

SAFETY DATA SHEET

SECTION 1

IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **Apparent 2,4-D Ester 680 Herbicide**

Other Names: 2,4-D as the 2 ethylhexyl ester, a phenoxy herbicide, Group I Herbicide.
Use: An agricultural low volatile 2,4-D liquid broadleaf herbicide.
Company: Apparent Pty Ltd
Address: Suite G.08, 762 Toorak Road, Hawthorn East, Vic. 3123.
PO Box 3092, Cotham PO, Kew, Vic 3101
ACN/ABN: 143 724 136
Telephone Number: 03 9822 1321
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Emergency Contact: 0411 227 338

SECTION 2

HAZARDS IDENTIFICATION

**Classified as hazardous according to criteria of Safe Work Australia.
Not classified as a Dangerous Good according to the ADG Code.
Combustible Liquid (C1).**

Globally Harmonised System (GHS) classification of the substance/mixture:

Flammable Liquids – Category 4.
Acute Toxicity – Oral: Category 4.
Sensitization – Skin: Category 1, 1A, 1B.
Aspiration Hazard – Category 1.
Hazardous to the Aquatic Environment – Long-Term Hazard – Category 1.

Signal Word: DANGER

Hazard statements:

H227 Combustible liquid.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces: — No smoking.
P261 Avoid breathing mist, vapours or spray.
P264 Wash hands, arms and face thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P321 Specific treatment (see Safety Directions on the product label).
P330 Rinse mouth.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.

SECTION 2 HAZARDS IDENTIFICATION (Continued)

Response (Cont):

P370 + P378 In case of fire: Use carbon dioxide, foam or dry agent for extinction.
P391 Collect Spillage.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal: Specific Hazard: Generally considered a low risk due to the water content, but once the water has evaporated the product is combustible.

P501 Dispose of contents/container in accordance with national regulations.

Pictograms:



SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	CAS NUMBER	PROPORTION
2,4-D present as the 2 ethylhexyl ester	2008-39-1	680 g/L
Hydrocarbon solvent	64742-94-5	< 10%
Other ingredients (including water) determined not to be hazardous		Balance

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, may cause respiratory tract irritant and is a possible skin sensitiser.

SECTION 5 FIRE FIGHTING MEASURES

Specific Hazard: Combustible liquid. Flashpoint > 100°C.

Extinguishing media: Extinguish fire using carbon dioxide, foam or dry agent. If not available, use waterfog or fine water spray but ensure all runoff is contained.

Hazards from combustion products: Little risk of an explosion from this product if commercial quantities are involved in a fire. Decomposition products are likely to be noxious and toxic. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or smoke.

SECTION 5 FIRE FIGHTING MEASURES (Continued)

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.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures: Wear PVC or rubber apron and elbow-length PVC gloves and face shield 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 per the requirements of Local or State Waste Management Authorities. Keep out animals and unprotected persons.

Material and methods for containment and cleanup procedures: To clean spill area, tools and equipment, wash with a solution of soap, water and acetic acid/vinegar. Follow this with a neutralisation step of washing the area with a bleach or caustic soda ash solution. Finally, wash with a strong soap and water solution. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling: No smoking, eating or drinking should be allowed where material is used or stored. Poisonous if swallowed. Avoid contact with eyes and skin. DO NOT inhale spray mist. When preparing spray, wear PVC or rubber apron and elbow-length PVC gloves and face shield. When using the prepared spray, wear face shield. If product on skin, immediately wash area with soap and water. After use and before eating, drinking, or smoking, wash hands arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

Conditions for Safe Storage: 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. Not classified as a Dangerous Good. This product is a Schedule 6 Poison (S6) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines:**

There are no exposure guidelines for 2,4-D present as 2 ethylhexyl ester established by Safe Work Australia.

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Use in ventilated areas adequate to keep exposure minimised. Keep containers closed when not in use.

Personal Protective Equipment (PPE):

General: When preparing spray, wear PVC or rubber apron and elbow-length PVC gloves and face shield. When using the prepared spray, wear face shield. If product on skin, immediately wash area with soap and water. Avoid contact with eyes and skin. DO NOT inhale spray mist. After use and before eating, drinking, or smoking, wash hands arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

Personal Hygiene: Poisonous if swallowed. Avoid contact with eyes and skin. DO NOT inhale spray mist. Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow to brown liquid.
Odour: Typical phenoxy odour.
Boiling point: No data.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES (Continued)

Specific Gravity:	1.3 - 1.5 at 20°C.
Solubility in Water:	Emulsifies in water.
pH:	3 to 5.
Flammability:	Combustible liquid.
Corrosive hazard:	Not corrosive.
Flashpoint (°C):	> 100°C.
Flammability Limits (%):	Not established.
Poisons Schedule:	S6.
Formulation type:	Emulsifiable Concentrate.

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.

Hazardous decomposition products: Carbon dioxide, carbon monoxide, hydrogen chloride and other compounds of chlorine smoke and possible other toxic fumes.

Hazardous reactions: No particular reactions to avoid. Product will not undergo polymerisation.

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.

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 sensitisation by skin contact especially with prolonged contact. Avoid skin contact. Acute dermal LD₅₀ > 1500 mg/kg.

Inhaled: May be an inhalation irritant. No adverse effects are anticipated from single exposure to vapour or mist.

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 incoordination, 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.

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

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 is biodegradable. 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.

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.

Disposal of empty containers: Triple-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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).

Do not cut or saw empty containers, as there is the possibility that fumes inside the container maybe ignited and cause the container to explode.

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.

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 registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 65153

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

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

Requirements concerning special training:

Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16**OTHER INFORMATION**

Issue Date: 31 May 2016. Valid for 5 years till 31 May 2021. (Updated to GHS).

Key to abbreviations and acronyms used in this SDS:

ADG Code Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail).

Carcinogen An agent which is responsible for the formation of a cancer.

Genotoxic Capable of causing damage to genetic material, such as DNA.

HSIS: Hazardous Substances Information System.

Lavage: A general term referring to cleaning or rinsing.

Mutagen: An agent capable of producing a mutation.

NOHSC National Occupational Health and Safety Commission.

OCS Office of Chemical Safety.

Pneumonitis: A general term that refers to inflammation of lung tissue.

PPE Personal protective equipment.

Teratogen An agent capable of causing abnormalities in a developing foetus.

TWA The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

Safe Work Australia: Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC).

References

1. "Search Hazardous Substances". Australian Safety and Compensation Council website. (2016).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.
3. Globally Harmonized System of Classification and Labelling of Chemicals (GHS). United Nations, 2009.

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 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.

End SDS