1. IDENTIFICATION OF COMPANY & PRODUCT

Product Name: Pendimethalin 30 % EC
Chemical Name: N-(1-ethylpropyl)-2, 6-dinitro-3, 4-xylidine
Brand Name: PENDEE
Users: Herbicide
Molecular Formula: C13H19N3O4
Manufacturer: CROP LIFE SCIENCE LTD.
Address: Plot No. 5165, 5166, 5151, G.I.D.C., Ankleshwar-393002
Gujarat, India
Tele Fax Number: 91 2646 238479

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Cas #</th>
<th>Percent Or Content(W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pendimethalin</td>
<td>40487-42-1</td>
<td>30.00%</td>
</tr>
<tr>
<td>Blend of ionic and nonionic emulsifiers</td>
<td>---</td>
<td>7.00 %</td>
</tr>
<tr>
<td>Aromatic Solvent (solvent Naphtha)</td>
<td>---</td>
<td>63.00%</td>
</tr>
</tbody>
</table>

3. HEALTH HAZARDS IDENTIFICATION

Toxicity class: WHO (a.i) III; EPA (Formulation) III
NOEL: 100mg/kg-2year feeding trials.
Main hazard: Pendimethalin is highly toxic to aquatic organisms.

Biological hazards:
Eye contact: May cause irritation.
Skin contact: Not a skin irritant.
Ingestion: May cause nausea, vomiting, and diarrhea.
Inhalation: May cause irritation

4. FIRST AID MEASURES

Ingestion: Remove by gastric lavage and catharsis. Maintain blood pressure and airway. Give oxygen if respiration is depressed. Do not perform gastric if victim is unconscious. Get medical attention immediately.
Inhalation: Remove the victim from exposure area to fresh air immediately. If breathing stops, apply artificial respiration. Keep person warm and at rest. Call for medical attention immediately.

Eyes: Flush eyes immediately with plenty of water during 15 minutes at least. Get medical attention immediately.

Skin: In case of contact with product, wash immediately skin area with plenty of water and soap. Remove material from skin. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

Extinguishing media: Foam, carbon dioxide, dry chemical, and water spray.

Fires: Use as little water as possible. Dike area of fire to prevent pesticide run-off. Do not contaminate personnel or equipment, or handle broken packages or container without protective equipment. Avoid breathing vapors or fumes from burning materials, Control run-off water. If water enters drainage system advise authorities downstream.

Hazardous decomposition products: Combustion may produce carbon and nitrogen oxides.

UNRESTRICTED - May be shared with anyone.

Protective clothing: Wear chemical goggles, rubber gloves and impermeable clothing. Wear a pesticide cartridge respirator.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary people away. Isolate hazard area and deny entry. Do not smoke; avoid contact and inhalation of closed splices before entering.

Precautions for the environment: Avoid dispersion. Isolate discharged material and keep material out of water sources. Prevent product from entering drains.

Personal Protection: Wear suitable chemical protective clothing, boots, natural rubber gloves, goggles and respiratory protective mask.

Cleanup Methods: Wear protective equipment.

Spillage/Disposal: Absorb on inert absorbing material. Shovel up into covered containers for disposal.

Large spillage: Should be dammed-off and pumped into containers, soak up remainder with absorbent material and dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

General Precautions: Do not smoke, drink, or eat during handling. Wash hands using liquid detergent. Wear protective clothing to avoid contact and/or inhalation with the product. Eliminate all sources of
ignition from areas where the material is handled or used. Good personal hygiene procedures must be practiced.

Specific Conditions: Good local exhaust ventilation. Full face protective mask.

Storage: Place in cool and ventilated areas. Store in area designated specifically for pesticides and keep away from excessive heat. Properly keep away from food and drink. Firefighting measures in storage areas. Incompatible materials: Avoid from Strong oxidizers and extremely acidic and alkaline conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Full face protective mask.
Eye Protection: Safety goggles or face shield is recommended.
Skin Protection: Natural rubber gloves and appropriate protective clothing necessary to prevent skin contact with the product.
Protective clothing: Chemical resistant gloves, coveralls, apron and foot coverings.
User safety recommendations: Safety showers and eye wash should be easily accessible.
Exposure Limits: No occupational Exposure Limits Established By OSHA, ACGIH, or NIOSH.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Brown to dark Yellow liquid
- Specific Gravity: 0.980 (+/- 0.05) g/ml
- Odor: Mild aromatic solvent odor.
- Acidity as H2SO4: < 5.0 g/Kg
- Vapor Density (Air=1): 0.021
- Vapor Pressure (mm): 20.7
- pH: Not available
- Solubility in Water: Emulsifiable
- Stability: Stable.

10. STABILITY AND REACTIVITY

Exposure to flames and temperature above 35°C.
Storage stability: Stable in a secure, dry, well-ventilated separate area, away from children, livestock and
food products. Avoid excessive heat and direct sunlight.

**Incompatibility:** Strong alkaline material, acid or oxidizing materials.

**Hazardous decomposition products:** None under normal storage conditions. Combustion may produce oxides of carbon, nitrogen and hydrochloric acid.

### 11. TOXICOLOGICAL INFORMATION

- **Acute oral LD50:** > 2000 mg/kg
- **Acute dermal LD50:** > 2000 mg/kg
- **Acute inhalation LC50:** No data available.
- **Acute skin irritation:** No skin irritation.
- **Acute eye irritation:** Mild eye irritation.
- **Dermal sensitization:** Not a dermal sensitizer.
- **Carcinogenicity/Teratogenicity/Mutagenicity:** None

### 12. ECOLOGICAL INFORMATION

- **Birds (LD50):** Not toxic for birds.
- **Mallard duck:** 1421 mg/kg
- **Fish LC50:** Pendimethalin is very toxic to fish.
- **Rainbow trout:** 0.14 mg/l
- **Blue gill sunfish:** 0.2 mg/l
- **Daphnia magna LC50:** > 1.0 mg/l
- **Earthworms:** No data available.
- **Bees LD 50:** >50 µg/Bee (Topical).

**FATE AND BEHAVIOUR IN SOIL:**

- **Rate of degradation:** The product is not subject to microbial degradation. When using according to label instructions, no carry over to subsequent crops is expected. The soil half-life is 90 days.
- **Adsorption/desorption:** The product adsorbs strongly to soil organic matter and clay and does not leach the soil to contaminate ground water.

**FATE AND BEHAVIOUR IN WATER:**

- **Rate and route of degradation:** Pendimethalin is stable to hydrolysis but it is degraded by light in aquatic systems. The product may be removed from water by its strong tendency to bind to sediment and organic matter. It is rapidly degraded in sediment.
FATE AND BEHAVIOUR IN AIR:
Rate and route of degradation: Slight losses of Pendimethalin can result from photodecomposition and volatization.

13. DISPOSAL CONSIDERATIONS

To avoid disposal, all attempts should be made to utilize the product completely, in accordance with its intended and/or registered use. If this is not possible, handle with care, and dispose in a safe manner.

Controlled incineration:
Recommended disposal method for this product is: Incineration.
Residues and waste must be disposed of according to local regulations. Do not contaminate ponds, waterways or ditches with chemical or used container.

Package product wastes: Triple rinse containers and pour rinse into spray tank for further use. Container and waste must be disposed of in accordance with local regulations. Do not use empty container for any other purpose.

14. TRANSPORT INFORMATION

UN NUMBER: 3082
ADR/IRD:
Substance ID no. : 3082
Substance name: Environmentally hazardous substance liquid, n.o.s. (Pendimethalin 30%).
Hazard ID no. : 90
Label: 9
Item no: 11

IMDG/IMO
Packaging group: III
Label of class: 9 Marine pollutant.
Shipping name: Environmentally hazardous substance liquid, n.o.s. (Pendimethalin 30%).

AIR/IATA
Shipping name: Environmentally hazardous substance liquid, n.o.s. (Pendimethalin 30%).
Class: 9
Hazard Label: Miscellaneous.
Packaging Group III
Passenger Aircraft Y914 (30kg), 914 (No limit).
Cargo Aircraft 914 (No limit)
**Tremcard number:** 90GM6-III

### 15. REGULATORY INFORMATION

**Symbol:** Xn, N
**Indication of danger:** Harmful, Dangerous for the environment
**Risk phrases:**
- R22 Harmful if swallowed.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases:**
- S2 Keep out of the reach of children.
- S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

**National legislation:** In accordance with the South African National Road Traffic Act, 1996 (Act 93 of 1996), the Fire Brigade Act, 1987 (Act 99 of 1987)

### 16. OTHER INFORMATION

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or nonstandard uses of the product or where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.