SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier
Trade name MOVENTO 100SC
Product code (UVP) 79036744

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use Insecticide
EPA-Nr. HSR100545

1.3 Details of the supplier of the safety data sheet
Supplier Bayer New Zealand Limited
3 Argus Place, Hillcrest
Auckland 0627
New Zealand
Telephone 0800 428 246
Telefax (09) 441 8645

1.4 Emergency telephone no.
Emergency Number 0800 734 607 (24hr)
Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001

6.5B H317 May cause an allergic skin reaction.

6.8B H361 Suspected of damaging fertility or the unborn child.

9.1C H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements
Labelling in accordance with Hazardous Substances Identification Regulations 2001
Hazard label for supply/use required.
Signal word: Warning

Hazard statements
H317 May cause an allergic skin reaction.
H361 Suspected of damaging fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards
No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature
Suspension concentrate (=flowable concentrate)(SC)
Spirotetramat 100 g/l

Hazardous components

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS-No.</th>
<th>Conc. [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirotetramat</td>
<td>203313-25-1</td>
<td>9.3</td>
</tr>
<tr>
<td>Alkylarylpolyglycol ether</td>
<td>104376-75-2</td>
<td>&gt; 1 – &lt; 25</td>
</tr>
<tr>
<td>Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one</td>
<td>55965-84-9</td>
<td>&gt; 0.0002 – &lt; 0.0015</td>
</tr>
<tr>
<td>1,2-Benzisothiazol-3(2H)-one</td>
<td>2634-33-5</td>
<td>&gt; 0.005 – &lt; 0.05</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>&gt; 1</td>
</tr>
</tbody>
</table>

Further information
Spirotetramat 203313-25-1 M-Factor: 1 (acute), 1 (chronic)

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures
General advice
Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation
Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact
Wash off thoroughly with plenty of soap and water, if available with polyethylene glycol 400, subsequently rinse with water. If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed
Symptoms
No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment
Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable
Water spray, Carbon dioxide (CO2), Foam, Sand

5.2 Special hazards arising from the substance or mixture
In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Nitrogen oxides (NOx)

5.3 Advice for firefighters
In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information
Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Precautions Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

6.2 Environmental precautions
Do not allow to get into surface water, drains and ground water.

6.3 Methods and materials for containment and cleaning up
Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Advice on safe handling Use only in area provided with appropriate exhaust ventilation.
Advice on protection against fire and explosion No special precautions required.
Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from frost.
Advice on common storage Keep away from food, drink and animal feedingstuffs.
Suitable materials HDPE (high density polyethylene)

7.3 Specific end use(s)
Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirotetramat</td>
<td>203313-25-1</td>
<td>1.4 mg/m3</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

MOVENTO 100SC

Version 1 / NZ
102000016538

Revision Date: 20.11.2017
Print Date: 20.11.2017

Glycerine (Mist.) 56-81-5 10 mg/m³ (TWA) 06 2016 NZ OEL

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material: Nitrile rubber
Rate of permeability: > 480 min
Glove thickness: > 0.4 mm
Protective index: Class 6

Eye protection

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection

Wear standard coveralls and Category 3 Type 4 suit. If there is a risk of significant exposure, consider a higher protective type suit.

Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

General protective measures

If product is handled while not enclosed, and if contact may occur: Complete suit protecting against chemicals

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form: suspension
Colour: white to light beige
Odour: characteristic
pH: 4.0 - 5.0 at 100 % (23 °C)
Flash point: >100 °C
   No flash point - Determination conducted up to the boiling point.
Ignition temperature: 430 °C
Density: ca. 1.08 g/cm³ at 20 °C
Water solubility: suspensive
Partition coefficient: n-octanol/water
   Spirotetramat: log Pow: 2.5 at pH 7
Oxidizing properties: No oxidizing properties
Explosivity: Not explosive
   92/69/EEC, A.14 / OECD 113
9.2 Other information: Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Thermal decomposition: Stable under normal conditions.

10.2 Chemical stability
   Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
   No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid
   Extremes of temperature and direct sunlight.

10.5 Incompatible materials
   Store only in the original container.

10.6 Hazardous decomposition products
   No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute oral toxicity: LD50 (Rat) > 2,000 mg/kg
Acute inhalation toxicity: LC50 (Rat) > 2.8 mg/l
   Exposure time: 4 h
   Determined in the form of a respirable aerosol.
   Highest attainable concentration.
Acute dermal toxicity: LD50 (Rat) > 2,000 mg/kg
Skin irritation: No skin irritation (Rabbit)
Eye irritation: No eye irritation (Rabbit)
Sensitisation: Sensitising (Guinea pig)
OECD Test Guideline 406, Buehler test

**Assessment STOT Specific target organ toxicity – single exposure**

Spirotetramat: May cause respiratory irritation.

**Assessment STOT Specific target organ toxicity – repeated exposure**

Spirotetramat did not cause specific target organ toxicity in experimental animal studies.

**Assessment mutagenicity**

Spirotetramat was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Spirotetramat was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Spirotetramat caused male reproductive toxicity in the presence of general toxicity in the rat at very high experimental dose levels. There were no effects on male fertility in mice and dogs. The reproductive toxicity seen with Spirotetramat is due to an overwhelmed elimination capacity at high doses. The high dose levels needed for this effect cannot be achieved even in a worst case exposure scenario.

**Assessment developmental toxicity**

Spirotetramat caused developmental toxicity only at dose levels toxic to the dams. Spirotetramat caused a delayed foetal growth, an increased incidence of variations.

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**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Toxicity to fish**

LC50 (Onchorhynchus mykiss (rainbow trout))  22.3 mg/l
Exposure time: 96 h

**Toxicity to aquatic invertebrates**

EC50 (Daphnia magna (Water flea)) > 42.7 mg/l
Exposure time: 48 h

The value mentioned relates to the active ingredient.

NOEC (Chironomus riparius (non-biting midge)) 0.1 mg/l
Exposure time: 28 d

The value mentioned relates to the active ingredient.

EC50 (Chironomus riparius (non-biting midge)) 0.46 mg/l
Exposure time: 28 d

The value mentioned relates to the active ingredient.

**Toxicity to aquatic plants**

EC50 (Raphidocelis subcapitata (freshwater green alga)) 213.6 mg/l
Growth rate; Exposure time: 72 h

**12.2 Persistence and degradability**

**Biodegradability**

Spirotetramat:
Not rapidly biodegradable

**Koc**

Spirotetramat: Koc: 289

**12.3 Bioaccumulative potential**
Bioaccumulation

Spirotetramat: Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil

Spirotetramat: Moderately mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

Spirotetramat: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information

No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Contaminated packaging

Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

ADR/RID/ADN

14.1 UN number

3082

14.2 Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIROTETRAMAT SOLUTION)

14.3 Transport hazard class(es)

9

14.4 Packing group

III

14.5 Environm. Hazardous Mark

YES

Hazchem Code

3Z

IMDG

14.1 UN number

3082

14.2 Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIROTETRAMAT SOLUTION)

14.3 Transport hazard class(es)

9

14.4 Packing group

III

14.5 Marine pollutant

YES

IATA
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14.1 UN number 3082
14.2 Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SPIROTETRAMAT SOLUTION)
14.3 Transport hazard class(es) 9
14.4 Packing group III
14.5 Environm. Hazardous Mark YES

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Further information
HSNO approval-Nr. HSR100545
HSNO Controls See www.epa.govt.nz
ACVM Reg. P8434
ACVM Condition See www.foodsafety.govt.nz

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE Acute toxicity estimate
CAS-Nr. Chemical Abstracts Service number
Conc. Concentration
ECx Effective concentration to x %
EINECS European inventory of existing commercial substances
ELINCS European list of notified chemical substances
EN European Standard
EU European Union
IATA International Air Transport Association
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx Inhibition concentration to x %
IMDG International Maritime Dangerous Goods
LCx Lethal concentration to x %
LDx Lethal dose to x %
LOEC/LOEL Lowest observed effect concentration/level
MARPOL MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S. Not otherwise specified
NOEC/NOEL  No observed effect concentration/level
OECD  Organization for Economic Co-operation and Development
RID  Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA  Time weighted average
UN  United Nations
WHO  World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.