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MATERIAL SAFETY DATA SHEET

4/2/14

| 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING | | |
|--|---|----|
| Supplier | DOW AGROSCIENCES (PTY) LTD Private Bag X160, Bryanston. 2021 | |
| SPILLAGES: | | |
| Emergency telepho: Fax | ne (+27) 32 5330716 or 082 887 8079 (+27) 32 5336134 | |
| Fax | (+27) 52 5550134 | |
| POISONINGS: | | |
| National Poison Centre 021-9386084 (office hours). | | |
| 021-9316129 (after hours). | | |
| UOFS Pharmacology/Toxicology information centre: 0824910160 | | |
| 0021910100 | | |
| Product Name: LONTREL* 100 SL HERBICIDE | | |
| LV70: 45414 | Issue Date: Nov. 93 Ref: H851 | lS |
| Revised: March 20 | 10 | |

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components contributing to hazard:

Clopyralid Inert ingredients Composition Code NIOSH/RTECS no UN no

100 g/L Balance EF1136 TJ7550700 Not Regulated CAS EINECS 001702-17-6 216-935-4

3. HAZARDS IDENTIFICATION

No known hazard.

4. FIRST-AID MEASURES

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Ingestion

Do not induce vomiting. Call a physician. The decision of whether to induce vomiting or not should be made by an attending physician.

Eye Contact

Flush with plenty of water.

Skin Contact

Wash thoroughly with soap and water.

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Inhalation

Remove to fresh air. Consult a physician.

Note to Physician

No specific antidote. Supportive care. Treatment based on judgement of physician in response to symptoms of patient.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Water fog or fine spray. Carbon dioxide. Dry chemical. Foam.

Hazardous Combustion Products

During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds.

Protection of Firefighters

Wear protective clothing and use self-contained breathing apparatus.

Additional Information

Keep containers cool by spraying with water. Contain runoff to prevent entry into water or drainage systems.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear appropriate safety clothing and eye/face protection (see Section 8).

Environmental Precautions

Do not wash into sewers or into any body of water. Advise water authority if spillage has entered water course or drainage system.

Methods of Cleaning Up

Soak up with sand or other non-combustible absorbent material and place into containers for disposal. For large spills, barricade area and consult manufacturer. If further assistance is required, telephone the emergency contact number.

7. HANDLING AND STORAGE

Handling

Use good personal hygiene. Do not consume or store food in the work area. Wash hands and exposed skin before eating, drinking or smoking and after work.



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Storage

Product should be stored in compliance with local regulations. Store in a cool, dry, well-ventilated place in the original container. Protect from excessive heat and cold. Do not store near food, drink, animal feeding stuffs, pharmaceuticals, cosmetics or fertilisers. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Clopyralid: DowElanco IHG is 10 mg/m3

Engineering Controls

Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

Respiratory Protection

For most conditions, no respiratory protection should be needed. However, if respiratory irritation is experienced use an approved airpurifying respirator. For emergency conditions, use an approved positive-pressure selfcontained breathing apparatus.

Hand/Skin Protection

Wear clean, long-sleeved, body-covering clothing. For emergency conditions: Use protective clothing impervious to this material.

Eye/Face Protection

Use safety glasses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colour Rel. density (water=1) Freezing point/range Boiling point/range Water solubility Flash point : liquid : brown : 1.05 g/cm3 (approx.) : <-5 deg.C : 100 deg.C (approx.) : miscible : none

10. STABILITY AND REACTIVITY

Chemical Stability

Is stable under normal storage conditions.

Conditions to Avoid

Avoid extremes of temperature.



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Materials to Avoid

Strong basic, acidic or oxidising materials.

Hazardous Decomposition Products

None under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Based on data for similar formulation.

Ingestion

Single dose oral toxicity is low. The estimated oral LD50 for rats is >2000mg/kg.

Skin Contact

The estimated dermal LD50 for rats is >2000mg/kg. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Prolonged or repeated exposure is not likely to cause significant skin irritation.

Sensitisation

Non-sensitising to guinea pig skin.

Eye Contact

Essentially non-irritating to eyes.

Inhalation

No adverse effects anticipated by this route of exposure incidental to proper handling.

12. ECOLOGICAL INFORMATION

Assessment largely or completely based on data for active ingredient.

Persistence and Degradability

The principle route of degradation is microbial and will occur readily. Half-life in soils is dependent on soil type and conditions and is approximately 12-62 days.

Aquatic Toxicity

Material is practically non-toxic to fish on an acute basis (LC50 >100mg/L) Material is practically non-toxic to aquatic invertebrates on a static acute basis (LC50 >100mg/L).

Avian Toxicity

Material is slightly toxic to birds on an acute basis (500mg/kg $<\!\!\text{LD50}<\!\!2000mg/kg$).



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Other Information

Non-toxic to bees.

13. DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or ditches with chemical or used container. Wash out thoroughly. Container and washings must be disposed of safely and in accordance with applicable regulations. The preferred options are to send to licensed reclaimer or to permitted incinerators. Do not re-use container for any purpose.

14. TRANSPORT INFORMATION

Product is not classified for any mode of transportation.

15. REGULATORY INFORMATION

Hazard Symbol : None Required

Risk Phrases : None required.

Safety Phrases : Keep out of reach of children. (S2) Keep away from food, drink and animal feeding stuffs. (S13)

When using do NOT eat, drink or smoke. (S20/21) 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) and the Occupational Health and Safety Act, 1993 (Act. No. 85 of 1993)

16. OTHER INFORMATION

REFERENCES

- Applicable to own physical and chemical, toxicity and ecotoxicity research studies.
- Dangerous Goods Regulations, IATA, 47th Edition Effective 1 January 2006.
- IMDG CODE, VOL.2, 2005 Edition.
- ADR-Vol. 1, 1 January 2005.
- SABS 0265:1999.
- ECB-ECIS (European chemical Substances Information System).

All information and instructions provided in this Material Safety Data Sheet MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and is presented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. It is the responsibility of persons in receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product.