1. Substance/preparation and company identification

**ARSENAL® XPRESS HERBICIDE**

Use: crop protection product, herbicide

Manufacturer/supplier:
BASF Australia Limited (ABN 62 008 437 867)
Level 12, 28 Freshwater Place Southbank
Victoria 3006, AUSTRALIA
Telephone: +61 3 8855-6600
Telefax number: +61 3 8855-6511

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

HAZARDOUS SUBSTANCE, DANGEROUS GOOD
Harmful by inhalation.
Irritating to eyes.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Keep out of the reach of children.
Keep away from food, drink and animal feeding stuffs.
When using do not eat, drink or smoke.
Do not empty into drains.
This material and its container must be disposed of in a safe way.
If swallowed, seek medical advice immediately and show this container or label.
Use appropriate container to avoid environmental contamination.
3. Composition/information on ingredients

Chemical nature

crop protection product, herbicide, Soluble concentrate (SL)

Contains: imazapyr isopropylamine salt, glyphosate-isopropylamine

Hazardous ingredients

imazapyr

Content (W/W): 13.4 %
CAS Number: 81334-34-1
Hazard symbol(s): Xi
R-phrase(s): 36, 52/53

Glyphosate

Content (W/W): 13.4 %
CAS Number: 1071-83-6
Hazard symbol(s): Xi, N
R-phrase(s): 41, 51/53

The wording of the hazard symbols and R-phrases is specified in section 16 if dangerous ingredients are mentioned.

4. First-Aid Measures

General advice:
Remove contaminated clothing.

If inhaled:
Immediately administer a corticosteroid from a controlled/metered dose inhaler. Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately 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: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further important symptoms and effects are so far not known. Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.
5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, carbon dioxide, foam, dry powder

Specific hazards:
carbon monoxide, carbon dioxide, nitrogen oxides, Phosphorus 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.

Further information:
In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. 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.

6. Accidental Release Measures

Personal precautions:
Use personal protective clothing. Avoid contact with the skin, eyes and clothing. Do not breathe vapour/spray.

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: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
For large amounts: Dike spillage. Pump off product.
Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labeled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Cleaning operations should be carried out only while wearing breathing apparatus.

7. Handling and Storage

Handling
No special measures necessary if stored and handled correctly. 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.

Protection against fire and explosion:
No special precautions necessary. The substance/product is non-combustible. Product is not explosive.
Storage
Segregate from foods and animal feeds.
Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

Protect from temperatures above: 40 °C
Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure controls and personal protection

Components with occupational exposure limits
no exposure standard allocated

Personal protective equipment
Respiratory protection:
Suitable respiratory protection for higher concentrations or long-term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK).

Hand protection:
Suitable chemical resistant safety gloves (EN 374) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other

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

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:
The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form: liquid, slightly viscous
Colour: amber
Odour: faint odour
pH value: approx. 6 - 8 (approx. 21 °C)
Freezing point: approx. 0 °C
Information applies to the solvent.
Boiling point: approx. 100 °C
Information applies to the solvent.
Flash point: > 95 °C
Flammability: not flammable
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.
Ignition temperature:
Based on the water content the product does not ignite.
Explosion hazard: not explosive
Fire promoting properties: not fire-propagating
Vapour pressure: approx. 23.4 hPa
(20 °C)
Information applies to the solvent.
Density: approx. 1.1 g/cm³
(approx. 20 °C)
Relative vapour density (air):
not applicable
Solubility in water: soluble
Information on: Glyphosate Acid Technical
Partitioning coefficient n-octanol/water (log Pow): < -3.2
(20 °C; pH value: 2 - 5)
Viscosity, dynamic: approx. 21.6 mPa.s
(approx. 25 °C)
Other Information:
If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Conditions to avoid:
See MSDS section 7 - Handling and storage.
11. Toxicological Information

**Acute toxicity**

Assessment of acute toxicity:
* Virtually nontoxic after a single skin contact. Of low toxicity after single ingestion. Of moderate toxicity after short-term inhalation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

LD50 rat (oral): > 5,000 mg/kg

LC50 rat (by inhalation): 4.671 mg/l 4 h
An aerosol was tested.

LD50 rat (dermal): > 4,000 mg/kg
No mortality was observed.

**Irritation**

Assessment of irritating effects:
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. May cause severe damage to the eyes. Not irritating to the skin.

Primary skin irritation rabbit: non-irritant

Primary irritations of the mucous membrane rabbit: Irritant.

**Sensitization**

Assessment of sensitization:
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. There is no evidence of a skin-sensitizing potential.

guinea pig: Skin sensitizing effects were not observed in animal studies.

**Repeated dose toxicity**

Assessment of repeated dose toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: isopropylamine
Assessment of repeated dose toxicity:
After repeated exposure the prominent effect is local irritation.

Genetic toxicity
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 results of various animal studies gave no indication of a carcinogenic effect.

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. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other relevant toxicity information
Misuse can be harmful to health.

12. Ecological Information

Ecotoxicity
Assessment of aquatic toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components. Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Information on: Imazapyr
Toxicity to fish:
LC50 (96 h) > 100 mg/l, Oncorhynchus mykiss

Information on: Glyphosate
Toxicity to fish:
LC50 (96 h) 63.24 mg/l, Oncorhynchus mykiss (other)

Information on: Imazapyr
Aquatic invertebrates:
LC50 (48 h) > 100 mg/l, Daphnia magna

Information on: Glyphosate
Aquatic invertebrates:
EC50 (96 h) 243.6 mg/l, Daphnia magna (other)

Information on: Imazapyr
Aquatic plants:
EC50 (7 d) 71 mg/l (growth rate), Pseudokirchneriella subcapitata

EC50 (7 d) 11.7 mg/l, Anabaena flos-aquae

EC50 (14 d) 0.024 mg/l, Lemna gibba

Information on: Glyphosate
Aquatic plants:
EC50 (96 h) 49.1 mg/l, Selenastrum capricornutum (other)

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: Imazapyr
Assessment transport between environmental compartments:
The substance will not evaporate into the atmosphere from the water surface. Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Information on: Glyphosate
Assessment transport between environmental compartments:
Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Imazapyr
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).
Information on: glyphosate (ISO); N-(phosphonomethyl)glycine
Assessment biodegradation and elimination (H2O):
Not readily biodegradable (by OECD criteria).

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: Imazapyr
Assessment bioaccumulation potential:
Does not accumulate in organisms.

Information on: Glyphosate
Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Additional information

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

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.

14. Transport Information

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<thead>
<tr>
<th>Domestic transport:</th>
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<tbody>
<tr>
<td>Hazard class:</td>
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<tr>
<td>Packing group:</td>
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<tr>
<td>ID number:</td>
</tr>
<tr>
<td>Hazard label:</td>
</tr>
<tr>
<td>Proper shipping name:</td>
</tr>
</tbody>
</table>

Further information

Hazchem Code: 3Z
IERG Number: 47
Sea transport
IMDG
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains IMAZAPYR)

Air transport
IATA/ICAO
Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains IMAZAPYR)

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 or 500 L.

15. Regulatory Information

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) (Australia):
Poisons Schedule: Drugs & Poisons, Schedule 5

Hazard symbol(s)
Xn Harmful.
N Dangerous for the environment.

R-phrase(s)
R20 Harmful by inhalation.
R36 Irritating to eyes.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)
S2 Keep out of the reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S20/21 When using do not eat, drink or smoke.
S29 Do not empty into drains.
S35 This material and its container must be disposed of in a safe way.
S46 If swallowed, seek medical advice immediately and show this container or label.
S57 Use appropriate container to avoid environmental contamination.

Hazard determining component(s) for labelling: IMAZAPYR, GLYPHOSATE, 2-AMINOPROPANE/ISOPROPYLAMINE

Other regulations

For the user of this plant-protective product applies: 'To avoid risks to man and the environment, comply with the instructions for use.' (Directive 1999/45/EC, Article 10, No. 1.2)

Registration status:
AICS, AU blocked / not listed
APVMA 55756

16. Other Information

Full text of hazard symbols and R-phrases if mentioned as hazardous components in section 3:
Xi Irritant.
N Dangerous for the environment.
36 Irritating to eyes.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
41 Risk of serious damage to eyes.
51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.