

**SECTION 1 - IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

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**Chemical nature:** Glyphosate is a glycine (amino acid) derivative, present as the ammonium salt.  
**Trade Name:** **Glister 680 SG Herbicide**  
**APVMA Number:** 60560  
**Product Use:** Agricultural herbicide for use as described on the product label.  
**Creation Date:** **June, 2011**  
**This version issued:** **May, 2017** and is valid for 5 years from this date.

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

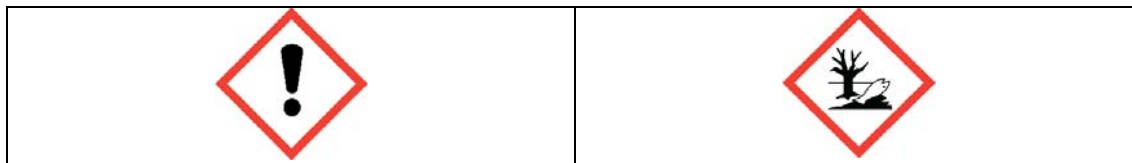
This product is classified as: Not classified as hazardous according to the criteria of SWA.

Not subject to the ADG Code when transported in Australia by Road or Rail (refer to SP AU01). However if transported by Air or Sea, this provision does not apply. Then the product is classed as Dangerous (Class 9 Environmentally Hazardous) by IATA and IMDG/IMSBC respectively. See details below and in Section 14 of this SDS.

**SUSMP Classification:** S5

**ADG Classification:** Class 9: Miscellaneous dangerous goods.

**UN Number:** 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Glyphosate).

**GHS Signal word: WARNING.**

Skin Irritation Category 2

Eye irritation Category 2B

Hazardous to aquatic environment Short term/Chronic Category 2

**HAZARD STATEMENT:**

H315: Causes skin irritation.

H320: Causes eye irritation.

H411: Toxic to aquatic life with long lasting effects.

**PREVENTION**

P102: Keep out of reach of children.

P262: Do not get in eyes, on skin, or on clothing.

P264: Wash contacted areas thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves, protective clothing and eye or face protection.

**RESPONSE**

P362: Take off contaminated clothing and wash before reuse.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313: If skin irritation occurs: Get medical advice.

P337+P313: If eye irritation persists: Get medical advice.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

**STORAGE**

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

**DISPOSAL**

P501: Dispose of contents and containers as specified on the registered label.

**SAFETY DATA SHEET**

## Emergency Overview

**Physical Description & Colour:** Yellowish to white granules.

**Odour:** No odour.

**Major Health Hazards:** no significant risk factors have been found for this product.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc, %	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Glyphosate (as the mono-ammonium salt)	1071-83-6	680g/kg	not set	not set
Other non hazardous ingredients	various	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 SWA 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 SDS 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 particles. 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:** The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. 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:** Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

**Flash point:** No data. Unlikely to support combustion.

**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, Viton. Eye/face protective equipment should comprise as a minimum, protective 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.

## SAFETY DATA SHEET

Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS 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 SDS 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:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Protect this product from light. 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.

## 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**, Occupational Protective Clothing: AS/NZS 4501 set 2008, 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 SWA for any of the significant ingredients in this product.

The ADI for Glyphosate (as the mono-ammonium salt) is set at 0.3mg/kg/day. The corresponding NOEL is set at 30mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, March 2016.

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:** This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

**Eye Protection:** Eye protection such as protective glasses or goggles is recommended when this product is being used.

**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 materials: rubber, PVC, Viton.

**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.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES:

<b>Physical Description &amp; colour:</b>	Yellowish to white granules.
<b>Odour:</b>	No odour.
<b>Boiling Point:</b>	Not applicable.
<b>Freezing/Melting Point:</b>	Decomposes before melting.
<b>Volatiles:</b>	Nil at 100°C.
<b>Vapour Pressure:</b>	Nil at normal ambient temperatures.
<b>Vapour Density:</b>	Not applicable.
<b>Specific Gravity:</b>	No data. Bulk density 0.52 approx
<b>Water Solubility:</b>	Soluble.
<b>pH:</b>	3 - 5 (10% in water).
<b>Volatility:</b>	Nil at normal ambient temperatures.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	Not applicable.
<b>Coeff Oil/water Distribution:</b>	No data
<b>Viscosity:</b>	Not applicable.
<b>Autoignition temp:</b>	No data.

## SAFETY DATA SHEET

## 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:** Protect this product from light. 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:** Combustion forms carbon dioxide, and if incomplete, carbon monoxide and smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. 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.

## SECTION 11 - TOXICOLOGICAL INFORMATION

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

**Acute toxicity:** Oral LD<sub>50</sub> values for glyphosate are greater than 10,000 mg/kg in mice, rabbits, and goats. The toxicities of the technical acid (glyphosate) and the formulated product are nearly the same. It is practically nontoxic by skin exposure, with reported dermal LD<sub>50</sub> values of greater than 5000 mg/kg for the acid and isopropylamine salt. The trimethylsulfonium salt has a reported dermal LD<sub>50</sub> of greater than 2000 mg/kg. The reported 4-hour rat inhalation LC<sub>50</sub> values for the technical acid and salts were 5 to 12 mg/L, indicating moderate toxicity via this route. Some formulations may show high acute inhalation toxicity. While it does contain a phosphatyl functional group, it is not structurally similar to organophosphate pesticides which contain organophosphate esters, and it does not significantly inhibit cholinesterase activity.

**Chronic toxicity:** Studies of glyphosate lasting up to 2 years, have been conducted with rats, dogs, mice, and rabbits, and with few exceptions no effects were observed. For example, in a chronic feeding study with rats, no toxic effects were observed in rats given doses as high as 400 mg/kg/day. Also, no toxic effects were observed in a chronic feeding study with dogs fed up to 500 mg/kg/day, the highest dose tested.

**Reproductive effects:** Laboratory studies show that glyphosate produces reproductive changes in test animals very rarely and then only at very high doses (over 150 mg/kg/day). It is unlikely that the compound would produce reproductive effects in humans.

**Teratogenic effects:** In a teratology study with rabbits, no developmental toxicity was observed in the foetuses at the highest dose tested (350 mg/kg/day). Glyphosate does not appear to be teratogenic.

**Mutagenic effects:** Glyphosate mutagenicity and genotoxicity assays have been negative. It appears that glyphosate is not mutagenic.

**Carcinogenic effects:** Rats given oral doses of up to 400 mg/kg/day did not show any signs of cancer, nor did dogs given oral doses of up to 500 mg/kg/day or mice fed glyphosate at doses of up to 4500 mg/kg/day. It appears that glyphosate is not carcinogenic.

**Organ toxicity:** Some microscopic liver and kidney changes, but no observable differences in function or toxic effects, have been seen after lifetime administration of glyphosate to test animals.

**Fate in humans and animals:** Glyphosate is poorly absorbed from the digestive tract and is largely excreted unchanged by mammals. At 10 days after treatment, there were only minute amounts in the tissues of rats fed glyphosate for 3 weeks. Cows, chickens, and pigs fed small amounts of glyphosate had undetectable levels (less than 0.05 ppm) in muscle tissue and fat. Levels in milk and eggs were also undetectable (less than 0.025 ppm).

Glyphosate has no significant potential to accumulate in animal tissue. There is no data to hand indicating any particular target organs.

## Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Glyphosate (as Salt)	R51-53
<ul style="list-style-type: none"> <li>Hazardous to the aquatic environment (chronic) - category 2</li> </ul>	

## Potential Health Effects

### Inhalation:

**Short Term Exposure:** 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:

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**Short Term Exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be mildly irritating, but is unlikely to cause anything more than mild discomfort which should disappear once contact ceases.

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

#### **Eye Contact:**

**Short Term Exposure:** This product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.

**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:**

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

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

**IARC:** In 2015, IARC classified glyphosate as 'probably carcinogenic to humans', but has since (May 2016) concluded glyphosate is unlikely to pose a carcinogenic or genotoxic risk to humans.

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

## **SECTION 12 - ECOLOGICAL INFORMATION**

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

**Effects on birds:** Glyphosate is not harmful to wild birds. The dietary LC<sub>50</sub> in both mallards and bobwhite quail is greater than 4500 ppm.

**Effects on aquatic organisms:** Technical glyphosate acid is practically nontoxic to fish and may be slightly toxic to aquatic invertebrates. The reported 96-hour LC<sub>50</sub> values for other aquatic species include greater than 10 mg/L in Atlantic oysters, 934 mg/L in fiddler crab, and 281 mg/L in shrimp. The 48-hour LC<sub>50</sub> for glyphosate in Daphnia (water flea), an important food source for freshwater fish, is 780 mg/L. Some formulations may be more toxic to fish and aquatic species due to differences in toxicity between the salts and the parent acid or to surfactants used in the formulation. There is a very low potential for the compound to build up in the tissues of aquatic invertebrates or other aquatic organisms.

**Effects on other organisms:** Glyphosate is nontoxic to honeybees. Its oral and dermal LD<sub>50</sub> is greater than 0.1 mg/bee. The reported contact LC<sub>50</sub> values for earthworms in soil are greater than 5000 ppm for both the glyphosate trimethylsulfonium salt and formulated product.

#### **Environmental Fate:**

**Breakdown in soil and groundwater:** Glyphosate is moderately persistent in soil, with an estimated average half-life of 47 days. Reported field half-lives range from 1 to 174 days. It is strongly adsorbed to most soils, even those with lower organic and clay content.

**Breakdown in water:** In water, glyphosate is strongly adsorbed to suspended organic and mineral matter and is broken down primarily by microorganisms. Its half-life in pond water ranges from 12 days to 10 weeks.

**Breakdown in vegetation:** Glyphosate may be translocated throughout the plant, including to the roots. It is extensively metabolized by some plants, while remaining intact in others.

## **SECTION 13 - DISPOSAL CONSIDERATIONS**

**Disposal:** 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**

**Not subject to the ADG Code when transported by Road or Rail in Australia, but classed as Dangerous by IATA and IMDG/IMSBC when carried by Air or Sea transport (see details below).**

**ADG Code:** 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Glyphosate).

**Hazchem Code:** 2Z

**Special Provisions:** 179, 274, AU01

**Limited quantities:** ADG 7 specifies a Limited Quantity value of 5 kg for this class of product.

**Dangerous Goods Class:** Class 9: Miscellaneous Dangerous Goods.

**Packaging Group:** III

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**Packaging Method:** P002, IBC08, LP02

Class 9 Miscellaneous Dangerous Goods shall not be loaded in the same vehicle or packed in the same freight container with Dangerous Goods of Class 1 (Explosives).

**SECTION 15 - REGULATORY INFORMATION**

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Glyphosate, is mentioned in the SUSMP.

**SECTION 16 - OTHER INFORMATION**

**This SDS 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>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<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>SUSMP</b>	Standard for the Uniform Scheduling of Medicines & Poisons
<b>UN Number</b>	United Nations Number

THIS SDS 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 SDS 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 SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)  
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**SAFETY DATA SHEET**