

GENEREX (AUST) PTY LTD

MATERIAL SAFETY DATA SHEET

I IDENTIFICATION

Product Name: Generex Hexazinone Herbicide
Chemical Name: Ethanol Solution (Shipping Name)
UN No: 1170
Hazchem Code: 3 [Y] E
Dangerous Goods Class: DG 3, flammable liquids.
Sub Risk Class: None allocated.
Packaging Group: III
Poison Schedule: S5
Uses: A herbicide for the control of certain broadleaf weeds, perennial and annual grasses, woody weeds in Pinus radiata plantations, pasture situations and commercial and industrial areas and rights of way.

Physical Appearance & Properties:

Appearance & Odour: Pale yellow liquid.
Volatile materials: Approx 70%
Flashpoint Approx 25°C
Specific gravity: 0.98 approx
Solubility in water: Completely soluble.
Corrosiveness: Not corrosive.
Vapour Pressure: Approx 33mm Hg at 25°C

Ingredients:

Component	CAS No	%
Hexazinone	51235-04-2	25%
Inert Ingredients (40-50% includes Ethanol)		75%
Ethanol	64-17-5	40-50%

II HEALTH HAZARD DATA

Hazardous according to the criteria of NOHSC Australia. Risk Phrases are: R10 Flammable, R36/38 irritating to eyes and skin.

Health Effects:

No specific data is available for the product for chronic exposure symptoms. The ingredients are not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995), nor in NOHSC's "List of Designated Hazardous Substances" (April 1999).

For Hexazinone:

Oral (rat): In a two year feeding study with the 90% powder, the no-observable effect level (NOEL) was 200ppm; nutritional and body weight effects were seen in females at 1000ppm and in both sexes at 2500ppm. Biochemical effects were noted in both sexes at 2500ppm.

Oral (mouse): In a two year feeding study, the NOEL was 200ppm. Decreased body weight gain was observed in both sexes at 2500ppm and 10000ppm. This effect was severe at 10000ppm, the highest dose tested. Non-neoplastic liver effects were noted in males at 2500ppm and in both sexes at 10000ppm. Based on recent pathology review, hyperplastic liver nodules diagnosed at 10000ppm when this study was initially conducted have been reclassified as liver adenomas. This effect was only significant among female mice in this dose group. This change reflects the current scientific consensus regarding the classification of this benign lesion in the mouse liver.

Oral (dog): In a one year feeding study, the NOEL was 200ppm. Reduced food consumption and body weight gains were significant at the high dose, 6000ppm. These nutritional effects were associated with mild but reversible changes in haematological parameters at the high dose. Increased liver weights and other non-neoplastic liver effects as indicated by histopathology and changes in clinical chemical parameters were observed at 1500 and/or 6000ppm.

Reproduction-(rat): In a three generation, three litter study with 90% powder, no adverse reproduction or lactation effects were seen at any level; slightly depressed average weanling weights were noted in the second and third litters at the high dose 2500ppm. A second rat reproduction study (two generation, three litter study) was conducted at dietary doses ranging from 200 to 5000ppm. There were no adverse effects on fertility. The NOEL was 200ppm. Decreased food consumption, parental body weight gain and decreased offspring weights were observed at higher doses.

Teratoaenicity: - Not teratogenic or embryo-foetal toxic to rats by dietary administration at levels as high as 5000ppm, the highest dose tested. Administration to rats by oral intubation resulted in a NOEL for maternal and foetal effects of 100mg/kg body wt/day. When hexazinone was administered to rabbits via oral intubation, there were no teratogenic or embryo-foetal toxic effects at the highest dose tested, 125 mg/kg/day. The maternal and foetal NOELs are considered to be 125 mg/kg.

Mutagenicity: - Not mutagenic in Ames bacterial assay, Chinese hamster ovary cell point mutation assay, or rat liver DNA repair assay; positive in the *in vitro* Chinese hamster ovary cell cytogenetic assay but negative in the *in vivo* rat bone marrow cytogenetic assay

For Ethanol :

Very low order of toxicity by inhalation or ingestion.

Acute Effects:

Swallowed: Single dose oral toxicity is considered to be low. No hazards are anticipated from swallowing small amounts incidental to normal handling operations.

Eye: This product is severely irritating to the eyes. It will cause intense discomfort such as severe pain, copious watering and redness of the eyes. Effects will last long after exposure has ceased, and in severe exposure, permanent effects such as corneal damage or blindness can occur.

Skin: Exposure to this product is not likely to cause significant irritation, nor is it likely to be absorbed through skin in harmful amounts.

Inhalation: No inhalation hazards incidental to normal handling operations are anticipated from this product when used at room temperatures.

For Hexazinone:

LD₅₀ Oral (Rat) = 1690mg/kg

LD₅₀ Oral (Guinea Pig) = 860mg/kg

LD₅₀ Dermal (Rabbit) >5278mg/kg

LC₅₀ Inhalation (Rat) >7.48mg/U4hr

First Aid:

Eyebaths or eyewash stations should be provided where this product is being used.

If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 13 1126 from anywhere in Australia. If possible have this MSDS or product label with you.

Swallowed: If swallowed, do NOT induce vomiting. Wash mouth with water and give a glass of water to drink. Seek medical attention.

Eye: If this product comes into contact with eyes, hold open and wash with running water for at least 15 minutes. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. Seek medical attention.

Skin: If product gets on skin, wash skin to remove material. No further measures should normally be required.

Inhalation: No first aid measures normally required. However, if vapours or mists have been inhaled, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

Advice to Doctor: Treat symptomatically. Note the nature of this product.

III PRECAUTIONS FOR USE

Risk Phrases are: R10 flammable, R36/38, irritating to eyes and skin.

Exposure Standards:

A time weighted average (TWA) has been established for Ethanol, present in significant quantities in This product. This value is 1880mg/m³. The corresponding STEL level is "not set". 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 exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. See ingredients section on page 1 of this data sheet. The ADI (Acceptable Daily Intake) for Hexazinone is set at 0.1mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 10mg/kg/day. Values taken from Australian ADI List, January 2001.

Engineering Controls:

In industrial situations, concentration values below the TWA value should be maintained. Values may be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify the process or environment to reduce the problem.

Personal Protection:

Respiratory Protection: It is usually safe to not use a dust mask or respirator protection on account of this product. However, if the product is being used in dusty or confined conditions, use of a mask or respirator may be preferred.

Protective Gloves: Protective gloves are not normally necessary when using this product. However, it is always prudent to wear gloves.

Eye Protection: Protective eyewear must be worn when using this product. Coverage should extend to all facial areas. Eye contact will prove at best painful and will probably cause irreversible damage if contact is other than brief.

Clothing: This product is essentially safe to use without special protective clothing. However, its use is recommended as a good industrial practice.

Safety Boots: Wearing safety boots in industrial situations is advisory.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

IV SAFE HANDLING INFORMATION

Safety Phrases are: S16, S25. Keep away from sources of ignition - No smoking. Avoid contact with eyes.

Storage & Transport:

This product is classed as UN1170, Dangerous Goods Class 3 Flammable liquids. Proper Shipping name is ETHANOL SOLUTION. Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

This product is a S5 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances listed under "Materials to avoid" below.

Spills & Disposals:

In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective chemically resistant clothing including face mask, face shield, gauntlets and self contained breathing apparatus. See above under Personal Protection regarding Australian Standards relating to personal protective equipment. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. Avoid using sawdust or other combustible material.

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. Dispose of only in accord with all regulations. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Fire & Explosion Hazard:

This product is classified as a C1 combustible product. There is a slight risk of an explosion from this product if it is involved in a fire.

Flashpoint: Approx 25°C

Flammability limits: Not available.

Extinguishing Media: carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires.

Special Fire Fighting procedures: If a significant quantity of this product is involved in a fire, call the fire brigade. When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat, goggles and respirator. All skin areas should be covered. Ensure that no spillage enters drains or water courses.

Unusual Fire & Explosion Hazards: Fire decomposition products from this product may form toxic mixtures in confined spaces. Likely to decompose only after heating to dryness followed by further strong heating. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Stability: This product is unlikely to spontaneously decompose.

Polymerisation: This product is unlikely to spontaneously polymerise.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Water.

Materials to avoid: strong oxidising agents.

Note: This product is classed as a Dangerous Good. We suggest you consult your state's Dangerous Goods laws in order to clarify your obligations regarding the storage of this product.

V OTHER INFORMATION

IN CASE OF EMERGENCY:

DIAL 000

IF INEFFECTIVE:

PHONE POISONS INFORMATION CENTRE

SPECIALIST COMPANY ADVICE:-

Generex (Aust) Pty Ltd
PO Box 165
Milson Point
NSW 2061

Phone 02 9955 7799

Fax: 02 9955 6599