
- Germ cell mutagenicity : Not mutagenic
- Carcinogenicity : Not carcinogenic
- Reproductive toxicity : Not considered to be toxic for the reproductive system.
- STOT-single exposure : Not available
- STOT-repeated exposure : Not available
- Aspiration hazard : R65 (solvent)

SECTION 12. Ecological information

12.1. Toxicity

Acute toxicity

- 96 H-LC50 - Rainbow trout [mg/l] : 24.5
- 48 H-EC50 - Daphnia magna [mg/l] : 67.3
- 72 H-EC50 - Algae [mg/l] : 41.2
- Bees LD50 [μg] : Not toxic to bees
SECTION 12. Ecological information (continued)

12.2. Persistence - degradability

Persistence - degradability

- Soil:
  Half-life time (1/2) : 15-90 day(s)
  Water : Degraded slowly by sunlight

12.3. Bioaccumulative potential

Bioaccumulative potential : Low bioaccumulation potential in aquatic organisms.

12.4. Mobility in soil

Mobility : Soil : Low mobility

12.5. Results of PBT and vPvB assessment

: Not available

12.6. Other adverse effects

: None known.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

General : Dispose of in a pesticide approved landfill, or in a chemical incinerator equipped with scrubbers. In accordance with national and regional regulations

SECTION 14. Transport information

14.1. UN number

<table>
<thead>
<tr>
<th>UN N°</th>
<th>Hazard Label(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>3 : Flammable liquid</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name

  Proper shipping name : UN1993 FLAMMABLE LIQUID, N.O.S.(Naphta), 3, III
  - H.I. no : 30
- Sea transport - IMO-IMDG : UN1993 FLAMMABLE LIQUID, N.O.S.(Naphta), 3, III
- Air transport - ICAO/IATA : UN1993 FLAMMABLE LIQUID, N.O.S.(Naphta), 3, III

14.3. Transport hazard class(es)

- Land transport - ADR/RID : 3
- Sea transport - IMO-IMDG : 3
- IMO-IMDG - class or division : 3
- Air transport - ICAO/IATA : 3

14.4. Packing group

- Land transport - ADR/RID : III
- Packing group : III
- Sea transport - IMO-IMDG : III
- Air transport - ICAO/IATA : III
SECTION 14. Transport information (continued)

14.5. Environmental hazards
- IMDG-Marine pollution : Marine pollutant - Polluant marin

14.6. Special precautions for user
: See transport documents.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
: Not applicable.

SECTION 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
: Ensure all national/local regulations are observed.

15.2. Chemical Safety Assessment
: Not applicable

SECTION 16. Other information

List of relevant R phrases (heading 3) : R22 - Harmful if swallowed.
R38 - Irritating to skin.
R41 - Risk of serious damage to eyes.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 - Harmful : may cause lung damage if swallowed.

List of relevant H phrases (Section 3) : H302 - Harmful if swallowed.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H412 - Harmful to aquatic life with long lasting effects.

Print date : 25 / 6 / 2014

Further information : None.

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