

# Safety data sheet

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BASF Safety data sheet  
Date / Revised: 01.03.2024  
Product: **Freehand® Herbicide**

Version: 4.0

(30730794/SDS\_CPA\_AU/EN)

Date of print: 12.11.2024

## 1. Substance/preparation and manufacturer/supplier identification

**Product name:**  
Freehand® Herbicide

Use: crop protection product, herbicide

Manufacturer/supplier:  
BASF Australia Limited (ABN 62 008 437 867)  
Level 23, 40 City Road, Southbank  
Victoria 3006, AUSTRALIA  
Telephone: +61 3 8855-6600

Emergency information:  
BASF Emergency Advice Number: 1800 803 440 (24h) [within Australia]  
BASF Emergency Advice Number: + 61 3 8855 6666 [outside Australia]

## 2. Hazard identification

Classification of the substance and mixture:  
Eye irritation: Cat.2A  
Hazardous to the aquatic environment - acute: Cat.1  
Hazardous to the aquatic environment - chronic: Cat.2

Label elements and precautionary statement:

Pictogram:



Signal Word:  
Warning

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**Hazard Statement:**

H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.

**Precautionary Statement:**

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

**Precautionary Statements (Prevention):**

P280	Wear eye protection.
P264	Wash contaminated body parts thoroughly after handling.

**Precautionary Statements (Response):**

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391	Collect spillage.
P337 + P313	If eye irritation persists: Get medical attention.

**Precautionary Statements (Disposal):**

P501	Dispose of contents and container to hazardous or special waste collection point.
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Other hazards which do not result in classification:

See section 12 - Results of PBT and vPvB assessment.

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

May produce an allergic reaction. Contains:

(S)-dimethenamid

### 3. Composition/information on ingredients

#### Chemical nature

Substance nature: mixture

crop protection product, herbicide, Granule (GR)

#### Hazardous ingredients

pendimethalin

Content (W/W): 1 %

CAS Number: 40487-42-1

Acute Tox.: Cat. 5 (oral)

Repr.: Cat. 2 (unborn child)

Aquatic Acute: Cat. 1

Aquatic Chronic: Cat. 1

M-factor acute: 100

M-factor chronic: 10

(S)-dimethenamid

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Content (W/W): 0.75 %  
CAS Number: 163515-14-8

Acute Tox.: Cat. 4 (oral)  
Skin Sens.: Cat. 1  
Aquatic Acute: Cat. 1  
Aquatic Chronic: Cat. 1  
M-factor acute: 10  
M-factor chronic: 10

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## 4. First-Aid Measures

General advice:  
Remove contaminated clothing.

If inhaled:  
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:  
Wash thoroughly with soap and water

On contact with eyes:  
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:  
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Note to physician:  
Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far  
Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far  
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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## 5. Fire-Fighting Measures

Suitable extinguishing media:  
dry powder, foam, water spray

Unsuitable extinguishing media for safety reasons:  
carbon dioxide

Specific hazards:  
carbon monoxide, carbon dioxide, hydrogen chloride, nitrogen oxides, halogenated compounds, silica compounds  
The substances/groups of substances mentioned can be released in case of fire.

Special protective equipment:  
Wear self-contained breathing apparatus and chemical-protective clothing.

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Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire.

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## 6. Accidental Release Measures

Personal precautions:

Use personal protective clothing. Avoid contact with the skin, eyes and clothing. Avoid dust formation.

Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Methods for cleaning up or taking up:

For small amounts: Contain with dust binding material and dispose of.

For large amounts: Sweep/shovel up.

Avoid raising dust. Dispose of absorbed material in accordance with regulations. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

Collect waste in suitable containers, which can be labeled and sealed.

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## 7. Handling and Storage

Handling

Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. No special measures necessary if stored and handled correctly.

Protection against fire and explosion:

Avoid dust formation. Dust can form an explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Storage

Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight. Protect against moisture.

Storage stability:

Storage duration: 24 Months

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## 8. Exposure controls and personal protection

Components with occupational exposure limits

Quartz (SiO<sub>2</sub>), 14808-60-7;

TWA value 0.05 mg/m<sup>3</sup> (AU NOEL), Respirable dust

#### Personal protective equipment

Respiratory protection:  
Respiratory protection not required.

Hand protection:  
Chemical resistant protective gloves

Eye protection:  
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:  
Standard work clothes and shoes.

#### General safety and hygiene measures:

Avoid contact with the skin, eyes and clothing. In order to prevent contamination while handling, closed working clothes and working gloves should be used. Wash contaminated clothing before reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Before eating, drinking, or smoking, wash face and hands with soap and water.

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## 9. Physical and Chemical Properties

Form: solid  
Colour: yellow to brown  
Odour: characteristic  
Odour threshold: Not determined due to potential health hazard by inhalation.

pH value: approx. 3.0 - 5.0  
(25 °C)

Melting point: > 100 °C  
The statements are based on the properties of the individual components.

Boiling point: The product has not been tested.

Flash point: not applicable, the product is a solid

Evaporation rate: not applicable

Flammability (solid/gas): Based on the structure or composition there is no indication of flammability

Lower explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Upper explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Self ignition: not self-igniting  
Information based on the main component/s.

Self heating ability: It is not a substance capable of spontaneous heating.

Explosion hazard: not explosive

Fire promoting properties: not fire-propagating

Vapour pressure: not applicable

Bulk density: approx. 660 kg/m<sup>3</sup>  
(20 °C)

Relative vapour density (air): not applicable

Solubility in water: dispersible

Partitioning coefficient n-octanol/water (log Pow):  
The statements are based on the properties of the individual components.

Information on: (S)-dimethenamid

Partitioning coefficient n-octanol/water (log Pow): 1.89  
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Viscosity, dynamic: not applicable, the product is a solid

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## 10. Stability and Reactivity

Conditions to avoid:  
See SDS section 7 - Handling and storage.

Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

Substances to avoid:  
strong oxidizing agents, strong bases, strong acids

Hazardous reactions:  
No hazardous reactions if stored and handled as prescribed/indicated.

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

Chemical stability:

The product is stable if stored and handled as prescribed/indicated.

Reactivity:

No hazardous reactions if stored and handled as prescribed/indicated.

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## 11. Toxicological Information

### Routes of exposure

#### Acute oral toxicity

Experimental/calculated data:

LD50rat (oral): > 2,000 mg/kg (OECD Guideline 423)

No mortality was observed.

#### Acute inhalation toxicity

LC50 rat (by inhalation): > 5.103 mg/l 4 h

No mortality was observed. An aerosol with respirable particles was tested.

#### Acute dermal toxicity

LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)

No mortality was observed.

#### Assessment of acute toxicity

Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

#### Symptoms

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

(Further) symptoms and / or effects are not known so far

#### Irritation

Assessment of irritating effects:

Eye contact causes irritation. Not irritating to the skin.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Serious eye damage/irritation rabbit: Irritant. (OECD Guideline 405)

#### Respiratory/Skin sensitization

Assessment of sensitization:

No sensitizing effect.

Experimental/calculated data:

Buehler test guinea pig: Non-sensitizing.

### **Germ cell mutagenicity**

Assessment of mutagenicity:

The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

### **Carcinogenicity**

Assessment of carcinogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

The respirable fraction is < 0.1 %, therefore the classification regarding inhalation toxicity does not apply.

Information on: pendimethalin

Assessment of carcinogenicity:

In long-term studies in rats the substance induced thyroid tumors. The effect is caused by an animal specific mechanism that has no human counter part. In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed.

### **Reproductive toxicity**

Assessment of reproduction toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

### **Developmental toxicity**

Assessment of teratogenicity:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Assessment of teratogenicity:

Indications of possible developmental toxicity/teratogenicity were seen in animal studies.

### **Specific target organ toxicity (single exposure)**

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the properties of the individual components.

### **Repeated dose toxicity and Specific target organ toxicity (repeated exposure)**

Assessment of repeated dose toxicity:

The product has not been tested. The statement has been derived from the properties of the individual components. The respirable fraction is < 0.1 %, therefore the classification regarding inhalation toxicity does not apply.



Information on: pendimethalin

Assessment of repeated dose toxicity:

No substance-specific organotoxicity was observed after repeated administration to animals. Adaptive effects were observed after repeated exposure in animal studies.

Information on: (S)-dimethenamid

Assessment of repeated dose toxicity:

Adaptive effects were observed after repeated exposure in animal studies.

### Aspiration hazard

not applicable

### Other relevant toxicity information

Misuse can be harmful to health.

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## 12. Ecological Information

### Ecotoxicity

Assessment of aquatic toxicity:

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Toxicity to fish:

LC50 (96 h) 0.196 mg/l, *Oncorhynchus mykiss*

Information on: (S)-dimethenamid

Toxicity to fish:

LC50 (96 h) 6.3 mg/l, *Oncorhynchus mykiss*

Information on: pendimethalin

Aquatic invertebrates:

EC50 (48 h) 0.147 mg/l, *Daphnia magna*

Information on: (S)-dimethenamid

Aquatic invertebrates:

EC50 (48 h) 12 mg/l, *Daphnia magna*

Information on: pendimethalin

Aquatic plants:

EC50 (72 h) 0.00408 mg/l, *Selenastrum capricornutum*

EC10 (72 h) 0.00157 mg/l, *Selenastrum capricornutum*

Information on: (S)-dimethenamid

Aquatic plants:

EC50 (72 h) 0.0303 mg/l (growth rate), Pseudokirchneriella subcapitata

EC10 (72 h) 0.0156 mg/l (growth rate), Pseudokirchneriella subcapitata

EC50 (14 d) 0.031 mg/l (growth rate), Lemna gibba

EC10 (14 d) 0.0064 mg/l (growth rate), Lemna gibba  
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Information on: pendimethalin

Chronic toxicity to fish:

No observed effect concentration (288 d) 0.0063 mg/l, Pimephales promelas

Information on: (S)-dimethenamid

Chronic toxicity to fish:

No observed effect concentration (90 d) 0.120 mg/l, Oncorhynchus mykiss  
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Information on: pendimethalin

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d), 0.0173 mg/l, Daphnia magna

Information on: (S)-dimethenamid

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d), 0.680 mg/l, Daphnia magna  
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## Mobility

Assessment transport between environmental compartments:

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Assessment transport between environmental compartments:

The substance will slowly evaporate into the atmosphere from the water surface.

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Information on: (S)-dimethenamid

Assessment transport between environmental compartments:

Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.  
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## Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: pendimethalin

Assessment biodegradation and elimination (H<sub>2</sub>O):

Not readily biodegradable (by OECD criteria).

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Information on: (S)-dimethenamid  
Assessment biodegradation and elimination (H<sub>2</sub>O):  
Not readily biodegradable (by OECD criteria).  
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### **Bioaccumulation potential**

Assessment bioaccumulation potential:  
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: (S)-dimethenamid  
Assessment bioaccumulation potential:  
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.  
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Information on: pendimethalin  
Bioaccumulation potential:  
Bioconcentration factor: 3,300  
Based on a weight of evidence, the compound will not bioaccumulate.  
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### **Additional information**

Other ecotoxicological advice:  
Do not discharge product into the environment without control.

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## **13. Disposal Considerations**

Must be sent to a suitable incineration plant, observing local regulations.

Contaminated packaging:  
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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## **14. Transport Information**

### **Domestic transport:**

UN number or ID number: UN 3077  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(PENDIMETHALIN, DIMETHENAMID-P)  
Transport hazard class(es): 9, EHS  
Packing group: III  
Environmental hazards: yes  
  
Special precautions for user: None known

### **Further information**

Hazchem Code:2Z  
IERG Number:47

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**Sea transport**

## IMDG

UN number or ID number: UN 3077  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(PENDIMETHALIN, DIMETHENAMID-P)  
Transport hazard class(es): 9, EHS  
Packing group: III  
Environmental hazards: yes  
Marine pollutant: YES  
Special precautions for user: EmS: F-A; S-F

**Air transport**

## IATA/ICAO

UN number or ID number: UN 3077  
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(PENDIMETHALIN, DIMETHENAMID-P)  
Transport hazard class(es): 9, EHS  
Packing group: III  
Environmental hazards: yes  
Special precautions for user: None known

**Further information**

Environmentally Hazardous Substances meeting the description of UN 3077 or UN 3082 are not subjected to the Australian Dangerous Goods Code when transported by road or rail in packagings not exceeding 500 kg(L) or IBCs.

**Further information**

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 kg or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2:10.2.7; IATA: A197; TDS: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

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## 15. Regulatory Information

**Other regulations**

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

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Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP): Schedule 6

APVMA Approval No: 86278

**Registration status:**

AICIS, AU

Contains non-registered, non-listed substance., Individual registration may be required., Please contact your BASF representative.

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## 16. Other Information

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Vertical lines in the left hand margin indicate an amendment from the previous version.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.