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| <p style="text-align: center;">MONSANTO Europe S.A. Safety Data Sheet Commercial Product</p> |
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Latitude®

Product use

Fungicide

Chemical name

Not applicable.

Synonyms

None.

Company/(Sales office)

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2. HAZARDS IDENTIFICATION

EU label (manufacturer self-classification) - Classification following the EU Dangerous Preparations' Directive 1999/45/EC.

Not classified as dangerous.

National classification - U.K.

Xi - Irritant, N - Dangerous for the environment

R43 May cause sensitization by skin contact.

R52 Harmful to aquatic organisms.

R53 May cause long-term adverse effects in the aquatic environment.

Potential health effects

Likely routes of exposure

Skin contact, eye contact

Eye contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Potential environmental effects

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

2-trimethylsilyl-4,5-dimethyl-3-thiophenecarboxylic acid allyl amide; {Silthiofam}

Composition

| Components | CAS No. | EINECS/ ELINCS No. | % by weight (approximate) | EU Symbols & R phrases of components |
|-------------------------------|-------------|-----------------------|------------------------------|---|
| Silthiofam | 175217-20-6 | | 12 | R52/53; {a} |
| Water | 7732-18-5 | 231-791-2 | 63 | |
| Minor formulating ingredients | | | 25 | |

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

Eye contact

Immediately flush with plenty of water.
If easy to do, remove contact lenses.

Skin contact

Wash affected skin with plenty of water.
Use soap if available.
Take off contaminated clothing, wristwatch, jewellery.
Wash clothes and clean shoes before re-use.

Inhalation

Remove to fresh air.

Ingestion

Immediately give a suspension of activated charcoal to drink.
Immediately get medical advice from a poison control center or doctor.

Advice to doctors

No symptoms diagnostic of systemic poisoning with this product.

5. FIRE-FIGHTING MEASURES

Flash point

Does not flash.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), sulphur oxides (SO_x), nitrogen oxides (NO_x), oxides of silica

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

Environmental precautions

SMALL QUANTITIES:
Low environmental hazard.
LARGE QUANTITIES:
Minimise spread.
Contain spillage with sand bags or other means.

Keep out of drains, sewers, ditches and water ways.
Notify authorities.

Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Wash spill area with detergent and water.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

When using do not eat, drink or smoke.

Wash hands thoroughly after handling or contact.

Thoroughly clean equipment after use.

Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.

Emptied containers retain vapour and product residue.

Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Storage

Minimum storage temperature: 0 °C

Maximum storage temperature: 30 °C

Compatible materials for storage: stainless steel, high-density polyethylene (HDPE), polypropylene (PP)

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

Minimum shelf life: 2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

| Components | Exposure Guidelines |
|-------------------------------|---|
| Silthiofam | No specific occupational exposure limit has been established. |
| Water | No specific occupational exposure limit has been established. |
| Minor formulating ingredients | No specific occupational exposure limit has been established. |

Engineering controls

No special requirement when used as recommended.

Eye protection

No special requirement when used as recommended.

Skin protection

If repeated or prolonged contact:

Wear chemical resistant gloves.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

| | |
|---|---|
| Colour/colour range: | Red |
| Odour: | Paint-like |
| Form: | Suspension |
| Physical form changes (melting, boiling, etc.): | |
| Melting point: | Not applicable. |
| Boiling point: | 100 °C |
| Flash point: | Does not flash. |
| Explosive properties: | No explosive properties |
| Auto ignition temperature: | 425 °C |
| Specific gravity: | 1.058 @ 20 °C / 4 °C |
| Vapour pressure: | No significant volatility. |
| Vapour density: | Not applicable. |
| Evaporation rate: | No data. |
| Dynamic viscosity: | 15.8 - 93.1 mPa·s @ 20 °C |
| Kinematic viscosity: | Not applicable. |
| Density: | 1.058 g/cm ³ @ 20 °C |
| Solubility: | Water: Completely miscible. |
| pH: | 8.7 @ 20 °C @ 10 g/l |
| Partition coefficient: | log Pow: 3.48 @ 20 °C (active ingredient) |

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Oxidizing properties

No data.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: > 5,000 mg/kg body weight/day

Target organs/systems: none

Other effects: none

No mortality.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight

Target organs/systems: none

Other effects: none

No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Redness, mean EU score: 0.22
Swelling, mean EU score: 0.00
Days to heal: 3

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Conjunctival redness, mean EU score: 0.06
Conjunctival swelling, mean EU score: 0.00
Corneal opacity, mean EU score: 0.00
Iris lesions, mean EU score: 0.00
Days to heal: 2

Skin sensitization

Guinea pig, maximisation test:

Positive incidence: 0 %

Active ingredient

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Mouse, oral, 60 days:

NOAEL toxicity: 1,000 mg/kg diet
Target organs/systems: liver
Other effects: decrease of body weight gain, organ weight change, haematological effects, histopathologic effects, blood biochemistry effects

Rat, oral, 3 months:

NOAEL toxicity: 250 mg/kg diet
Target organs/systems: liver
Other effects: decrease of food consumption, weight loss, decrease of body weight gain, organ weight change, haematological effects, histopathologic effects, blood biochemistry effects

Rat, dermal, 21 days:

NOAEL toxicity: 1,000 mg/kg body weight/day
Target organs/systems: none
Other effects: none

Chronic effects/carcinogenicity

Rat, oral, 23 months:

NOAEL toxicity: 100 mg/kg diet
Target organs/systems: liver
Other effects: decrease of food consumption, decrease of body weight gain, organ weight change, histopathologic effects, increased mortality, blood biochemistry effects
NOEL tumour: \geq 3,000 mg/kg diet
Tumours: none

Mouse, oral, 18 months:

NOAEL toxicity: 1,000 mg/kg diet
Target organs/systems: liver
Other effects: weight loss, decrease of body weight gain, organ weight change, histopathologic effects, blood biochemistry effects
NOEL tumour: 4,000 mg/kg diet
Tumours: liver, (adenoma), (carcinoma)
Tumours not relevant to man.

Toxicity to reproduction/fertility

Rat, oral, 2 generations:

NOAEL toxicity: 400 mg/kg diet
NOAEL reproduction: $>$ 4,000 mg/kg diet
Target organs/systems in parents: kidneys, liver
Other effects in parents: weight loss, decrease of body weight gain, histopathologic effects, decrease of food consumption, organ weight change
Other effects in pups: weight loss
Effects on offspring only observed with maternal toxicity.

Developmental toxicity/teratogenicity

Rat, oral, 6 - 15 days of gestation:

NOAEL toxicity: 50 mg/kg body weight/day
NOAEL development: 500 mg/kg body weight/day
Target organs/systems in mother animal: liver
Other effects in mother animal: organ weight change
Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 7 - 19 days of gestation:

NOAEL toxicity: 60 mg/kg body weight/day
NOAEL development: 60 mg/kg body weight/day
Other effects in mother animal: none
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product, similar products and on components are summarized below.

Arthropod toxicity

Honey bee (*Apis mellifera*):

Contact, 48 hours, LD50: > 837 µg/bee

Honey bee (*Apis mellifera*):

Oral, 48 hours, LD50: > 871 µg/bee

Similar formulation

Soil organism toxicity, microorganisms

Nitrogen and carbon transformation test:

80 g/ha, 28 days: No effect on soil microorganisms.

Active ingredient

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 14 mg/L

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 11 mg/L

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 14 mg/L

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 72 hours, static, ErC50 (growth rate): 13 mg/L

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,670 mg/kg diet

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,400 mg/kg diet

Japanese quail (*Coturnix coturnix japonica*):

Acute oral toxicity, LD50: > 2,250 mg/kg body weight

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: 133 mg/kg dry soil

Bioaccumulation

Rainbow trout (*Oncorhynchus mykiss*):

Whole fish: BCF: 98

Rapid depuration after end of exposure.

Photochemical degradation

Water:

Half life: 16 days

Dissipation

Soil, 20 °C:

Half life: 25 - 34 days

Water/sediment, aerobic, 20 °C:

Half life: 5 - 52 days

Biodegradation

Modified Sturm test:

Degradation: 2 % within 28 days

Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Product

- Recycle if appropriate facilities/equipment available.
- Burn in proper incinerator.
- Dispose of as hazardous industrial waste.
- Keep out of drains, sewers, ditches and water ways.
- Follow all local/regional/national/international regulations.

Container

- Empty packaging completely.
- Do NOT re-use containers.
- Dispose of as hazardous industrial waste.
- Store for collection by approved waste disposal service.
- Consult supplier for specialist advice.
- Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not regulated for transport.

15. REGULATORY INFORMATION

EU label (manufacturer self-classification) - Classification following the EU Dangerous Preparations' Directive 1999/45/EC.

Not classified as dangerous.

National classification - U.K.

Xi - Irritant, N - Dangerous for the environment

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|-----|--|
| R43 | May cause sensitization by skin contact. |
| R52 | Harmful to aquatic organisms. |
| R53 | May cause long-term adverse effects in the aquatic environment. |
| S24 | Avoid contact with skin. |
| S35 | This material and its container must be disposed of in a safe way. |
| S37 | Wear suitable gloves. |
| S57 | Use appropriate containment to avoid environmental contamination. |

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data. Follow all local/regional/national/international regulations. Please consult supplier if further information is needed.

This Safety Data Sheet has been prepared following the EU Directive 91/155/EEC as last amended by EU Directive 2001/58/EC.

In this document the British spelling was applied.

- ® Registered trademark.
- || Significant changes versus previous edition.

EU Symbols & R phrases of components

| Components | EU Symbols & R phrases of components |
|-------------------------------|--|
| Silthiofam | R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| Water | |
| Minor formulating ingredients | |

Endnotes:

- {a} EU label (manufacturer self-classification)
- {b} EU label (Annex I)
- {c} National classification

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

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