

MATERIAL SAFETY DATA SHEET

Section 1 - Identification of Chemical Product and Company

Company: Spectra Chemicals and Commodities (Shanghai) Co.,Ltd.

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Product Name: Spectra Simazine 900 WDG

Product Use: Broad spectrum herbicide for selective weed control in certain crops, and for total vegetation control at higher rates.

Creation Date: 25th, July 2006

Revision Date: 24th, July 2008

Section 2 - Hazards Identification

Hazard classification: Hazardous substance. Non-dangerous goods.

Risk phrases: R20/22 Harmful by inhalation and if swallowed.

R40 Limited evidence of carcinogenic effects.

Safety phrases: S20/21 When using do not eat or drink/smoke

S24/25 Avoid contact with skin/eyes

S29/35 Do not empty into drains/Dispose of material and container in a safe way

SUSDP Classification: Exempt.

ADG Classification: Not a dangerous good

UN Number: None allocated

Section 3 - Composition/Information on Ingredients

Ingredients	CAS Number	Proportion
Simazine	122-34-9	900g/kg
Inert filler, dispersants		Balance

Section 4 - First Aid Measures

Skin contact: Remove contaminated clothing. Wash contaminated skin with soapy water. If skin irritation develops, get medical attention. Wash clothing thoroughly before re-use.

Eye contact: Rinse eye(s) with clean running water for 15 mins. Get medical attention.

Ingestion: Rinse mouth. Give water to drink if patient is conscious. DO NOT induce vomiting. If vomiting occurs ensure patient can breathe, then give water to drink. Get medical attention.

Advice to doctor: No specific antidote is known. Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable extinguishing media: Carbon dioxide, dry chemical, foam, water fog.

Unsuitable extinguishing media: Water stream.

Special hazards in fire: Product is flammable. Combustion may release carbon dioxide, nitrogen oxides, and/or chlorine compounds.

Required special protective equipment for fire-fighters: Wear self contained breathing apparatus if in enclosed space.

MATERIAL SAFETY DATA SHEET

Section 6 - Accidental Release Measures

Emergency procedures: Wear protective equipment to prevent skin and eyes being affected. Evacuate unprotected and unnecessary personnel from area of spill. If material is spilling from a container, attempt to retain as much as possible in the original package. Prevent spillage entering drains or watercourse.

Methods for containment & cleanup: Scoop up spilled material into suitable bins/containers. If possible, collect pure material first. This may be re-usable. Scoop Simazine 900 and contaminated soil next. Take enough soil to ensure all Simazine 900 is included. This material should be disposed of at a suitable landfill. Personal protective equipment and clothing should be washed with soapy water.

Section 7 - Handling and Storage

Handling: Keep away from food, drink, and animal feedstuff. KEEP OUT OF REACH OF CHILDREN. Wear suitable Personal protective equipment when handling and spraying.

Storage: Store in the original container in a dry, cool, ventilated, LOCKED area. DO NOT store in prolonged sunlight. DO NOT store with food, seed, or animal feedstuff.

Section 8 - Exposure Controls and Personal Protection

National exposure standards: Not set. Use default values of 5 mg/m³.

Biological limit values: The ADI for Simazine is set at 0.005mg/kg/day. The corresponding NOEL is set at 0.5mg/kg/day.

Engineering measures: Use assisted ventilation in enclosed spaces if needed, especially storage areas.

Personal protection equipment:

Eye/face protection: Goggles or glasses to AS 1366, AS/NZS1337

Hand/skin protection: Overalls, PVC gloves and apron, face shield

Respiratory protection: Should not be necessary under normal conditions. If spray mist may be encountered, a particulate filter to AS/NZS 1715 should be worn.

Section 9 - Physical and Chemical Properties

Appearance	Pale coloured granule
Odour	Faint.
pH	Weakly alkaline in water suspension.
Melting/Freezing Point	Decomposes at $\approx 225^{\circ}\text{C}$.
Solubility in Water	≈ 6 ppm.
Boiling Point/Range	Not applicable.
Specific Gravity-density (H₂O=1)	Granules variable but > 1 . Bulk density ≈ 0.9 .
Vapour Pressure	Negligible.
Vapour Density	Not applicable.
Flash Point	N/A
Ignition Temperature	N/A
Flammable Limits	N/A
Explosion Properties	N/A

MATERIAL SAFETY DATA SHEET

Section 10 - Stability and Reactivity

Chemical stability: Product is stable, will not spontaneously react or polymerise.

Conditions to avoid: Moisture, High temperature.

Materials to avoid: Strong oxidizing agents.

Hazardous decomposition products: Could produce carbon monoxide, oxides of nitrogen and chlorine.

Hazardous reactions: Non likely.

Section 11 - Toxicological Information

Acute toxicity: Oral LD50 for technical Simazine in rats and mice is >5000 mg/kg; its dermal LD50 is 3100 mg/kg in rats and > 10,000 mg/kg in rabbits. The 4-hour inhalation LC50 in rats is greater than 2 mg/L. The formulated products, in most cases, are less toxic via all routes. Simazine is nonirritating to the skin and eyes of rabbits except at high doses. Patch tests on humans have shown that Simazine is not a skin irritant, fatiguing agent, or sensitizer. However, rashes and dermatitis from occupational exposure to Simazine have occurred.

Chronic toxicity: Some 90-day feeding studies showed reduced body weight at 67 to 100 mg/kg/day. This same effect and kidney toxicity were seen in rats at doses of 150 mg/kg/day. In 2-year chronic oral feeding studies in which rats were given daily dosages of 5 mg/kg/day of Simazine in the diet, no gross or microscopic signs of toxicity were seen. 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. Other effects observed in test animals include tremors, damage to the testes, kidneys, liver, and thyroid, disturbances in sperm production, and gene mutations. Organ toxicity: Damage to the testes, kidneys, liver, and thyroid has been observed in test animals.

Possible routes of exposure: Inhalation of spray mist is the most likely cause of exposure.

Range of effects. Excessive exposure may affect human health as follows:

Skin contact: Reactions would be rare.

Eye contact: Dry granule material will cause irritation. Dispersions in water less so.

Inhalation/ingestion: Symptoms of poisoning include abdominal pain, diarrhoea and vomiting, eye irritation, irritation of mucous membranes, and skin reactions.

Relevant negative data:

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. Reproductive effects are not likely in humans under normal circumstances.

Teratogenic effects: No dose-related teratogenic effects were observed when rabbits were given daily doses of 5, 75, or 200 mg/kg for days 7 through 19 of pregnancy. Simazine does not appear to be teratogenic.

Mutagenic effects: Simazine has shown negative results in a variety of mutagenicity tests on bacterial cultures. It is likely that Simazine is either nonmutagenic or weakly mutagenic.

Carcinogenic effects: Simazine was not tumorigenic in mice at the maximum tolerated dose of 215 mg/kg/day over an 18-month period. In other studies, doses as low as 5 mg/kg/day produced excess tumours (thyroid and mammary) in female rats. Because of inconsistencies in the data, it is not possible to determine Simazine's carcinogenic status.

Section 12 - Ecological Information

Aquatic organisms: Very low toxicity to fish, crustaceans & micro-organisms. Highly toxic to most plants and algae.

Flora: Toxic to plants

Fauna: Low toxicity to birds, mammals, reptiles, etc.

MATERIAL SAFETY DATA SHEET

Soil organisms: Low toxicity to worms, bacteria, insects. Toxic to soil algae.

Bees: Low toxicity.

Long term: Simazine is a soil persistent herbicide that may have effects up to 2 years after application, depending on rate.

Ozone effects: None recorded.

Persistence/degradation: Simazine is a relatively persistent herbicide. It has a half life of weeks to months, depending on soil bio-activity.

Mobility: Simazine does not leach appreciably, due to its low solubility.

Bioaccumulative potential: Unknown but probably low.

Section 13 - Disposal Considerations

Product: Whenever possible, product should be used for its intended purpose, even if reclaimed from spillage (reclaimed product must be uncontaminated).

Containers: Whenever possible, follow directions given on container. If not available, triple or pressure rinse plastic or metal containers before disposal. Recycle containers if possible (replace cap and return clean containers to recycler or designated collection point). Treat rinsings as for product above. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

Sewage: Do not dispose of product or rinsings into sewage systems or septic tanks.

Section 14 - Transport Information

U.N. Number	None allocated
Proper Shipping Name	None allocated
DG Class	Not a dangerous good.
Hazchem Code	
Packing Group	
Special precautions	Do not store with foodstuffs.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

This product is an Agricultural Chemical registered by the Agricultural Pesticides and Veterinary Medicines Authority.

It is Classified X_n (Harmful) by Australian Hazardous Substances Information System

Section 16 - Other Information

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

MATERIAL SAFETY DATA SHEET

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

END OF MSDS

Spectra AG