



**AGRO-ALLIANCE**  
(AUSTRALIA) PTY LTD  
A.B.N.11 130 864 603

# **AGRO-ALLIANCE (AUSTRALIA) PTY LTD**

2, Mavron Street, Ashwood, VIC 3147, Australia  
Tel: +61 3 86442677 / 86442679 Fax: +61 3 98073883 Email: [info@agroalliance.com.au](mailto:info@agroalliance.com.au)

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

2,4-D as isopropylamine salt, a phenoxy herbicide, Group I Herbicide.

**Trade Name:** Agro-Essence 2,4-D 300 Herbicide

**Product Use:** A liquid broadleaf herbicide

**Company:** Agro-Alliance (Australia) Pty Ltd.

**Address:** 2, Mavron Street, Ashwood VIC 3147, Australia

**Telephone Number:** +61 03 86442677 / 86442679

**Fax Number:** +61 03 98073883

**Website:** [www.agroalliance.com.au](http://www.agroalliance.com.au)

**Issue Date:** June 2013

## **Section 2 - Hazards Identification**

### **Statement of Hazardous Nature**

Classified as hazardous according to criteria of Safe Work Australia.

Not classified as a Dangerous Good according to the ADG Code

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

**Safety Phrases:** S2 Keep out of reach of children.

S13 Keep away from food, drink and other animal foodstuffs.

S23 Do not breathe vapour or spray.

S24/25 Avoid contact with skin and eyes.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

## **Section 3 - Composition/Information on Ingredients**

<b>Ingredients</b>	<b>CAS No</b>	<b>Conc, %</b>
2,4-D present as the isopropylamine salt	32341-80-3	300 g/L
Other ingredients (including water) determined not to be hazardous		Balance



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## **Section 4 - First Aid Measures**

### **FIRST AID**

**Ingestion:** If swallowed do NOT induce vomiting. Wash mouth with water. If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 131 126.

**Eye contact:** Immediately hold eyes open and flood gently with clean water. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. If irritation persists, seek medical advice.

**Skin contact:** Remove contaminated clothing. Wash skin with soap and water to remove chemical. If skin is irritated, seek medical advice.

**Inhalation:** Remove to fresh air and observe until recovered. If effects persist, seek medical advice. In severe case, symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

**Advice to Doctor:** In humans, prolonged breathing of 2,4-D causes coughing, burning, dizziness, and temporary loss of muscle coordination. Other symptoms of poisoning can be fatigue and weakness with possible nausea. On rare occasions following high levels of exposure, there can be inflammation of the nerve endings with muscular effects. Product is harmful if swallowed, possible skin and respiratory tract irritant.

## **Section 5 - Fire Fighting Measures**

**Extinguishing media:** Not flammable. 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:** There is no risk of an explosion from this product under normal circumstances if involved in a fire. Product is unlikely to decompose until heated to dryness. On further heating will emit toxic fumes. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.

**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.



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## **Section 6 - Accidental Release Measures**

### **Emergency procedures / Material and methods for containment and cleanup**

**procedures:** Wear protective equipment to prevent skin/eye contamination. In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay, cat litter or material such as vermiculite and dispose of waste as indicated in section 13 or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Wear prescribed protective clothing and equipment. Keep out animals and unprotected persons.

## **Section 7 - Handling and Storage**

### **Precautions for Safe Handling:**

No smoking, eating or drinking should be allowed where material is used or stored.

When preparing spray wear PVC or rubber apron, overalls, elbow-length PVC gloves and face shield. When using the prepared spray wear face shield. Wash hands after use.

### **Conditions for Safe Storage:**

Not classified as a Dangerous Good. This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations. 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 and Personal Protection**

### **Exposure Guidelines:**

Exposure guidelines have not been established for this product by safe Work Australia.

**Biological Limit Values:** No biological limit allocated.

### **Engineering controls:**

Use in ventilated areas adequate to keep exposure below the TWA. Keep containers closed when not in use.

### **Personal Protective equipment (PPE):**

**General:** When opening the container, preparing the spray wear a PVC or rubber apron, cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves and face shield. Wash thoroughly before smoking, eating or using toilet facilities. Wash hands after use.

**Respiratory Protection:** Generally not required. Use of a respirator may be required in certain circumstances to protect from inhalation of spray mist.



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## **Section 9 - Physical and Chemical Properties:**

<b>Appearance:</b>	Red to brown coloured liquid.
<b>Odour:</b>	Mild ammoniacal odour.
<b>Boiling point:</b>	Approximately 100°C.
<b>Freezing point:</b>	Approximately 0°C.
<b>Specific Gravity:</b>	1.1 - 1.2 at 20°C.
<b>Solubility in Water:</b>	Soluble in water.
<b>pH:</b>	No data available.
<b>Flammability:</b>	Not flammable.
<b>Corrosive hazard:</b>	Not corrosive.
<b>Flashpoint (°C):</b>	Not flammable.
<b>Poisons Schedule:</b>	S6..

## **Section 10 - Stability and Reactivity**

**Chemical Stability:** Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

**Conditions to avoid:** Do not store for prolonged periods in direct sunlight.

**Incompatible materials:** Strong acids, strong bases and strong oxidising agents. Reaction of the concentrate or spray mix with acids will precipitate solid 2,4-D acid and significantly deactivate the product and cause blockages in spray equipment.

**Hazardous decomposition products:** Product is unlikely to decompose until heated to dryness. On further heating will emit toxic fumes.

**Hazardous reactions:** No particular reactions to avoid.

## **Section 11 - Toxicological Information**

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

**Potential Health Effects:**

**ACUTE EFFECTS**



**Swallowed:** Harmful if swallowed. Acute oral LD50 for 2,4-D ranges from 375 to 666 mg/kg. Ingestion may cause irritation of the mouth, throat and stomach causing nausea, vomiting, sweating, headaches, muscle soreness, abdominal pain and loss of coordination.

**Eye:** This product may cause eye irritation. Symptoms may include stinging and reddening of eyes and watering. If exposure is brief, symptoms should disappear once exposure has ceased.

**Skin:** May cause mild irritation of the skin, but unlikely to be sensitising. A single prolonged exposure may result in material being absorbed in large amounts.

**Inhaled:** Harmful by inhalation, and is a possible inhalation irritant. Symptoms may include headache, irritation of nose and throat and increased secretion of mucous in the nose and throat. Other symptoms may also become evident, but they should disappear after exposure has ceased.

#### **Long Term Exposure:**

**Chronic toxicity:** Rats given high amounts of 2,4-D in the diet for 2 years showed no adverse effects. Dogs fed lower amounts in their food for 2 years died, probably because dogs do not excrete organic acids efficiently. A human given a total of 16.3 g in 32 days therapeutically, lapsed into a stupor and showed signs of in coordination, weak reflexes, and loss of bladder control.

**Reproductive effects:** High levels of 2,4-D administered orally to pregnant rats did not cause any adverse effects. The evidence suggests that if 2,4-D causes reproductive effects in animals, this only occurs at very high doses. Thus reproductive problems associated with 2,4-D are unlikely in humans under normal circumstances.

**Teratogenic effects:** 2,4-D may cause birth defects at high doses. Rats fed 150 mg/kg/day on days 6 to 15 of pregnancy had offspring with increased skeletal abnormalities. This suggests that 2,4-D exposure is unlikely to be teratogenic in humans at expected exposure levels.

**Mutagenic effects:** 2,4-D was found to be non-mutagenic in most systems. 2,4-D did not damage DNA in human lung cells. However, one study found significant effects occurred in chromosomes in cultured human cells at low exposure levels. The data suggest that 2,4-D is not mutagenic or has low mutagenic potential.

**Carcinogenic effects:** 2,4-D fed to rats for 2 years caused an increase in malignant tumours. Female mice given a single injection of 2,4-D developed cancer (reticulum-cell sarcomas). In humans, a variety of studies give conflicting results. Several studies suggest an association of 2,4-D exposure with cancer. An increased occurrence of non-Hodgkin's lymphoma was found among a Kansas and Nebraska farm population associated with the spraying of 2,4-D. Other studies done in New Zealand, Washington, New York, Australia, and on Vietnam veterans from the U.S. were all negative. There remains considerable controversy about the methods



used in the various studies and their results. Thus, the carcinogenic status of 2,4-D is not clear.

**Organ toxicity:** Most symptoms of 2,4-D exposure disappear within a few days, but there is a report of liver dysfunction from long-term exposure.

**Fate in humans and animals:** The absorption of 2,4-D is almost complete in mammals after ingestion and nearly all of the dose is excreted in the urine. 2,4-D is readily absorbed through the skin and lungs. Men given 5 mg/kg excreted about 82% of the dose as unchanged 2,4-D. The half-life is between 10 and 20 hours in living organisms. There is no evidence that 2,4-D accumulates to significant level in mammals or in other organisms..

## **Section 12 - Ecological Information**

### **Environmental Toxicology:**

This product does degrade in the environment. It will not accumulate in the soil or water or cause long term problems. 2,4-D is harmful to wildfowl and slightly to moderately toxic to birds. The LD50 is 1000 mg/kg in mallards, 272 mg/kg in pheasants, and 668 mg/kg in quail and pigeons. Limited studies indicate a half-life of less than 2 days in fish and oysters.

Concentrations of 10 mg/L for 85 days did not adversely affect the survival of adult dungeness crabs. For immature crabs, the 96-hour LC50 is greater than 10 mg/L, indicating that 2,4-D is only slightly toxic. Brown shrimp showed a small increase in mortality at exposures of 2 mg/L for 48 hours. Moderate doses of 2,4-D severely impaired honeybees brood production. At lower levels of exposure, exposed bees lived significantly longer than the controls. The honeybee LD50 is 0.0115 mg/bee.

### **Environmental Fate:**

2,4-D has low soil persistence. The half-life in soil is less than 7 days. Soil microbes are primarily responsible for its breakdown. In aquatic environments, microorganisms readily degrade 2,4-D. Rates of breakdown increase with increased nutrients, sediment load, and dissolved organic carbon. Under oxygenated conditions the half-life is 1 week to several weeks. 2,4-D interferes with normal plant growth processes. Uptake of the compound is through leaves, stems, and roots. Breakdown in plants is by a variety of biological and chemical pathways. 2,4-D is toxic to most broad leaf crops especially cotton, tomatoes, beets, and fruit trees.



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## **Section 13 - Disposal Considerations**

**Spills and Disposal:** Persons involved in cleanup require adequate skin protection - see section 8. In case of spillage, contain and absorb spilled material with absorbent material such as clay, sand or cat litter and dispose of waste as indicated below or in accordance to the Australian Standard 2507- Storage and Handling of Pesticides. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

**Disposal of empty containers:** Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. Empty containers and product should not be burnt.

## **Section 14 - Transport Information**

**Road & Rail Transport:** This product is not classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail. Not classified as a Dangerous Good for marine or air transport.

This product is a Schedule 6 Poison (S6) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

## **Section 15 - Regulatory Information**

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is a schedule 6 poison.

This product is classified as a Hazardous Substance under the criteria of Safe Work Australia. Xn: Harmful, Xi: Irritant.

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



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## **Section 16 - Other Information**

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

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)].