

**SECTION 1 - IDENTIFICATION OF CHEMICAL PRODUCT AND COMPANY**

United Phosphorus Ltd,  
Level 3, Unit 14, 30 Atchison St  
St Leonards, NSW 2065

Telephone (02)9460 8480

Fax (02)9460 8980

**Trade Name:** United Phosphorus SimaPhos 900 WG Herbicide  
**Substance:** Simazine is a 1,3,5-triazine derivative.  
**Product Use:** Agricultural herbicide for use as described on the product label.  
**Creation Date:** March, 2009  
**This version issued:** March, 2009

**SECTION 2 - HAZARDS IDENTIFICATION****Statement of Hazardous Nature**

This product is classified as: Carc. Cat. 3. N. Hazardous according to the criteria of ASCC Australia.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** R40, R50/53. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

**Safety Phrases:** S2, S22, S25, S46, S60, S61, S36/37. Keep out of reach of children. Do not breathe dust. Avoid contact with eyes. If swallowed, contact a doctor or Poisons Information Centre immediately and show this container or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Wear suitable protective clothing and gloves.

**SUSDP Classification:** None allocated.

**ADG Classification:** None allocated. Not a Dangerous Good under the ADG Code.

**UN Number:** None allocated

**Emergency Overview**

**Physical Description & colour:** White granulated solid.

**Odour:** Mild, nonspecific odour.

**Major Health Hazards:** may cause irreversible effects.

**Potential Health Effects****Inhalation**

**Short term exposure:** Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism. Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

**Long Term exposure:** No data for health effects associated with long term inhalation.

**Skin Contact:**

**Short term exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.

**Long Term exposure:** No data for health effects associated with long term skin exposure.

**Eye Contact:**

**Short term exposure:** This product may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort which should disappear once product is removed.

**Long Term exposure:** No data for health effects associated with long term eye exposure.

**Ingestion:**

**Short term exposure:** Significant oral exposure is considered to be unlikely. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.

**Long Term exposure:** No data for health effects associated with long term ingestion.

**Carcinogen Status:**

**ASCC:** Simazine is classified by ASCC as a Class 3 Carcinogen, possibly carcinogenic to humans.

See the ASCC website for further details. A web address has not been provided as addresses frequently change.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** Simazine is Class 3 - unclassifiable as to carcinogenicity to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

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## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc,%	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Simazine	122-34-9	900g/kg	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

## SECTION 4 - FIRST AID MEASURES

### General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

**Inhalation:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Skin Contact:** Gently brush away excess solids. Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

**Eye Contact:** Quickly and gently brush particles from eyes. No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

## SECTION 5 - FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. This product, if scattered, may form flammable or explosive dust clouds in air.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. Do not scatter spilled material with high pressure water jets.

**Flash point:** Not flammable.

**Upper Flammability Limit:** No data.

**Lower Flammability Limit:** No data.

**Autoignition temperature:** No data.

**Flammability Class:** No data.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that dusts are likely to build up in cleanup area, we recommend that you use a suitable Dust Mask. Use a P1 mask, designed for use against mechanically generated particles eg silica & asbestos.

Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Consider vacuuming if appropriate. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## SECTION 7 - HANDLING AND STORAGE

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to

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persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

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## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

**ASCC Exposure Limits**                      **TWA (mg/m<sup>3</sup>)**                                      **STEL (mg/m<sup>3</sup>)**

Exposure limits have not been established by ASCC for any of the known significant ingredients in this product.

The ADI for Simazine is set at 0.005mg/kg/day. The corresponding NOEL is set at 0.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values from Australian ADI List, April 2008.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.

**Eye Protection:** Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

**Skin Protection:** The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when skin contact is likely.

**Protective Material Types:** We suggest that protective clothing be made from the following: rubber, PVC.

**Respirator:** If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask.

Safety deluge showers should, if practical, be provided near to where this product is being used.

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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

<b>Physical Description &amp; colour:</b>	White granulated solid.
<b>Odour:</b>	Mild, nonspecific odour.
<b>Boiling Point:</b>	Not applicable.
<b>Freezing/Melting Point:</b>	Simazine melts with decomposition at 225-227°C
<b>Volatiles:</b>	No specific data. Expected to be low at 100°C.
<b>Vapour Pressure:</b>	Simazine 2.94x10 <sup>-3</sup> mPa at 25°C
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	No data. Bulk density about 0.4
<b>Water Solubility:</b>	Simazine; 6.2mg/L at pH 7. However, granules are wettable; form slurry.
<b>pH:</b>	No data.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	No data
<b>Autoignition temp:</b>	No data.

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## SECTION 10 - STABILITY AND REACTIVITY

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatibilities:** strong acids, strong bases, strong oxidising agents.

**Fire Decomposition:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** This product will not undergo polymerisation reactions.

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## SECTION 11 - TOXICOLOGICAL INFORMATION

### Toxicity: Simazine

An information profile for Simazine is available at <http://extoxnet.orst.edu/pips/ghindex.html>

**Acute toxicity:** The reported oral LD<sub>50</sub> for technical Simazine in rats and mice is >5000 mg/kg; its dermal LD<sub>50</sub> is 3100 mg/kg in rats and > 10,000 mg/kg in rabbits. The 4-hour inhalation LC<sub>50</sub> 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. Symptoms exhibited by poisoned sheep included lower food intake, higher water intake, incoordination, tremors, and weakness, especially in the hindquarters.

**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.

**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.

**Organ toxicity:** Damage to the testes, kidneys, liver, and thyroid has been observed in test animals.

**Fate in humans and animals:** Studies in rats, goats, and sheep reveal that 60 to 70% of the ingested dose may be absorbed into the system, with approximately 5 to 10% distributed systemically to tissues. The remainder is eliminated via urine within 24 hours. It has been reported that Simazine residues were present in the urine of sheep for up to 12 days after administration of a single oral dose. The maximum concentration in the urine occurred from 2 to 6 days after administration.

## Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Simazine	Conc>=1%: Xn; R40

## SECTION 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

**Effects on birds:** Simazine is practically nontoxic to birds. The reported LD<sub>50</sub> values in mallard and Japanese quail are >4600 mg/kg and 1785 mg/kg, respectively. Similar high values are reported for other species.

**Effects on aquatic organisms:** Simazine is slightly to practically nontoxic to aquatic species.

**Effects on other organisms:** While many mammals may be insensitive to Simazine, sheep and cattle are especially sensitive. Simazine is nontoxic to bees. A soil LC<sub>50</sub> in earthworms of >1000 mg/kg has been reported.

### Environmental Fate:

**Breakdown in soil and groundwater:** Simazine is moderately persistent with an average field half-life of 60 days. Soil half-lives of 28-149 days have been reported. Residual activity may remain for a year after application (2 to 4 kg/ha) in high pH soils. Simazine is moderately to poorly bound to soils. It does, however, adsorb to clays and mucks. Its low water solubility, however, makes it less mobile, limiting its leaching potential.

**Breakdown in water:** 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. Simazine may undergo hydrolysis at lower pH. It does not readily undergo hydrolysis in water at pH = 7.

**Breakdown in vegetation:** 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. Plants that are sensitive to Simazine accumulate it unchanged. It is possible that livestock or wildlife grazing on these plants could be poisoned.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**Disposal:** There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of

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Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

## SECTION 14 - TRANSPORT INFORMATION

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

## SECTION 15 - REGULATORY INFORMATION

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations.

## SECTION 16 - OTHER INFORMATION

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

### Acronyms:

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 <sup>th</sup> edition)
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>ASCC</b>	Office of the Australian Safety and Compensation Council
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSDP</b>	Standard for the Uniform Scheduling of Drugs & Poisons
<b>UN Number</b>	United Nations Number

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 MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. 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.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2001(2003)]

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