

# SAFETY DATA SHEET



## OTHELLO OD

Version 1 / NZ  
102000011533

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Revision Date: 01.11.2017  
Print Date: 01.11.2017

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

#### 1.1 Product identifier

Trade name OTHELLO OD  
Product code (UVP) 06352391

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide  
EPA-Nr. HSR100005

#### 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)

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### 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

6.4A  
H320 Causes eye irritation.  
9.1A  
H410 Very toxic to aquatic life with long lasting effects.  
9.2A  
H421 Very toxic to the soil environment.

#### 2.2 Label elements

Labelling in accordance with Hazardous Substances Identification Regulations 2001

Hazard label for supply/use required.

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**Signal word:** Warning

### Hazard statements

H320 Causes eye irritation.  
H410 Very toxic to aquatic life with long lasting effects.  
H421 Very toxic to the soil environment.

### Precautionary statements

P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
+ P338  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
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

Oil dispersion (OD)  
Diflufenican/Mesosulfuron-methyl/Iodosulfuron-methyl-sodium/Mefenpyr-diethyl 50:7.5:2.5:22.5 g/l

#### Hazardous components

| Name  | CAS-No.     | Conc. [%]        |
|---|-------------|------------------|
| Diflufenican                                | 83164-33-4  | 5.21             |
| Mesosulfuron-methyl, sodium salt            | 208465-19-4 | 0.82             |
| Iodosulfuron-methyl-sodium                  | 144550-36-7 | 0.29             |
| Mefenpyr-diethyl                            | 135590-91-9 | 2.35             |
| Fatty alcohol ethoxylate alkyl ether        | 345642-79-7 | > 2.50 – < 25.00 |
| Solvent Naphtha (petroleum), light aromatic | 64742-95-6  | > 2.50 – < 25.00 |
| Docosate sodium                             | 577-11-7    | > 5.00 – < 10.00 |
| Calcium diformate                           | 544-17-2    | > 3.00 – < 10.00 |
| White mineral oil                           | 8042-47-5   | > 10.00          |

#### Further information

|                                  |             |                         |
|----------------------------------|-------------|-------------------------|
| Mesosulfuron-methyl, sodium salt | 208465-19-4 | M-Factor: 1,000 (acute) |
| Iodosulfuron-methyl-sodium       | 144550-36-7 | M-Factor: 1,000 (acute) |

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### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of first aid measures

|                       |  |
|-----------------------|--|
| <b>General advice</b> | Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.  |
| <b>Inhalation</b>     | Move the victim to fresh air and keep at rest. If symptoms persist, call a physician.  |
| <b>Skin contact</b>   | Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Eye contact</b>    | 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. |
| <b>Ingestion</b>      | Do NOT induce vomiting. Rinse mouth. 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. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate.

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

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### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

|                   |  |
|-------------------|--|
| <b>Suitable</b>   | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| <b>Unsuitable</b> | High volume water jet  |

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

#### 5.3 Advice for firefighters

**Special protective equipment for firefighters** 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.

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### 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. Remove all sources of ignition.

**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** Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

**Hygiene measures** Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. 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** Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Store bulk material and packed materials in a closed warehouse or under cover protected against direct sunlight and frost.

**Advice on common storage** Keep away from food, drink and animal feedingstuffs.

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

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

| Components   | CAS-No.    | Control parameters    | Update | Basis    |
|--------------|------------|-----------------------|--------|----------|
| Diflufenican | 83164-33-4 | 5.5 mg/m <sup>3</sup> |        | OES BCS* |

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|   |             | (TWA)                                     |         |          |
|---|-------------|---|---------|----------|
| Mesosulfuron-methyl, sodium salt            | 208465-19-4 | 10 mg/m <sup>3</sup><br>(TWA)             |         | OES BCS* |
| Iodosulfuron-methyl-sodium                  | 144550-36-7 | 1 mg/m <sup>3</sup><br>(TWA)              |         | OES BCS* |
| Mefenpyr-diethyl                            | 135590-91-9 | 10 mg/m <sup>3</sup><br>(TWA)             |         | OES BCS* |
| Solvent Naphtha (petroleum), light aromatic | 64742-95-6  | 1,600 mg/m <sup>3</sup> /400 ppm<br>(TWA) | 02 2013 | 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

Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent.

#### Hand protection

Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and 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.

#### 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. 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.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|   |  |
|---|--|
| <b>Form</b>                                   | Liquid   |
| <b>Colour</b>                                 | light beige  |
| <b>Odour</b>                                  | aromatic   |
| <b>pH</b>                                     | 6.7 - 7.5 at 10 % (23 °C) (deionized water)  |
| <b>Flash point</b>                            | 96 °C  |
| <b>Ignition temperature</b>                   | 320 °C   |
| <b>Density</b>                                | ca. 0.96 g/cm <sup>3</sup> at 20 °C  |
| <b>Water solubility</b>                       | emulsifiable   |
| <b>Partition coefficient: n-octanol/water</b> | Mesosulfuron-methyl: log Pow: -0.48<br>Iodosulfuron-methyl-sodium: log Pow: -0.7<br>Diflufenican: log Pow: 4.2 |

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|                              |   |
|------------------------------|---|
|                              | Mefenpyr-diethyl: log Pow: 3.83 at 21 °C  |
| <b>Viscosity, dynamic</b>    | 50 - 300 mPa.s at 20 °C Velocity gradient 20 /s<br>40 - 150 mPa.s at 20 °C Velocity gradient 100 /s         |
| <b>Viscosity, kinematic</b>  | 35 mm <sup>2</sup> /s at 40 °C Shear rate of 100/sec<br>44 mm <sup>2</sup> /s at 40 °C Shear rate of 20/sec |
| <b>Oxidizing properties</b>  | No oxidizing properties   |
| <b>9.2 Other information</b> | Further safety related physical-chemical data are not known.  |

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## 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. Stable under recommended storage conditions.

**10.5 Incompatible materials** Store only in the original container.

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

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## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute oral toxicity** LD50 (Rat) > 5,000 mg/kg

**Acute dermal toxicity** LD50 (Rat) > 4,000 mg/kg

**Skin irritation** No skin irritation (Rabbit)

**Eye irritation** Irritating to eyes. (Rabbit)

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

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

Diflufenican: Based on available data, the classification criteria are not met.

Mesosulfuron-methyl: Based on available data, the classification criteria are not met.

Iodosulfuron-methyl-sodium: Based on available data, the classification criteria are not met.

Mefenpyr-diethyl: Based on available data, the classification criteria are not met.

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

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

Mesosulfuron-methyl did not cause specific target organ toxicity in experimental animal studies.

Iodosulfuron-methyl-sodium did not cause specific target organ toxicity in experimental animal studies.

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Mefenpyr-diethyl did not cause specific target organ toxicity in experimental animal studies.

### Assessment mutagenicity

Diflufenican was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Mesosulfuron-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Iodosulfuron-methyl-sodium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.  
Mefenpyr-diethyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

### Assessment carcinogenicity

Diflufenican was not carcinogenic in lifetime feeding studies in rats and mice.  
Mesosulfuron-methyl was not carcinogenic in lifetime feeding studies in rats and mice.  
Iodosulfuron-methyl-sodium was not carcinogenic in lifetime feeding studies in rats and mice.  
Mefenpyr-diethyl was not carcinogenic in lifetime feeding studies in rats and mice.

### Assessment toxicity to reproduction

Diflufenican did not cause reproductive toxicity in a two-generation study in rats.  
Mesosulfuron-methyl did not cause reproductive toxicity in a two-generation study in rats.  
Iodosulfuron-methyl-sodium did not cause reproductive toxicity in a two-generation study in rats.  
Mefenpyr-diethyl did not cause reproductive toxicity in a two-generation study in rats.

### Assessment developmental toxicity

Diflufenican did not cause developmental toxicity in rats and rabbits.  
Mesosulfuron-methyl did not cause developmental toxicity in rats and rabbits.  
Iodosulfuron-methyl-sodium did not cause developmental toxicity in rats and rabbits.  
Mefenpyr-diethyl caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Mefenpyr-diethyl are related to maternal toxicity.

### Further information

The toxicological data refer to a similar formulation.

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## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

|  |   |
|--|---|
| <b>Toxicity to fish</b>                  | LC50 (Oncorhynchus mykiss (rainbow trout)) 13.5 mg/l<br>Exposure time: 96 h   |
| <b>Toxicity to aquatic invertebrates</b> | EC50 (Daphnia magna (Water flea)) 15.8 mg/l<br>Exposure time: 48 h  |
| <b>Toxicity to aquatic plants</b>        | EC50 (Raphidocelis subcapitata (freshwater green alga)) 32 µg/l<br>Growth rate; Exposure time: 72 h<br>EC50 (Lemna gibba (gibbous duckweed)) 0.13 mg/l<br>Growth rate; Exposure time: 7 d |

### 12.2 Persistence and degradability

|                         |  |
|-------------------------|--|
| <b>Biodegradability</b> | Mesosulfuron-methyl:<br>Not rapidly biodegradable<br>Iodosulfuron-methyl-sodium:<br>Not rapidly biodegradable<br>Diflufenican:<br>Not rapidly biodegradable<br>Mefenpyr-diethyl: |
|-------------------------|--|

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**Koc** Not rapidly biodegradable  
Mesosulfuron-methyl: Koc: 92  
Iodosulfuron-methyl-sodium: Koc: 45  
Diflufenican: Koc: 3417  
Mefenpyr-diethyl: Koc: 625

### 12.3 Bioaccumulative potential

**Bioaccumulation** Mesosulfuron-methyl:  
Does not bioaccumulate.  
Iodosulfuron-methyl-sodium:  
Does not bioaccumulate.  
Diflufenican: Bioconcentration factor (BCF) 1,596  
Does not bioaccumulate.  
Mefenpyr-diethyl: Bioconcentration factor (BCF) 232  
Does not bioaccumulate.

### 12.4 Mobility in soil

**Mobility in soil** Mesosulfuron-methyl: Moderately mobile in soils  
Iodosulfuron-methyl-sodium: Mobile in soils  
Diflufenican: Slightly mobile in soils  
Mefenpyr-diethyl: Slightly mobile in soils

### 12.5 Results of PBT and vPvB assessment

**PBT and vPvB assessment** Mesosulfuron-methyl: 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).  
Iodosulfuron-methyl-sodium: 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).  
Diflufenican: 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).  
Mefenpyr-diethyl: 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** The ecological data refer to a similar formulation.

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## 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.

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### 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                  | <b>3082</b>  |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOSULFURON; POLYGLYCOLETHER 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                  | <b>3082</b>  |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOSULFURON; POLYGLYCOLETHER SOLUTION) |
| 14.3 Transport hazard class(es) | 9  |
| 14.4 Packing group              | III  |
| 14.5 Marine pollutant           | YES  |

#### IATA

|                                 |   |
|---------------------------------|---|
| 14.1 UN number                  | <b>3082</b>   |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MESOSULFURON; POLYGLYCOLETHER 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. | HSR100005  |
| HSNO Controls     | See <a href="http://www.epa.govt.nz">www.epa.govt.nz</a>               |
| ACVM Reg.         | P8168  |
| ACVM Condition    | See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a> |

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### 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.