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

1.1 Product identifier
Trade name OBERON
Product code (UVP) 05544300

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use Insecticide
EPA-Nr. HSR007691

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.

6.9B H373 May cause damage to organs through prolonged or repeated exposure.

9.1A H410 Very toxic 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.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).
P391 Collect spillage.
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)
Spiromesifen 240g/l

Hazardous components

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS-No.</th>
<th>Conc. [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spiromesifen</td>
<td>283594-90-1</td>
<td>22,9</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>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>Glycerine</td>
<td>56-81-5</td>
<td>&gt; 1</td>
</tr>
</tbody>
</table>

Further information

Spiromesifen 283594-90-1 M-Factor: 10 (acute)

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 polyethyleneglycol 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:; Carbon monoxide (CO)

5.3 Advice for firefighters

Special protective equipment 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.

Hygiene measures

Avoid contact with skin, eyes and clothing. Keep working clothes separately. 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.

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>Spiromesifen</td>
<td>283594-90-1</td>
<td>0,92 mg/m³ (SK-SEN)</td>
<td></td>
<td>OES BCS*</td>
</tr>
<tr>
<td>Glycerine (Mist.)</td>
<td>56-81-5</td>
<td>10 mg/m³ (TWA)</td>
<td>06 2016</td>
<td>NZ OEL</td>
</tr>
</tbody>
</table>

*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 conditions.
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 

Eye protection

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

Skin and body protection

Wear standard coveralls and Category 3 Type 6 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form: suspension 
Colour: grey white 
Odour: weak, characteristic 

pH: 4,0 - 5,5 at 100 % (23 °C) 
Flash point: > 100 °C 
No flash point - Determination conducted up to the boiling point.

Ignition temperature: 410 °C 
Density: ca. 1,05 g/cm³ at 20 °C 
Water solubility: miscible 
Partition coefficient: n-octanol/water: Spiromesifen: log Pow: 4,55 at 20 °C 
Impact sensitivity: Not impact sensitive.
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) > 2.500 mg/kg

Acute inhalation toxicity: LC50 (Rat) > 2,759 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.
Highest attainable concentration.

Acute dermal toxicity: LD50 (Rat) > 4.000 mg/kg

Skin irritation: No skin irritation (Rabbit)

Eye irritation: No eye irritation (Rabbit)

Sensitisation: Non-sensitizing. (Guinea pig)
OECD Test Guideline 406, Buehler test

Assessment STOT Specific target organ toxicity – single exposure
Spiromesifen: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure
Spiromesifen did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity
Spiromesifen was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity
spiromesifen was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction
Spiromesifen caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Spiromesifen is related to parental toxicity.

Assessment developmental toxicity
Spiromesifen caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Spiromesifen are related to maternal toxicity.

Aspiration hazard
Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
LC50 (Lepomis macrochirus (Bluegill sunfish)) 0,245 mg/l
Exposure time: 96 h
Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) 68,7 mg/l
Exposure time: 48 h
Toxicity to aquatic plants
IC50 (Raphidocelis subcapitata (freshwater green alga)) > 6,4 mg/l
Growth rate; Exposure time: 72 h

12.2 Persistence and degradability
Biodegradability
Spiromesifen: Not rapidly biodegradable
Koc
Spiromesifen: Koc: 30900

12.3 Bioaccumulative potential
Bioaccumulation
Spiromesifen: Bioconcentration factor (BCF) 545
Does not bioaccumulate.

12.4 Mobility in soil
Mobility in soil
Spiromesifen: Immobile in soil

12.5 Results of PBT and vPvB assessment
PBT and vPvB assessment
Spiromesifen: 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
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. (SPIROMESIFEN 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.

**IMDG**

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

**IATA**

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

**SECTION 15: REGULATORY INFORMATION**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Further information

HSNO approval-Nr. HSR007691
HSNO Controls See www.epa.govt.nz
ACVM Reg. P7567
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.