

**Section 1 - Identification of Chemical Product and Company**

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<b>Chemical nature:</b>	Metsulfuron methyl is a sulfonylurea derivative.
<b>Trade Name:</b>	<b>Cheminova Metsulfuron 600 WG Herbicide</b>
<b>APVMA Code:</b>	59544
<b>Product Use:</b>	Agricultural herbicide for use as described on the product label.

**Section 2 - Hazards Identification****Statement of Hazardous Nature**

This product is classified as: Not classified as hazardous according to the criteria of SWA.

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

**Risk Phrases:** Not Hazardous - No criteria found.**Safety Phrases:** Not Hazardous – No criteria found.**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:** Water soluble measure packs.**Odour:** Packs have no odour.**Major Health Hazards:** Systemic poisoning by sulfonylurea based compounds is unlikely, unless large quantities have been ingested. No accounts of poisoning by Metsulfuron-methyl are currently available.**Potential Health Effects****See section 11 for Chronic exposure studies.****Inhalation:****Short Term Exposure:** Available data indicates that this product is not harmful. However, this product is unlikely to cause any discomfort or irritation.**Skin Contact:****Short Term Exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition, this product is believed to be mildly irritating, but is unlikely to cause anything more than mild transient discomfort.**Eye Contact:****Short Term Exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition, this product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.**Ingestion:****Short Term Exposure:** Available data shows that this product is not harmful. This product is unlikely to cause any irritation problems in the short or long term.**Carcinogen Status:****NOHSC:** No significant ingredient is classified as carcinogenic by NOHSC.

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

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

### Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Metsulfuron methyl	74223-64-6	60	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 should not be exceeded for more than 15 minutes and should not be repeated for 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 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:** Blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 10 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). If irritation persists, repeat flushing and obtain medical advice.

**Eye Contact:** Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face.

**Ingestion:** First aid is not generally required. 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.

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:

**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:** Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including face mask, face shield and gauntlets. All skin areas should be covered. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. 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. 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 persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** Make sure that containers of this product are kept tightly closed. Keep containers of this product in a well ventilated area. Make sure that the product does not come into contact with substances listed under "Materials to avoid" in Section 10. Check packaging – there may be further storage instructions on the label.

### 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**.

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

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

The ADI for Metsulfuron methyl is set at 0.01mg/kg/day. The corresponding NOEL is set at 1mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values from Australian ADI List, January 2001.

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

**Eye Protection:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

**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.

### Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Water soluble measure packs.
<b>Odour:</b>	Packs have no odour.
<b>Boiling Point:</b>	No specific data. Expected to decompose before boiling.
<b>Freezing/Melting Point:</b>	No specific data. Solid at normal temperatures.
<b>Volatiles:</b>	No data.
<b>Vapour Pressure:</b>	No data.
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	No data.
<b>Water Solubility:</b>	Soluble.
<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.

### 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:** This product should be kept in a cool place, preferably below 30°C. Containers should be kept dry.

**Incompatibilities:** Water, 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. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.

**Polymerisation:** This product is unlikely to undergo polymerisation processes.

### Section 11 - Toxicological Information

**Acute Toxicity:** Metsulfuron methyl has very low toxicity in mammals. Based on laboratory tests, the oral dose of Metsulfuron-methyl that causes mortality in half of the test animals (LD<sub>50</sub>) is > 5,000 mg/kg in rats. It has low dermal toxicity in tests with rabbits, with an LD<sub>50</sub> > 2,000 mg/kg, and low inhalation toxicity in rats, with a median lethal concentration in air of greater than 5 mg/liter air. Moderate but reversible eye irritation has been seen in rabbits, and mild skin irritation has been observed in guinea pigs. No skin sensitization has been observed in guinea pigs.

**Chronic Toxicity:** A 2-year feeding study in rats resulted in a No Observable Effects Level (NOEL) of 25.0 mg/kg/day (or 500 ppm in feed), based on decreased body weights seen at 250 mg/kg/day (5,000 ppm) which was the highest dose tested. EPA has based its reference dose (0.25 mg/kg/day) on this study.

**Reproductive Effects:** Multigeneration studies in rats did not result in any reproductive effects at the highest doses tested of 250 mg/kg/day.

**Teratogenic Effects:** Metsulfuron-methyl did not cause developmental abnormalities to offspring of rats and rabbits fed 1000 mg/kg/day and 700 mg/kg/day respectively during gestation. These doses represent the highest dose tested for each experiment.

**Mutagenic Effects:** The weight of evidence presented by a battery of tests to measure mutagenicity and other adverse effects on DNA indicates that Metsulfuron-methyl is neither mutagenic nor genotoxic.

**Carcinogenic Effects:** Negative for rats and mice in laboratory tests, but studies may not have been at maximum tolerated dose.

**Organ Toxicity:** Metsulfuron-methyl is a moderate eye irritant.

**Fate in Humans and Other Animals:** The chemical is broken down quickly and eliminated from the body. In tests with radio labelled Metsulfuron-methyl in rats, the excretion half-lives ranged from 9 to 16 hours and 23 to 29 hours for rats administered low and high doses, respectively. It did not bioaccumulate in fish.

### Section 12 - Ecological Information

**Effects on Birds:** Metsulfuron-methyl has very low avian toxicity. The oral LD<sub>50</sub> value for mallard ducks is greater than 2510 mg/kg, and dietary LC<sub>50</sub> values for mallard ducks and bobwhite quail are greater than 5620 ppm.

**Effects on Aquatic Organisms:** The chemical has very low toxicity to aquatic organisms. 96-hour LC<sub>50</sub> values are greater than 150 mg/l in rainbow trout and bluegill. Forty-eight hour toxicity tests with the freshwater invertebrate *Daphnia magna* resulted in a LC<sub>50</sub> of greater than 150 mg/l. A 21-day life-cycle test with *Daphnia magna* also exhibited very low toxicity. The NOEL for survival and reproduction was >150 mg/l.

**Effects on Other Animals (Non target species):** Metsulfuron-methyl has low acute toxicity to honey bees with a topical LD<sub>50</sub> of greater than 25 µg/bee. The LC<sub>50</sub> for earthworms is greater than 1,000 mg/kg soil.

#### ENVIRONMENTAL FATE

**Breakdown of Chemical in Soil and Groundwater:** The breakdown of Metsulfuron-methyl in soils is largely dependant on soil temperature, moisture content, and pH. The chemical will degrade faster under acidic conditions, and in soils with higher moisture content and higher temperature. The chemical has a higher mobility potential in alkaline soils than in acidic soils, as it is more soluble under alkaline conditions. Metsulfuron-methyl is stable to photolysis, but will break down in ultraviolet light. Half-life estimates for Metsulfuron-methyl in soil are wide ranging from 14 - 180 days, with an overall average of reported values of 30 days. Reported half-life values (in days) for soil include: clay - 178 ; sandy loam - 102 ; clay loam - 70 , 14-28 , 14-105 ; silty loam - 120-180.

**Breakdown of Chemical in Surface Water:** The dissipation time for Metsulfuron-methyl was investigated in a mixed wood/boreal forest lake. The DT<sub>50</sub> or length of time required for half of the material to dissipate in water was >84 days when high concentrations of Metsulfuron-methyl were applied, and 29.1 days at concentrations that might be expected if the chemical is applied for forestry uses. It is stable to hydrolysis at neutral and alkaline pHs, and has a

half-life of 3 weeks at pH 5.0, 25°C and >30 days at 15°C.

**Breakdown of Chemical in Vegetation:** Metsulfuron-methyl is rapidly taken up by plants at the roots and on foliage. The chemical is translocated throughout the plant, but is not persistent. It is broken down to non-herbicidal products in tolerant plants.

### Section 13 - Disposal Considerations

**Disposal:** Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

### 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 Material Safety Data Sheet 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 SDS 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.

#### **DISCLAIMER**

This product must be used, stored and handled strictly as directed in accordance with this Safety Data Sheet, the label, packaging and other reference material ("Directions"). To the extent permitted by law Cheminova Pty Ltd and its related companies will have no liability for any injury, loss or damage arising from a failure to follow the Directions.