CLOPYRALID

CONTAINS 200 G/L (18 % W/W) CLOPYRALID IN A SOLUBLE CONCENTRATE FOR THE POST-EMERGENCE CONTROL OF CERTAIN BROAD-LEAVED WEEDS, ESPECIALLY MAYWEEDS AND CREEPING THISTLE, IN A RANGE OF AGRICULTURAL CROPS.

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL HERBICIDE

Crops:
- Sugar beet, red beet, fodder beet, mangel, swede and turnip
- Oilseed rape

Maximum individual dose (litres product per hectare): 1.0
Maximum total dose (litres product per hectare): 1.5 per crop
Latest time of application:
- Sugar beet, red beet, fodder beet, mangel, swede and turnip: When crops meet between the rows (BBCH 39)
- Oilseed rape: Before flower buds visible from above the crop canopy

Applications must not be made earlier than 1 March in the year of harvest.

Extreme care must be taken to avoid spray drift on to non-crop plants outside of the target area.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS

SAFETY PRECAUTIONS

WASH CONCENTRATE from skin or eyes immediately.
DO NOT BREATHE SPRAY.
WASH HANDS AND EXPOSED SKIN before meals and after work.
To avoid risks to man and the environment, comply with the instructions for use.

Environmental protection
DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container.

Storage and disposal
KEEP OUT OF THE REACH OF CHILDREN.
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.
THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.
WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank, and dispose of safely.

APPROVAL HOLDER AND MARKETING COMPANY: Life Scientific Limited, NovaUCD, Belfield Innovation Park, University College Dublin, Belfield, Dublin 4, Ireland Tel: +353 (0) 1 2832024

TRANSPORT INFORMATION: This product is not regulated for any mode of transportation.

THE (COSHH) CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS MAY APPLY TO THE USE OF THIS PRODUCT AT WORK.

FOR 24 HOUR EMERGENCY INFORMATION CONTACT +353 (0) 1 2832024

PROTECT FROM FROST  MADE IN EU  SHAKE WELL BEFORE USE  BATCH NO.  NET CONTENTS: 1 LITRE
DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Life Scientific Clopyralid may be used on the crops listed in the table.

GENERAL CONDITIONS APPLYING TO ALL RECOMMENDED USES

- Do not use plant material treated with ‘Life Scientific Clopyralid’ for composting or mulching.
- Do not use manure from animals fed on crops treated with ‘Life Scientific Clopyralid’ for composting.
- Contract agents should be consulted before using on crops grown for seed.
- Treat only vigorous, healthy crops growing under good soil and weather conditions.
- Do not treat diseased crops or those suffering pest attack.
- Do not apply during very hot or very cold or frosty weather.
- Do not treat crops suffering herbicide damage, waterlogging, drought or other stress.
- Delay application if rain is likely within 8 hours; apply only to dry foliage; do not irrigate for at least 24 hours.
- Do not cultivate, roll or harrow crops within 7 days of treatment. If creeping thistle or other perennial weeds are amongst the target weeds, this interval must be extended to 14 days.
- Do not cut grass on treated areas for at least 7 days after application.

MODE OF ACTION

Life Scientific Clopyralid is a selective, systemic herbicide, effective against a range of annual broad-leaved weeds primarily via foliar uptake. Uptake via the soil is not an important route of uptake for weed control although it is an important consideration when applying the product if certain sensitive plants are in the environs and when considering following cropping.

WEED CONTROL

Broad-leaved weeds controlled by Life Scientific Clopyralid at 0.5 l/ha under good conditions:

- Black-bindweed MS up to 1 true leaf
- Groundsel S up to 4 true leaves
- Marigold, corn S up to 2 true leaves
- Mayweed spp. S up to 4 true leaves
- Sowthistle, smooth S up to 2 true leaves
- Thistle, creeping (from seed) MS up to 4 true leaves

S = susceptible  MS = moderately susceptible

Control of the weed spp. in particular may be reduced if the weeds are under moisture stress at application.

Optimum control of established, perennial creeping thistle is given by employing two applications, using a 0.5 l/ha + 1.0 l/ha spray programme - see ‘TIME OF APPLICATION FOR WEED CONTROL’ table.

TIME OF APPLICATION FOR THE CROP

1 Sugar beet, fodder beet, red beet, mangels, Swede and turnip

Life Scientific Clopyralid can be used from the fully expanded true-leaf stage of the crop. Do not apply later than 6 weeks before harvest. For the control of creeping thistle apply 0.5 litres in 200 to 250 litres of water per hectare at the rosette stage, followed by a second application of 1.0 litres in 200 to 250 litres of water per hectare three to four weeks later.

2 Winter and spring oilseed rape

Life Scientific Clopyralid can be used from the fully expanded true-leaf stage of the crop. Do not apply later than 6 weeks before harvest. For the control of creeping thistle apply 0.5 litres in 200 to 250 litres of water per hectare at the rosette stage, followed by a second application of 1.0 litres in 200 to 250 litres of water per hectare three to four weeks later.

Applications must not be made earlier than 1st March in the year of harvest.

TIME OF APPLICATION FOR WEED CONTROL

<table>
<thead>
<tr>
<th>Situation</th>
<th>Time of application and remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter oilseed rape</td>
<td>For the control of creeping thistle apply Life Scientific Clopyralid at 0.5 L/ha at the rosette stage (up to 30 cm across), followed by a second application three to four weeks later of 1.0 litre in 200 to 250 litres of water per hectare.</td>
</tr>
<tr>
<td>Perennial Weed Control</td>
<td>For annual weeds apply Life Scientific Clopyralid in the spring at 0.5 L/ha in 200 to 250 litres of water per hectare. In competitive crops of oilseed rape mayweeds up to 10 cm in diameter will be well controlled by Life Scientific Clopyralid at 0.5 L/ha. Apply in a water volume of 200 to 400 L/ha.</td>
</tr>
<tr>
<td>Annual Weed Control</td>
<td>For annual weeds apply Life Scientific Clopyralid at 0.5 litres in 200 to 250 litres of water per hectare. For creeping thistle apply Life Scientific Clopyralid at 0.5 litres/ha at the rosette stage followed by a second application three to four weeks later of 1.0 litre in 200 to 250 litres of water per hectare.</td>
</tr>
<tr>
<td>Spring oilseed rape</td>
<td>For annual weeds apply Life Scientific Clopyralid at 0.5 litres in 200 to 250 litres of water per hectare. For creeping thistle apply Life Scientific Clopyralid at 0.5 litres/ha at the rosette stage followed by a second application three to four weeks later of 1.0 litre in 200 to 250 litres of water per hectare.</td>
</tr>
<tr>
<td>Sugar beet, fodder beet, red beet, mangels, Swede and turnip.</td>
<td>Primary spray Apply whilst the weeds are still small and growing vigorously under good soil and weather conditions. Apply 0.5 L/ha to creeping thistle at the early rosette stage. Second spray Apply 3-4 weeks after the first spray at 1.0 L/ha to reinforce that application and catch any recently emerged shoots.</td>
</tr>
</tbody>
</table>
UNDERSOWN CROPS
Life Scientific Clopyralid may be used on the listed crops undersown with grass leys when these are firmly established, but must not be used on leys containing clovers or other legumes. All species of the family Papilionaceae are highly susceptible to clopyralid.

SPRAY APPLICATION
Apply Life Scientific Clopyralid as a MEDIUM spray (BCPC) in the recommended volume of water as below. Use sufficient water to enable complete penetration of the crop to ensure good coverage of the weeds. Avoid spray drift out of the area being treated. Avoid spray drift onto susceptible crops (e.g. seed potatoes). Do not spray in windy weather. Avoid overlapping spray swaths.
Sugar beet, fodder beet, red beet, mangels: 200-250 litres water per ha. Winter and spring oilseed rape: 200-250 litres water per ha.

SPRAY MIXING
Add the required quantity of Life Scientific Clopyralid to the bulk of the water in the spray tank whilst under agitation. Top up the spray tank with water and keep under constant agitation until spraying is complete. Thoroughly clean all equipment after use as per ROUTINE SPRAYER MAINTENANCE below.

COMPATIBILITY
Life Scientific Clopyralid is compatible in tank-mix with one of the approved products listed below. When tank-mixing Life Scientific Clopyralid with a partner follow the Directions for Use and Precautions of the partner product together with those of this label. Mix the partner product in the spray tank first and then mix in Life Scientific Clopyralid secondly. Keep under constant agitation and use immediately after mixing.

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>MAPP</th>
<th>Associated crop or use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metamitron</td>
<td>12851</td>
<td>Sugar beet, fodder beet, red beet and mangels</td>
</tr>
</tbody>
</table>

PROCESSED CROPS
Processors should be consulted before treating crops in which they have an interest.

ADJACENT CROPS AND FOLLOWING CROPS
Plants of the families Umbelliferae, Compositae and Papilionaceae are amongst those particularly susceptible to clopyralid and may be damaged if Life Scientific Clopyralid is allowed to drift onto them or is sprayed within their rooting zone or if crops of these families closely follow treated crops.

Important susceptible crops or plants
- Umbelliferae: Carrot, parsnip
- Compositae: Lettuce, many ornamentals
- Papilionaceae: Beans, peas, clovers, lucerne, many ornamentals
- Others: Potato, glass-house and protected crops.

A susceptible crop must not be sown or planted in the calendar year of treatment or until a minimum 9 months have elapsed after last application if sowing or planting in the following year.

Straw and other plant remains and farmyard manure derived from crops treated with Life Scientific Clopyralid may contain residues that could damage certain crops. It is advised that, where possible, crop residues are removed to hasten the reduction of soil clopyralid residues on land scheduled for a susceptible crop. If removal or destruction is not possible, incorporating the old crop residues into the soil as soon as possible after harvest is recommended. It is essential that all previous crop residues, including applied farmyard manure derived from a treated crop, have completely decayed before planting any susceptible crop.

ROUTINE SPRAYER MAINTENANCE
Thoroughly clean all equipment immediately after use with water and a wetting agent. Spray out the cleaning solution, fill with clean water and leave overnight. Spray out before storing or further use. Traces of herbicide can damage susceptible crops.

COMPANY ADVISORY INFORMATION
This section is not part of Regulation (EC) 1107/2009. It provides additional advice on product use at the discretion of the applicant.

CONDITIONS OF SUPPLY
All goods supplied by the company are of good quality and we believe them to be fit for purpose. However, as we cannot exercise control over their storage, handling, mixing or use, or over the weather conditions before, during and after application, which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded, and no responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.
SAFETY DATA SHEET
LIFE SCIENTIFIC CLOPYRALID

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

1.1 Product Identifier

Product Name: Life Scientific Clopyralid
Product Description: Soluble Concentrate
Chemical description of active substance(s): 3,6-Dichloro-2-pyridinecarboxylic acid
Chemical Family: Picolinic acid
GCPF code: SL (Soluble Concentrate)

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

Product Use: Agriculture - Herbicide

1.3 Details of the supplier of the safety data sheet

Company: Life Scientific Ltd, NovaUCD, Belfield Innovation Park, Dublin 4, Ireland
Telephone: +353 (0) 1 2832024
Fax: +353 (0) 1 2832026
Web: www.lifescientific.com

1.4 Emergency contact information

In case of Emergency: www.npis.org
www.nhsdirect.nhs.uk - 0845 4647 or 111

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
This substance has no classification under Regulation (EU) 1272/2008

Classification according to EU Directives 67/548/EEC or 1999/45/EC
This substance has no classification under EU Directives 67/548/EEC or 1999/45/EC

2.2 Label Elements

Safety phrases:
S2 Keep out of reach of children.
S20/21 Do not eat, do not drink and do not smoke during use.
S25 Do not breathe gas / fumes / vapour / spray.
S35 This material and its container in a safe way.
S46 If swallowed, seek medical and show this container or label.
S60 This material and its container are hazardous waste.
S61 Avoid release to the environment. Refer to special instructions / Safety Data Sheet.

2.3 Other Hazards

No Information available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

None

3.2 Mixtures

Chemical Name: Clopyralid monoethaneolamine salt
CAS No: 57754-85-5
EC No: 260-929-4
Classification (67/548/EEC): None
Classification (Regulation (EC) No 1272/2008): None
Concentration (% w/w): 23

4. FIRST AID MEASURES

4.1 Description of first aid measures

General information: In the event of any complaints or symptoms, avoid further exposure. Treat symptomatically. If unwell, consult a physician showing the product container, label or this safety data sheet.

Inhalation: If inhaled, remove victim to fresh air. Consult a physician or Poison Control Centre immediately.

Ingestion: DO NOT induce vomiting unless directed to do so by a Poison Control Centre/Physician.

Skin contact: Wash skin immediately with plenty of water. If skin irritation persists, consult a physician.

Eye contact: Remove contact lenses if present. Rinse immediately with plenty of water, with the eyelid open for at least 15 minutes.

Most important symptoms and effects, both acute and delayed

4.2 Indication of any immediate medical attention and special treatment needed

Notes to physicians: No generally considered hazardous. Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

For small fires: Use water spray, dry chemical, alcohol-resistant foam or carbon dioxide.
For large fires: Use alcohol-resistant foam or water spray. Avoid using a solid water stream as it may cause the fire to scatter or spread.

5.2 Special hazards arising from the substance or mixture

This product contains combustible organic components. Fire will produce a thick black smoke containing hazards products of combustion. Exposure to products of combustion may be a health hazard. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Wear self-contained breathing apparatus with full face shield. Fight fire from a safe distance and a protected location.
6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Use appropriate personal protective equipment (see section 8). For safe handling and storage, (see section 7).

6.2 Environmental precautions
Prevent further leaking or spillage if safe to do so. Prevent entry into sewers and public waters. Make provisions to collect extinguishing water after fires. If the product contaminates rivers and lakes or drains, inform respective authorities.

6.3 Methods and materials for containment and cleaning up
Contain spillage. Use non-combustible absorbent material to absorb spillage and place in container for disposal according to local/national legislation.

6.4 Reference to other sections
See Section 7 for information on handling and storage and Section 8 for information on PPE.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
No special technical protective measures required. No special handling advice required. Read label before use. DO NOT eat, drink or smoke during use. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities
No special storage conditions required. Keep containers tightly closed in a cool, dry and well-ventilated area. Keep out of reach of children. Keep separate from food, drink and animal feed.

7.3 Specific end use(s)
None.

8. EXPOSURE CONTROL/PERSONAL PROTECTION
8.1 Control parameters
None Established

8.2 Exposure controls
Respiratory protection: Protection provided by air-purifying respirators is limited. A combination gas, vapour and particulate respirator may be necessary until effective technical measures are introduced. Use self-contained breathing apparatus in case of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

Skin protection: Wear suitable chemical-resistant clothing based on the potential for skin contact.

Hand protection: Use nitrile rubber or other suitable chemical-resistant gloves. Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure. Gloves should be changed when breakthrough is suspected.

Eye protection: Eye protection is not usually required. Follow any site-specific eye protection policies.

Engineering measures: Good general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations to maintain airborne levels below exposure limit requirements or guidance.

Hygiene measures: When using, DO NOT eat, drink or smoke. Wash hands and face with soap and water before breaks. Shower at the end of the workday. Decontaminate protective clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties
Appearance
Form: Liquid
Colour: Clear to Pale Brown
Odour: Odourless

Chemical properties
pH (at 20 °C): 7.41 (1% aqueous solution)
Boiling point (°C): 100
Melting point (°C): Not applicable
Oxidising properties: No test data available
Explosive properties: No test data available
Density (g/cm3): 1.113
Flash point (°C): > 79
Solubility in water: Miscible
Log P octanol/water at 20°C: No data available

9.2 Other Information
None.

10. STABILITY AND REACTIVITY
10.1 Reactivity
None.

10.2 Chemical Stability
Stable under normal storage conditions.

10.3 Possibility of hazardous reactions
None known.

10.4 Conditions to avoid
Heat

10.5 Incompatible material
Will not occur

10.6 Hazardous decomposition products
Can include carbon monoxide, carbon dioxide, hydrogen chloride and nitrogen oxides. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
LD₅₀ oral rat 5000 mg/kg.
LD₅₀ percutaneous rabbit > 2000 mg/kg.
LC₅₀ inhalation rat > 1.96 mg/L/4 h.
Eye irritation rabbit: Temporary slight
Skin irritation rabbit: Slightly irritating.
Sensitisation: Non Sensitising
Long-term toxicity: No evidence of carcinogenic, teratogenic or mutagenic effects in animal experiments.

12. ECOLOGICAL INFORMATION
12.1 Toxicity
LC₅₀ Bluegill sunfish (96 h): 125 – 4686 mg/L
EC₅₀ Daphnia magna (48 h): 225 – 1133 mg/L
LD₅₀ Mallard duck: 1465 – 2000 mg/L
LD₅₀ Honey bee: >100 µg/bee (oral and contact)

12.2 Persistence and degradability
Clopyralid is not persistent in soil.
Clopyralid is not persistent in water.

12.3 Bioaccumulative potential
Clopyralid has low potential for bioaccumulation.

12.4 Mobility in soil
Clopyralid has very high mobility in soil.

12.5 Results of PBT and vPvB Assessment
This substance is not considered to be persistent, bioaccumulating or toxic (PBT), nor is it considered very persistent or very bioaccumulating (vPvB)

12.6 Other adverse effects
None

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods
Waste disposal procedures: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Dispose of in compliance with local regulations.

Contaminated packaging: Empty remaining contents. Triple rinse containers. Do not re-use empty containers. Empty containers should be disposed of in compliance with local regulations.

14. TRANSPORT INFORMATION
Product is not classified as hazardous for Rail/Sea/Air/Road Transportation.

14.1 UN Number
Not Applicable

14.2 UN proper shipping name
Not Applicable

14.3 Transport hazard class(es)
Not Applicable

14.4 Packing group
Not Applicable

14.5 Environmental hazards
Not Applicable

14.6 Special precautions for user
Not Applicable

14.7 Transport in bulk according to Annex II of Marpol 73/78 and the IBC code
Not Applicable

15. REGULATORY INFORMATION
15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture
None

15.2 Chemical safety assessment
None

16. OTHER INFORMATION
First Issuance: 08.01.2014
Current Issuance: 08.01.2014

DISCLAIMER: The information presented in this document is accurate to the best of our knowledge at the date of its publication. However, the information given is designed only as a guide for the methods of handling, storage, use, transportation and disposal of the product and is not considered a warranty or quality specification. Life Scientific Limited cannot be held responsible for any loss or damage resulting from the handling, storage, use or disposal of the product. The information contained in this document relates only to this specific product.