

MATERIAL SAFETY DATA SHEET

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Revised edition no : 2

Date : 7 / 7 / 2009

Supersedes : 1 / 4 / 2008

CLODINAGAN

H-0113

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Trade name : CLODINAGAN
Chemical description : Clodinafop-propargyl: prop-2-ynyl (R)-2-[4-(5-chloro-3-fluoropyridin-2-yloxy)phenoxy]propionate
Use : Herbicide.
Company identification : Makhteshim Agan SA (Pty) Ltd
21 Viben Street
PO Box 498
Brackenfell 7561
info@makhro.com
Emergency phone nr : +27-21-9821460

2. HAZARDS IDENTIFICATION

Human health hazards : Harmful if swallowed. Harmful: may cause lung damage if swallowed.
Environmental hazard : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance name	Value(s)	CAS No	EC No	Index No	Classification
Clodinafop-propargyl	: 21 - 23 %	105512-06-9	-----	-----	Xn; R22-48/22 R43 N; R50-53
Naphtha solvent heavy petroleum	: 50 - 55 %	64742-94-5	265-198-5	649-424-00-3	Xn; R65

4. FIRST AID MEASURES

First aid
Inhalation : Remove victim to fresh air. If breathing is difficult: artificial respiration. Get medical attention.
Ingestion : Wash out mouth with plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.
Skin contact : Remove contaminated clothing and shoes. Wash away remainder with plenty of water.
Eye contact : Wash out with plenty of water with the eyelid held wide open for at least 15 minutes. Get medical attention.
Note to physician : No specific antidote known. Treat symptomatically and give supportive therapy.
Protection of first-aiders : Use appropriate protection (see section 8).

5. FIRE-FIGHTING MEASURES

Extinguishing media : For small fire : dry chemical powder, water spray, carbon dioxide.
For large fire : foam, water fog, water spray.
Hazardous decomposition products : Chloride compounds, carbon oxides (CO and CO₂) fluorides, nitrogen oxides.
Protection of fire-fighters : Self-contained breathing apparatus and total protection required in enclosed areas.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear suitable protective clothing, gloves and eye/face protection.
Environmental precautions : Do not empty into drains Do not discharge into the environment.
After spillage and/or leakage : Absorb in sand or other inert material. Collect spills and put it into appropriated container. Dispose of this material and its container at hazardous or special waste collection point.

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7. HANDLING AND STORAGE

- Handling** : Ventilation required.
- Storage** : Keep in original containers. Keep away from food, drink and animal feeding stuffs.
Store in dry, well-ventilated area.
- Precautions in handling and storage** : Handle in accordance with good industrial hygiene and safety procedures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering measures** : Ventilation required.
- Industrial hygiene** : Wash hands thoroughly after handling. When using do not eat, drink or smoke.
Wash clothing before re-using.
- Personal protection**
- **Respiratory protection** : Dust mask
 - **Skin protection** : Wear suitable protective clothing Wear safety boots.
 - **Hand protection** : Wear suitable gloves.
 - **Eye protection** : Chemical goggles or safety glasses.
- Occupational Exposure Limits**
- TLV** : Clodinafob-propargyl: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : Liquid
- Colour** : Light brown - Brown
- Odour** : Aromatic
- Boiling point [°C]** : 220-300 (Clodinafop-propargyl)
- Density [g/ml]** : 1.080±0.015 @ 20°C
- Viscosity** : 32.5 sec @40°C
- Vapour pressure [mPa]** : 1.94E-3 @ 25°C (Clodinafop-propargyl)
- Solubility in water** : Miscible
- Flash point [°C]** : 102.5
- Auto-ignition temperature [°C]** : >400 (Naphtha)
- Log P octanol / water** : 3.4 @ 25°C (Clodinafop-propargyl)
- Flammability** : Not flammable
- Explosion properties** : Not explosive
- Explosion limits - lower [%]** : 1.8
- Explosion limits - upper [%]** : 11.8
- Oxidation properties** : Not oxidizing

10. STABILITY AND REACTIVITY

- Stability** : Stable under normal conditions.
- Hazardous decomposition products** : Fluoride compounds carbon oxides (CO, CO2) chloride compounds, nitrogen oxides.
- Materials to avoid** : oxidizing agents, acids, alkali.

11. TOXICOLOGICAL INFORMATION

- On product** : **CLODINAFOF-PROPARGYL 240 EC**
- Rat oral LD50 [mg/kg]** : 2,000
- Rat dermal LD50 [mg/kg]** : > 2,000
- Rat inhalation LC50 [mg/l/4h]** : >5.05

Agan Chemical Manufacturers Ltd

P.O. Box 262 Ashdod ISRAEL

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11. TOXICOLOGICAL INFORMATION (continued)

Dermal irritation (rabbit)	: Mildly irritating
Eyes irritation (rabbit)	: Moderately irritating
Sensitization	: Non sensitizer
Carcinogenicity	: Clodinafop-propargyl: : EU : Not classified
Mutagenicity	: Clodinafop-propargyl: Not mutagenic
Teratogenicity	: Clodinafop-propargyl: Not teratogenic in animal experiments

12. ECOLOGICAL INFORMATION

On product	: CLODINAFOF-PROPARGYL 240 EC
96 H-LC50 - Rainbow trout [mg/l]	: 5
48 H-EC50 - Daphnia magna [mg/l]	: 12.9
72H- EC50 - Algae [mg/l]	: 1.8
LD50 Birds [mg/kg]	: Bobwhite quail >2,000
Bees LD50 [µg/Bee]	: Not toxic to bees
Persistence and degradability	: Clodinafop-propargyl: Soil : : The product is not persistent. Half-life time (t1/2) <2 days Half-life time (t1/2) (acid)=5-20 days : Clodinafop-propargyl: Water : : Half-life time (t1/2) (hydrolysis)= 2.2 hours -184 days
Mobility	: Clodinafop-propargyl: Soil : : Low mobility Moderately mobile (acid derivatives)

13. DISPOSAL CONSIDERATIONS

Disposal	: Dispose of in a pesticide approved landfill, or in a chemical incinerator equipped with scrubbers. Dispose in a safe manner in accordance with local/national regulations.
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14. TRANSPORT INFORMATION

- UN No.	: 3082
- Proper shipping name	: UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Clodinafop-propargyl), 9, III
- Packing group	: III
- Class	: 9
- H.I. nr :	: 90
- IMDG-Marine pollution	: YES

15. REGULATORY INFORMATION

EU Classification	: According to Commision Directive 67/548/EEC and its amendments
Symbol(s)	: Xn: Harmful. N: Dangerous for the environment.

