SANONDA
(AUSTRALIA) PTY LTD

Ph: 03 9863 8081/ Fax: 03 9863 8083
Suite 822, St Kilda Road Tower,
1 Queens Road, Melbourne, VIC 3004
email@sanondaoz.com
www.sanondaoz.com

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1. Product identifiers

Product name : Sanonda Herbicide Simazine 900WG

Active ingredient : Simazine

Product code :

1.2. Other means of identification

IUPAC Chemical name: 6-chloro-N^2,N^4-diethyl-1,3,5-triazine-2,4-diamine

1.3. Recommended use of the chemical and restrictions on use

For control of broad spectrum herbicide for selective weed control in certain crops, and for total vegetation control at higher rates.

1.4. Details of the supplier of the safety data sheet

Sanonda (Australia) Pty Ltd (ABN 23 059 813 973)

Address: Suite 822, St Kilda Road Towers, No. 1 Queens Road, Melbourne,
Victoria 3004 Australia.

TEL: +61 3 9863 8081

FAX: +61 3 9863 8083

email@sanondaoz.com

1.4. Emergency telephone number

Emergency number : +61 3 9863 8081

SECTION 2: Hazards identification

Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.

2.1. GHS classification of the substance or mixture

Acute toxicity : Category 5

Acute aquatic toxicity : Category 1

Carcinogenicity : Category 2

Hazardous to the aquatic environment (chronic) : Category 4

2.2. Label elements

Signal word : Warning

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Hazard statements (CLP) : H351 - Suspected of causing cancer.
H410 -Very toxic to aquatic life with long lasting effects.
H413 - May cause long-term adverse effects in the aquatic environment.

Precautionary statements : P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P308 + P313: IF exposed or concerned: Get medical advice/ attention.
P391: Collect spillage.

Storage & Disposal:

P405: Store locked up.
P501: Dispose of contents/container in accordance with national regulations.

Hazard pictogram : Environment Health hazard


SECTION 3: Composition/information on ingredients

Identity of chemical ingredients	CAS	Concentration
Simazine	122-34-9	900g/kg
Other non-hazardous ingredients	-	100g/kg

SECTION 4: First aid measures

Ingestion:
If swallowed do NOT induce vomiting. Wash mouth out with water. If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 131 126.
Eye contact: Gently brush granules away and rinse with water. If irritation occurs and persists, seek medical advice.

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Skin contact: Gently brush granules away. Wash skin with soap and water. If irritation occurs and persists, seek medical advice. Irritation is not expected.

Inhalation:

Remove to fresh air and observe until recovered. If effects persist, seek medical advice.

Advice to Doctor

Treat symptomatically. No specific antidote.

SECTION 5: Fire fighting measures

Specific Hazard: Generally considered a low risk.

Extinguishing media: Extinguish fire using carbon dioxide, foam or dry agent. If not available, use waterfog or fine water spray but ensure all runoff is contained. Contain all runoff.

Hazards from combustion products: Product will decompose when burnt and will emit toxic fumes. Fire-fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or smoke. There is no risk of explosion.

Precautions for fire-fighters and special protective equipment: Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke or vapours generated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

In case of spillage it is important to take all steps necessary to:

Instruct and ensure all bystanders to keep away from and upwind of spill/leak.

Avoid eye and skin contact;

Do not breath dust;

Ensure adequate ventilation;

Avoid contamination of waterways.

Refer to Section 8 for Personal Protection Equipment (PPE).

6.2. Environmental precautions

Avoid contamination of waterways, drains and sewers.

6.3. Methods and materials for containment and cleaning up

Reposition any leaking containers so as to minimise leakage.

Dam and absorb spill with an absorbent material (eg sand or soil).

Shovel the absorbed spill and material into sealable open-top containers for disposal.

Dispose of at a landfill in accordance with local regulations. Refer Section 13.

Place damaged containers in recovery bins (if available) and if necessary return to Grow Choice.

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Use vacuum equipment with high efficiency particulate air filters or sweep up without dust generation. Collect in a suitable, closed container to dispose and clean the spilled area with water.

SECTION 7: Handling and storage

Precautions for Safe Handling: No special protection equipment required. Keep exposure to this product at a minimum. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water.

Conditions for Safe Storage: Not classified as a Dangerous Good. Store in the closed, original container in a well ventilated area away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.

SECTION 8: Exposure controls/personal protection

Exposure Guidelines:

No exposure limits have been assigned by Safe Work Australia for the ingredients in this product.

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Keep containers closed when not in use. No special engineering controls are required, however make sure that the work environment remains clean and that dusts, vapours and mists are minimised.

Personal Protective Equipment (PPE):

General: No special protective equipment required, however, standard hygiene should include gloves and the use of respirators if dust or sprays indicate use.

Personal Hygiene: After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a) Appearance	: Pale color granules
b) Odour	: Negligible odor
c) pH	: Slightly alkaline when suspended in water.
d) Specific gravity	: 0.92g/ml
e) Initial boiling point and boiling range	: Not available.
f) Flash point	: Not applicable

9.2. Additional parameters

Persistent foam: 25mL maximum, after 1 min.

Wettability: 90s maxmimum, after 1 min.

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Suspensibility: 60% min.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Reaction of the concentrate or spray mix with strong acid and alkali will largely de-activate the product and may cause blockages in spray equipment.

10.3. Incompatible materials and possible hazardous reactions

Strong acids, strong bases and strong oxidising agents. Reaction of the concentrate or spray mix with strong acid and alkali will largely de-activate the product.

10.4. Conditions to avoid

Keep away from sunlight, high temperature and moisture.

10.5. Hazardous decomposition products

Fire may produce harmful combustion products, such as carbon monoxide, oxides of nitrogen and chlorine.

SECTION 11: Toxicological information

11.1. Information on routes of exposure and symptoms related to exposure

No harmful effects are expected if the precautions on the label and the SDS are followed.

11.2. Immediate, delayed and chronic health effects from exposure

Acute toxicity of Simazine:

LD_{50} oral rats	>5000 mg/kg
LD_{50} dermal rats	>2000 mg/kg
LC_{50} inhalation rats	(4hr) >5.5 mg/1
Eye irritation	Non-irritating to eyes.
Skin irritation	Non-irritating to skin.

CANCER INFORMATION: EPA has classified simazine as a possible human carcinogen because it may have caused cancer in test animals which received high doses over the course of their lifetimes. Because simazine in drinking water may possibly increase the risk of cancer in humans, the Lifetime Health Advisory level set by EPA includes an additional margin of safety. Simazine did not produce tumors in mice given 215 mg/kg/day, the highest dose tolerated, for 18 months. Simazine produced thyroid and mammary tumors in female rats fed 5 mg/kg, the highest dietary dose tested.

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TERATOLOGY (BIRTH DEFECTS): No teratogenic effects were observed when rabbits were given daily doses of 5, 75 or 200 mg/kg for days 7 through 19 of pregnancy.

REPRODUCTIVE EFFECTS: No adverse effects on reproductive capacity or development were observed in a three generation study of rats fed 5 mg/kg/day simazine. Chronic inhalation of a cumulative dose of 17 mg/m3 for 2 hr/day for 8 days in pregnant rats resulted in toxic effects on the fetuses and developmental abnormalities. Decreased weights and increased skeletal abnormalities were noted in the fetuses of pregnant rabbits fed 200 mg/kg/day.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Simazine has shown negative results in a variety of mutagenicity tests on bacterial cultures. Tests for mutagenicity on human lung cell cultures have produced both positive and negative results. When injected into adult male fruitflies, simazine increased the frequency of sex-linked lethal mutations, but failed to do so when fed to larvae. Other tests for mutagenicity in fruitflies were negative.

11.3. Exposure Levels/Chronic effects

Two-year chronic oral feeding studies in which rats were given daily dosages at various rates as high as 5 mg/kg for simazine in the diet, resulted in no gross or microscopic signs of toxicity due to ingestion. When rats were given repeated doses of 15 mg/kg/day, some liver cells degenerated during the first 3 days, but the condition did not progress. Instead, the liver adapted and the compound was metabolized.

The EPA has set a Lifetime Health Advisory (LHA) for Simazine in drinking water at 1 ug/l. EPA believes that water containing simazine at or below this level is acceptable for drinking every day over the course of one's lifetime, and does not pose any health concerns. However consuming high levels well above the LHA level over a long period of time has caused tremors, damage to the testes, kidneys, liver and thyroid, disturbances in sperm production, and gene mutations in laboratory animals.

Rats and guinea pigs fed 100 mg/kg daily for 6 months had decreased weight gain, increased white blood cell counts, decreased blood cholinesterase activity and deterioration and inflammation of the stomach. In a 28-day study, oral doses of 2,500 mg/kg/day to rats resulted in stomach ulcers, damage to the small intestine, and death.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Ecotoxicity

LC_{50} fish	LC_{50} (96 h) for bluegill sunfish 90, rainbow trout >100, crucian carp >100, guppies >49 mg/l. (Simazine)
LC_{50} daphnia	LC_{50} (48 h) >100 mg/l. (Simazine)

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EC_{50} algae	EC_{50} (72 h) for *Scenedesmus subspicatus* 0.042 mg/l. (Simazine)
Other Organisms	LD_{50} (48 h, oral and topical) for Bees >99 µg/bee. LC_{50} (14 d) for earthworms >1000 mg/kg. (Simazine)

12.2. Persistence and degradability

Simazine is persistent and does not adsorb strongly to soil particles (Koc = 138 g/ml). In combination with a lengthy soil half-life, these factors suggest that simazine is likely to contaminate groundwater. Its tendency to leach is limited by its low solubility in water (6.2 ug/ml). Soil half-lives of 36 to 234 days on sandy loam, 16.3 to 25.5 weeks on loamy sand and silt loam, and 75 days on an unspecified soil type have been reported. Residual activity remains for 2-7 months (2-4 kg/ha) after application. Simazine does adsorb to clays and mucks.

Simazine is subject to decomposition by ultraviolet radiation, but this effect is small under normal field conditions. Loss from volatilization is also insignificant. In soils, microbial activity probably accounts for decomposition of a significant amount of simazine. Simazine has little if any lateral movement in soil, but can be washed along with soil particles.

The average half life of simazine in ponds where it has been applied is 30 days, with the actual half life dependent on the level of algae present, the degree of weed infestation and other factors.

A 5-year survey of drinking water wells did not find any drinking water systems containing simazine at concentrations at or above the EPA's Lifetime Health Advisory for simazine of 1 ug/l. Lower concentrations were detected in 1.1% of the community water system wells and in 0.2% of the rural domestic wells tested nationwide. Simazine has been found in surface water in 16 states and in groundwater in 8 states. The maximum levels detected were 1,300 ug/l in surface water and 800 ug/l in ground water.

Plants absorb simazine mainly through the roots, with little or no foliar penetration. From the roots, it is translocated upward to the stems, leaves and growing shoots of the plant. It acts to inhibit photosynthesis. Resistant plants readily metabolize simazine to possibly mutagenic by- products (Menzie. Metab. Pesticides. 1974, 2; Environ. Health Perspect. 27:45. 1978).

Plants that are sensitive to simazine accumulate it unchanged. It is possible that livestock or wildlife grazing on these plants could be poisoned.

12.3. Bioaccumulative potential

BCFs of 2.3 to 3.2 and 9.7 to 14.6 were measured in carp at 0.1 and 0.01 mg/L, respectively. BCFs up to 55 have been reported in the literature. BCFs of 0.76 to 0.95 were measured in green sunfish (Lepomas cyanellus), <1 in

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bluegill sunfish, and 5 and 2, in bluegill sunfish and catfish, respectively. These BCFs suggest the bioconcentration in aquatic organisms is low to moderate (SRC).

12.4. Mobility in soil

Experimental data indicates that the basicity of s-triazine herbicides, such as Simazine is not the main factor governing adsorption to soil humic acids. It has been shown that the ability of s-triazines herbicides to act as electron donors to electron acceptor quinone-like units of humic acids also plays an important role in the adsorption. Ferrihydrite does not sorb Simazine. Freundlich coefficients of 18.2, 4,869, 79.6, and 147.3 were measured on Ca Wyoming smectite, Fe Wyoming smectite, soil humic acid, and Fluka humic acid, respectively. Distribution coefficients, Kd, of Simazine on Ca Wyoming smectite and Ca Arizona smectite showed increasing sorption with decreasing pH; approx. 0, 13.6, and 48.3% sorption was observed on Ca Arizona smectite at pH values of 5.5, 2.6, and 1.4, respectively, 11.8, 100, and 100% sorption was observed on Ca Wyoming smectite at pH values of 5.5, 2.4, and 1.4, respectively. An equilibrium sorption constant of 0.55 was determined in Tampa soil. Sorption of Simazine onto Candler fine sand increased with increasing ionic strength of the electrolyte; using 1.0 M $CaCl_2$ as an electrolyte for equilibration of soil with herbicides increased Simazine sorption 32%, as compared to sorption using 0.01 M $CaCl_2$. Simazine sorption onto Candler fine sand increased 27% when the electrolyte KCl concentration was increased from 1.0 to 2.0 M. Desorption of Simazine in 1.0 M ammonium acetate increased as the electrolyte concentration during sorption was increased. In soil column studies, after leaching of 1770 mm of water over a four month period, 87.3, 88,5, and 88.2% of the applied (14)C was recovered in moraine sand, moraine sand, and fine sand, respectively; more than 50% of the applied (14)C was found between 0 and 10 cm. In soil lysimeters, after 50 mm rainfall during the first 20 days following Simazine application at 2.6 kg/ha, leaching into the deeper soil layers was observed.

12.5. Other adverse effects

No further information.

SECTION 13: Disposal considerations

Spills and Disposal: Persons involved in cleanup require adequate skin protection - see section 8. Keep material out of streams and sewers. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

Disposal of empty containers: Shake empty bag into spray tank. Single rinse plastic bags before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals onsite. Puncture or shred and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable

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vegetation and tree roots. Empty containers and products should not be burnt.

SECTION 14: Transport information

14.1. UN number

UN-No. : 3077

14.2. UN proper shipping name

Environmentally hazardous substance, solid, N.O.S.

14.3. Transport hazard class(es)

Class (UN) : 9

Hazard labels (UN) : 9

14.4. Packaging group

Packing group (UN) : III

14.5. Environmental hazards

Dangerous for the environment :

IMDG Marine pollutant : Yes.

Other information : No.

14.6. Special precautions for user

No information

14.7. Hazchem Code

2Z.

SECTION 15: REGULATORY INFORMATION

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is not a scheduled poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 65158.

This product is classified as a Hazardous Substance under the criteria of Safe Work Australia.

This product is not classified as a Dangerous Good according to the ADG Code (7th Ed).

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This product is not classified as a Dangerous Good according to International Maritime Dangerous Goods (IMDG) Code and the International Air Transport Association (IATA).

Requirements concerning special training:

Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16. OTHER INFORMATION

16.1. Date of preparation or last revision of SDS

Revised on 06/12/2021

Revisions Highlighted: The SDS was reviewed to include GHS requirements.

16.2. Contact Point

Sanonda (Australia) Pty Ltd

Suite 822, St Kilda Road Towers,

No.1 Queens Road, Melbourne, VIC 3004

Telephone: 03 9863 8081

Facsimile: 03 9863 8083

16.3. Key/legend to abbreviations and acronyms used in the SDS

ADG Code: Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail)

IMDG Code: International Maritime Dangerous Goods

This SDS contains only safety-related information. For other data see product literature.

All due care and skill, so far as practicable, has been applied in the preparation and collation of the information in this SDS. Each user of the Product named in this SDS should read and consider the information contained in this SDS in the context of how the Product will be stored, handled, used or applied in the workplace. In all circumstances, it is the responsibility of the user of the Product to ensure that they have sought out the relevant safety data appropriate to their particular situation. Nothing contained in this SDS shall be construed as a representation or recommendation to the user about the suitability or otherwise of the Product named in this SDS for the user's particular situation. If the user requires any clarification or further information, the user should contact Sanonda (Australia) Pty Ltd.

National Poisons Information Centre: Dial 13 11 26 (from anywhere in Australia)

Please read all labels carefully before using product.