
Product Name: Generex 2,4-D Ester 800
 Chemical Name: 2,4-dichlorophenoxyethylacetate.
 Chemical Class: Phenoxy herbicide.
 Hazchem Code: N/A
 UN No.: N/A.
 Dangerous Goods Class: N/A
 Packaging Group: III
 EPG: N/A
 Poison Schedule: S5
 Use: For the control of broadleaf weeds in cereals, pasture, sugar cane, Non-Crop and playing areas.

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Appearance & Odour: Clear reddish brown liquid with solvent odour.

Boiling point: About 200°C

Vapour pressure: 1.05 x 10.2 mbar @ 25 degrees C

Volatile materials: 22%.

Flashpoint: 100 degrees C.

Specific gravity: Approximately 1.200

Solubility in water: Miscible.

Corrosiveness: Not corrosive.

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Component	CAS No	%
2,4-D as the Ester	533-23-3	80%(w/v)
Hydrocarbon Solvent	64742-94-5	<19.5% (w/v)
General Surfactants		<9.0%

This product is classified as hazardous to the environment (H11) and is highly flammable (F+).

Eye: A severe eye irritant in rabbits.

Inhaled: Respiratory tract irritant.

Other Health Effects: Ingestion can cause: nausea; vomiting; central nervous system depression;
High exposure can cause: liver and kidney damage;

Chronic:

The no observable effect level (2 yr) for rats and mice was 1mg/kg body weight.

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If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, and if more than 15 minutes from a hospital, induce vomiting, preferably using Ipecac Syrup APF.

Swallowed: Give plenty of water to drink and induce vomiting. Use fingers in the throat, Ipecac Syrup APF or similar emetic. Seek immediate medical assistance.

Eye: Immediately irrigate with copious quantities of water for at least 15 minutes. Seek medical assistance.

Skin: Remove contaminated clothing. Wash affected areas with plenty of soap and water.

Inhaled: Remove victim to fresh air. Seek medical advice.

Other First Aid: DO NOT attempt to give anything to a semi-conscious or unconscious person. In the case of poisoning by any exposure route, contact a doctor or Poisons Information Centre.

Advice to Doctor: No specific antidote known. Treat symptomatically.

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Exposure Standards: TLV (as 2,4-D) 10.0 mg/m³ (ACGIH).

Engineering Controls: Use in a well ventilated area only.

Personal Protection: Poisonous if swallowed. Avoid contact with eyes and skin. Do not inhale spray mist. When preparing the spray, wear PVC or rubber apron, elbow-length PVC gloves and face shield. When using the prepared spray wear a 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.

Flammability: Combustible.

Environment: Low hazard to bees. Dangerous to fish. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply under meteorological conditions or from spraying equipment which could be expected to cause spray to drift onto nearby plants,

adjacent crops, crop lands or pastures. Avoid spray drift and vapour movement onto susceptible crops such as cotton, tobacco, tomatoes, vines, lupins, fruit trees and ornamentals. Acute oral LD₅₀ (technical acid) for wild duck >1,000mg/kg; for Japanese quail and pigeons 668mg/kg; for pheasants 472mg/kg. LC₅₀ (48 hours) (technical acid) for rainbow trout 1.1mg/L.

Other Use Precautions: To be used strictly in accordance with label instructions.

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Acute toxicity: The acid form is of slight to moderate toxicity. The oral LD₅₀ of 2,4-D ranges from 375 to 666 mg/kg in the rat, 370 mg/kg in mice and from less than 320 to 1000 mg/kg in guinea pigs. The dermal LD₅₀ values are 1500 mg/kg in rats and 1400 mg/kg in rabbits, respectively. 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.

Chronic toxicity: Rats given high amounts, 50 mg/kg/day, 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 (about 50 mg/kg/day) administered orally to pregnant rats did not cause any adverse effects on birth weights or litter size. Higher doses (188 mg/kg/day) resulted in foetuses with abdominal cavity bleeding and increased mortality. DNA synthesis in the testes was significantly inhibited when mice were fed large amounts (200 mg/kg/day) of 2,4-D. 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, such as delayed bone development and wavy ribs. This suggests that 2,4-D exposure is unlikely to be teratogenic in humans at expected exposure levels.

Mutagenic effects: 2,4-D has been very extensively tested and was found to be nonmutagenic in most systems. 2,4-D did not damage DNA in human lung cells. However, in one study, 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). Another study in rodents shows a low incidence of brain tumours at moderate exposure levels (45 mg/kg/day) over a lifetime. However, a number of questions have been raised about the validity of this evidence and thus about the carcinogenic potential of 2,4-D. 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. The compound 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. Between 6 and 8 hours after doses of 1 mg/kg, peak concentrations of 2,4-D were found in the blood, liver, kidney, lungs and spleen of rats. There were lower levels in muscle and brain. After 24 hours, there were no detectable tissue residues. Only traces of the compound have been found in the milk of lactating animals for 6 days following exposure. 2,4-D passes through the placenta in pigs and rats. In rats, about 20% was detected in the uterus, placenta, foetus and amniotic fluid. Chickens given moderate amounts of 2,4-D in drinking water from birth to maturity had very low levels of the compound in eggs.

Risk Phrases: R20/21/22. Harmful by inhalation, in contact with skin and if swallowed.
Safety Phases: S20, S24, S38. When using do not eat or drink. Avoid contact with skin. In case of insufficient ventilation, wear suitable respiratory equipment.

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Keep out of reach of children. Wear long sleeved overalls and gloves while handling. After handling and before eating, drinking or smoking wash hands, arms and face thoroughly with soap and water. Store in the closed, original container in a dry, well-ventilated area, as cool as possible, out of direct sunlight. Store in locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Avoid contact with the eyes, skin & clothing or inhalation of product.

Packaging and Labelling: To be used strictly in accordance with label instructions.

Spills and Disposal: Dealing with spills and disposals may result in the potential for increased personal exposure. During such operations it is recommended that the following protective clothing is worn:

- * Cotton overalls buttoned to the neck and wrist
- * Elbow-length PVC gloves
- * Face shield or goggles
- * PVC or rubber apron

Avoid contact with eyes, skin and clothing or inhalation of product. CONTAIN SPILL and absorb with earth, sand, sawdust, clay, sweeping material or absorbent material and store in sealed drums for safe disposal in an approved landfill, or bury under at least 500mm of soil in a non-crop, non-pasture area away from water sources or homes.

WASTE DISPOSAL METHOD: Triple (or preferably) pressure rinse containers before disposal. Break, crush or puncture and bury empty containers in local authority landfill. If not available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers or product should not be burnt.

Reactivity Data:

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CONDITIONS CONTRIBUTING TO INSTABILITY : Extreme heat and fire.

INCOMPATIBILITY : Compatible with most other chemical compounds.

HAZARDOUS DECOMPOSITION PRODUCTS : Toxic compounds of chlorine may be given off when heated to decomposition.

Fire/Explosion Hazard:

Extinguish fire using:

* Fog

* Dry agent

Full protective gear, including self-contained breathing apparatus (SAA 1716), must be worn.

Other Safe Handling: Neutralising Chemicals: Not needed.

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IN CASE OF EMERGENCY: DIAL 000

IF INEFFECTIVE: PHONE POISONS INFORMATION CENTRE

SPECIALIST COMPANY ADVICE:-

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Milson Point

NSW 2061

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