Label Size 510 x 340mm

DANGEROUS POISON

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

STRIKE 35

SOIL FUMIGANT

ACTIVE CONSTITUENTS:

630 g/kg (844 g/L) 1,3-DICHLOROPROPENE

345 g/kg (465 g/L) CHLOROPICRIN

For the control of a wide range of soilborne diseases, plant parasitic nematodes, symphylans, wireworms and suppression of weeds as specified in the directions for use table

Supply of this product may be restricted by SUSMP Appendix J to persons authorised under relevant State legislation.

NET CONTENTS:

_____kg

APVMA Approval No. 64245/144483

TriCal AUSTRALIA

TRICAL AUSTRALIA PTY LTD
ACN 600 066 966
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Edinburgh, SA 5111, Australia
Phone (08) 8347 3838

HEALTHY FIELDS. HEALTHY YIELDS.

DIRECTIONS FOR USE:

RESTRAINTS

DO NOT dilute with water.
DO NOT apply through any type of irrigation system.
DO NOT use when soil temperature at the depth of application is below 10°C or above 27°C.
DO NOT treat soil when very wet or very dry at depth of fumigation.
DO NOT use transplants, tools, or move crop residues that could carry soilborne pests from infested land onto treated areas.

Broadacre Application Rates for the control of a wide range of soilborne diseases, plant parasitic nematodes, symphylans, wireworms and suppression of weeds.

Crop	Pest	Soil Type	Broadacre Rates[1] kg/ha (L/ha)	Critical Comments
Vegetables, Field crops and Nursery crops	**Soilborne diseases** including *Fusarium* and *Verticillium* wilts, *Rhizoctonia, Pythium*; **Plant parasitic Nematodes; Symphylans** (garden centipedes); **Wireworms; For suppression of weeds,** see Footnote 3.	Light soils (e.g., coarse-textured sands, sandy loams and loams)	270-470 (200-350)[2, 4]	**Preplant treatment only:** At time of application, soil should be in good seed bed condition, free of clods and undecomposed plant material and with adequate soil moisture. **Application timing, soil conditions and soil moisture, soil preparation and placement of fumigant, application methods, equipment and sealing the soil after application: See APPLICATION.** **Exposure period:** Leave soil undisturbed for at least 7 days after treatment. **Aeration period before planting:** Use a minimum of 14 days, although longer periods must be used under certain conditions (see also **Soil Fumigation Interval** under **APPLICATION).**
		Heavy soils (e.g., fine-textured clay loams and clays or soils with very high organic matter such as peats)	470-800 (350-600)[3, 4]	
Fruit and Nut crops including Strawberries		All soil types	470-940 (350-700)[3, 4]	

1. Rates given may be concentrated in the row, but in no case should the amount applied per hectare exceed the maximum broadacre application rates (kg/ha or L/ha) given in the above table.
2. For cyst-forming nematodes use at least 335 kg/ha (250 L/ha).
3. For control of apple replant diseases and for suppression of weeds, higher rates (>670 kg/ha or >500 L/ha) are recommended.
4. For high disease and weed pressure use higher rates. Some weed species e.g., nutgrass, may not be suppressed at these rates.

- **NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**
- **THIS PRODUCT IS TOO HAZARDOUS FOR USE IN THE HOME GARDEN.**
- **IN TASMANIA, THIS PRODUCT IS NOT TO BE SOLD OR USED WITHOUT A LICENCE FROM THE REGISTRAR OF PESTICIDES.**
- **IN SOUTH AUSTRALIA, THIS PRODUCT IS NOT TO BE SOLD OR USED WITHOUT A LICENCE FROM THE HEALTH COMMISSION.**

Calibration

Calibration must be done in a manner that does not release product above the soil. Recommended methods are use of a flow meter or determining flow rate by dispensing an alternative fluid such as water or diesel fuel into collection cups. Flow meter capacity previously calibrated for water or methyl bromide may be converted to Strike 35 capacity using the following equations:

Flow capacity for water x 0.85 = flow capacity for Strike 35
Flow capacity for methyl bromide x 1.2 = flow capacity for Strike 35
Flow capacity for diesel fuel is roughly the same as for Strike 35

Flow rates for individual outlets can be calculated using the formula:
mL/100 m of row/outlet = 0.1 x broadacre rate in L/ha x outlet spacing in cm. For example, the application rate is 250 L/ha and desired row spacing is 45 cm, the flow rate per outlet is: 0.1 x 250 x 45 = 112.5 mL/10m/outlet. If dispensing water to determine flow rate, multiply the amount dispensed by 0.85 to determine the amount of Strike 35.

GENERAL INSTRUCTIONS

Strike 35 is a multi-purpose liquid fumigant for preplant treatment of cropland soil that can be used as part of a management program involving rotation, resistance varieties, and other cultural practices designed to alleviate soilborne diseases, plant parasitic nematodes, wireworms and symphylans. Strike 35 will also suppress weeds.

General

- Before fumigation, soil sampling for the type and number of pests present is recommended. In fields where pre-treatment soil samples indicate the presence of high population levels of soilborne pathogens, a successful fumigation cannot be expected to eradicate entire populations. Therefore, post-treatment sampling is recommended to determine the need for additional pest management practices.
- For best results, it may be necessary to treat soils carrying annual crops every year.
- Fumigation may temporarily raise the level of ammonium nitrogen and soluble salts in the soil. This is most likely to occur when heavy rates of fertiliser are applied to soils before fumigation, especially if the soils are either cold, wet, acid or high in organic matter. To avoid ammonia injury or nitrate starvation (or both) to crops grown on high organic soils, DO NOT use fertilisers containing ammonium salts and use only fertilisers containing nitrates, until after the crop is well established and the soil temperature is above 18°C. In mineral soils (low organic matter soils), do not apply more than 2/3 of the nitrogen requirements from fertilizers containing ammonium salts until the crop is well established and the soil temperature is above 18°C.
- **Certain nursery crops such as citrus seedlings and vegetable crops such as cauliflower have shown evidence of phosphorus deficiency following fumigation. To avoid this possible effect, additional phosphate fertiliser (foliar applied) is recommended where experience indicates a deficiency may occur.**

APPLICATION

Application Timing

Strike 35 can be applied at any time of the year when soil conditions permit. Conditions that allow rapid diffusion of the fumigant as a gas through the soil normally give best results. Strike 35 does not provide residual control of soil pests and must be applied before planting each crop. The following soil temperature and moisture conditions should exist at time of application. Failure to meet these conditions may result in unsatisfactory product performance.

Soil Conditions

Optimal temperatures for application are between 15°C and 25°C at the intended depth of fumigation.

Soil Moisture

It is critical to manage soil moisture properly before fumigation. Plan fumigation for seasons, crop rotations, or irrigation schedules which leave moisture in the soil. For fumigation depths of 40 to 45 cm (as for apple replants), the soil should be moist within a 40 cm radius upwards from the point of injection as determined by the feel method (see below). For all other applications, the soil must be moist from 5 cm below the soil surface to at least 30 cm deep as determined by the feel method (see below). The amount of moisture needed in this zone will vary according to soil type. The surface soil generally dries very rapidly and should not be considered in this determination. If there is insufficient moisture at the 5 cm to 15 cm depth, the soil moisture must be adjusted. If irrigation is not available and there is adequate soil moisture below 15 cm, it may be brought to the surface by disking or ploughing before or during the injection.

In general, no irrigation should immediately precede subsoiling or fumigation. However, when irrigation is available and surface soil moisture conditions are not likely to provide an adequate seal against fumigant loss, a very light sprinkler irrigation to wet the top 2.5 to 5 cm of soil may be used to bring soil moisture content to the desired level.

The following descriptions will aid in determining acceptable soil moisture conditions by the "feel method". For coarse soils (sand and loamy sand), there must be enough moisture to allow formation of a weak ball when compressed in the hand. Due to soil texture, this ball is easily broken with little disturbance. In loamy, or medium textured soils (coarse sandy loam, sandy loam and fine sandy loam), a soil sample with the proper moisture content can be formed into a ball which holds together with moderate disturbance, but does not stick between the thumb and forefinger. Fine textured soils (clay loam, silty clay loam, sandy clay, silty clay, sandy clay loam and clay), should be pliable and not crumbly, but should not form a ribbon when compressed between the thumb and forefinger.

Soil Preparation

The soil should be worked to the depth where control is desired. The soil should be free of clods. Large clods can prevent effective soil sealing and reduce effectiveness of Strike 35. Plant residues should be thoroughly incorporated into the soil prior to treatment to avoid interfering with application. Undecomposed plant material may harbour pests that will not be controlled by fumigation. Little or no crop residue should be present on the soil surface. Crop residue that is present should lie flat to permit the soil to be sealed effectively. Compacted soil layers within the desired treatment zone should be fractured before or during application of the fumigant. Deviation from the above conditions may result in unsatisfactory results.

Placement of Fumigant

Strike 35 may be applied as either a broadacre (overall) or row treatment. It should be placed at least 20 cm below the final soil surface. When soil conditions allow, placement to 30 cm below the final soil surface is recommended. Deeper placement is recommended when fumigating soil to be planted to deep-rooted plants, such as perennial fruit and nut crops, or to control deeply distributed pests.

Application Methods and Equipment

Use equipment specifically designed for application of fumigants to soil.

Minimising end row spillage: Product spillage at the end of rows should be minimised. An effective flow shutoff device must be used to prevent discharge of fluid at the end of rows. After shutting off flow, run tynes underground for 30 cm to limit spillage that may occur when the tyne is raised from the ground.

Broadacre Application: Choose application equipment that allows the deepest application and best soil seal under existing conditions.

The fumigant outlet spacing varies with the type of application equipment used:
With tyne equipment a fumigant tyne spacing of 30 cm is recommended. The outlet spacing for this equipment may be up to 1½ times the application depth but generally should be equal to the application depth and should not exceed the soil-shattering capability of the tynes.

Row Application (for row spacing greater than 60 cm): Use tyne equipment to treat a band of soil where the crop is to be planted, i.e., the plant row. When multiple tynes per plant row are used, space the tynes (fumigant outlets) 20 to 30 cm. Regardless of the number or spacing of tynes used, the fumigant must be placed at least 30 cm from the nearest soil/air interface (e.g., furrow). To prevent seed germination problems caused by improper seed-to-soil contact or improper seeding depth, do not place the seed directly over the furrow left by the applicator tyne(s).

Sealing the Soil after Application

Immediately after tyne application of Strike 35, the soil must be "surface-sealed" to prevent fumigant loss and ensure that an effective concentration of fumigant is maintained within the soil for a period of several days.

For broadacre treatment (flat fumigation), sealing can be accomplished with equipment that will uniformly mix the soil to a depth of 8 to 10 cm, to effectively eliminate tyne or plough traces which can allow direct escape of the fumigant. A tandem disc or similar equipment may be used for this purpose. To improve sealing, the soil surface should be compacted with a ring roller or roller in combination with tillage equipment to further retard the rate of fumigant loss. Compaction of the soil surface alone does not effectively disrupt tyne or plough traces.

For row treatment, forming the beds at the time of application should be accomplished in a manner that places the fumigant at least 30 cm from the nearest soil/air interface (e.g., furrow). The closest soil/air interface could be the furrow for multiple tyne applications or the top of the beds for single tyne applications. Row treatments into pre-formed beds must be sealed by disrupting the tyne trace using press sealers, ring rollers, or by reforming the beds and following with such equipment.

To maximise sealing, apply un-perforated plastic film such as low-density polyethylene or virtually impermeable film (VIF) over the entire area or in strips. Use of a film to seal the soil surface does not eliminate the need to eliminate tyne traces prior to application of the plastic film.

Proper soil conditions at the time of application (see **Soil Preparation**) are important to ensure proper placement of fumigant (see **Placement of Fumigant**) and obtaining adequate sealing. Prior tillage should be adequate to eliminate clods and thoroughly mix crop residues into the soil.

Soil Fumigation Interval

1. **Exposure Period:** Leave the soil undisturbed for at least 7 days after treatment. *A longer undisturbed interval is required if the soil becomes either cold, wet or "surface-sealed" under wet conditions and for deep-rooted tree, shrub and vine planting sites.*
2. **Aeration Period before Planting:** After the exposure period, allow the fumigant to dissipate completely before planting the crop. Do not plant crops if the odour of Strike 35 is present within the fumigation zone. Under good dissipation conditions as occurs in warm, moist soil situations, allow 1 week for every 100 kg/ha used before planting the crop unless an approved plant germination test verifies that the product has dissipated sufficiently to allow planting. A longer aeration period will be required if the soil is cold, wet or was "surface sealed" under wet conditions and for deep-rooted tree, shrub and vine planting sites. Saturated, cool to cold soil can remain phytotoxic for a long period. Under these conditions, an approved plant germination test must be conducted to ensure crop safety at planting.

Recontamination Prevention

Strike 35 will control pests that are present in the soil treatment zone at the time of fumigation. It will not control pests that are introduced into soil after fumigation. To avoid reinfestation of treated soil, DO NOT use irrigation water, transplants, seed pieces, or equipment that could carry soilborne pests from infested land. Avoid contamination from moving infested soil onto treated beds through cultivation, movement of soil from below the treated zone, dumping contaminated soil in treated fields and soil contamination from equipment or crop remains. Clean equipment carefully and ensure shoes and/or clothing are cleaned of soil before entering treated fields.

CLEANING EQUIPMENT

- Clean equipment of all soil or plant debris before using but DO NOT allow water to enter fumigant lines or containers.
- Since this product is corrosive under certain conditions, flush all application equipment with diesel oil or kerosene immediately after use. Dispose of flushing solution by incorporation into the treated field or by other means in accordance with appropriate State legislation.
- Fill pumps and meters with new motor oil or a 50% motor oil/diesel oil mixture before storing.

PRECAUTIONS

Signs or placards as follows must be prominently shown at all approaches to the fumigation site:

"DANGER - KEEP OUT - POISONOUS GAS - FUMIGATION IN PROGRESS - KEEP AWAY"

These signs should also include contractor's name and address plus "Poisons Information Centre Tel. 13 11 26".

Workers conducting any activity within 2 metres of unshielded, pressurised hoses containing Strike 35 must wear the protective equipment as defined in the product's Safety Directions. Other workers in the general application area should wear normal work clothing and non-sparking rubber boots or overboots (not steel-capped).

Re-Entry Period

Do not allow entry into treated areas for 5 days after treatment. When prior entry is necessary, or when odour persists beyond 5 days after treatment and entry is required, wear cotton overalls buttoned to the neck and wrist, chemical-resistant gloves, chemical-resistant footwear (rubber boots or overboots, not steel-capped) and full-facepiece respirator with organic vapour/gas cartridge or canister.

Ground Water Advisory Statement

The 1,3-dichloropropene in Strike 35 is known to move through soil and under certain conditions has the potential to reach ground water. Application in areas where soils are permeable and ground water is near the surface could result in ground water contamination for a period of time after treatment. Do not apply within 30 metres of any well used for drinkable water.

Other Precautions

- DO NOT use in enclosed greenhouses or other enclosed areas. Strike 35 can be used in large greenhouses with both ends removed to allow ventilation.
- DO NOT drop, bump or drag cylinders.
- DO NOT unload cylinders by rope-sling, hooks or tongs.
- Keep cylinders upright in tamper-proof airy stores, away from dwellings, food and feed stuffs.
- Put out all pilot lights and glowing heating units.
- DO NOT use containers, pumps or other transfer equipment made of aluminium, magnesium or their alloys, as under certain conditions this product may be severely corrosive to such metals. Australian Standards approved Teflon-braided hoses are preferred as transfer lines for this product.
- DO NOT use polyethylene tubing as transfer hosing.
- DO NOT use compressed air as the pressure source for application or cleaning. Use compressed nitrogen.
- DO NOT contaminate food.
- DO NOT allow this chemical to contaminate water used for irrigation, drinking or other domestic purposes.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

- DO NOT apply within 1.5 m of desirable plants or living trees.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

- DO NOT contaminate streams, rivers or waterways with the chemical or used containers.
- DO NOT fumigate more than once per crop.
- DO NOT apply Strike 35 within 5 metres of aquatic environments such as rivers, streams, marshes and other water bodies.

STORAGE AND DISPOSAL

- Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.
- Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.
- Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.
- Do not use empty containers to store any other material.

SAFETY DIRECTIONS

Poisonous if absorbed by skin contact or inhaled or swallowed. Will damage eyes, nose, throat and skin. Repeat exposure may cause allergic disorders. Avoid contact with eyes and skin. Do not inhale vapour. The fumes first cause smarting, then watering of the eyes. This should be taken as a warning sign. If product in eyes, wash it out immediately with water. If product on skin, immediately wash area with soap and water. If clothing becomes contaminated with product, remove clothing immediately. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. When using the product wear cotton overalls buttoned to the neck and wrist and a washable hat, chemical-resistant apron, elbow length neoprene gloves, chemical-resistant footwear (non-sparking rubber boots–not steel-capped) and full-facepiece respirator with organic vapour/gas cartridge. After each day's use, wash gloves, contaminated clothing and respirator (if rubber wash with detergent and warm water). Do not re-use footwear until thoroughly aired.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126, New Zealand 0800 764 766. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. Remove from contaminated area. Apply artificial respiration if not breathing. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

FIRST AID WARNING

Vapour is harmful to health on prolonged exposure.

SAFETY DATA SHEET

Additional information is listed in the Safety Data Sheet, which is available from the supplier.

Flammable liquid and vapour. Toxic if swallowed. Fatal in contact with skin. Fatal if inhaled. May cause an allergic skin reaction. Causes serious eye damage. Causes severe skin burns and eye damage. May cause respiratory irritation. Suspected of causing cancer. Causes damage to organs (respiratory system). Causes damage to organs (lung, liver, kidney, respiratory system) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

UN 3489

TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (CHLOROPICRIN;1,3-DICHLOROPROPENE)

IN A TRANSPORT EMERGENCY
DIAL 000
POLICE OR FIRE BRIGADE

NOTICE

Seller warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label when used in accordance with directions under normal conditions of use. No warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of the product contrary to label instructions or under off-label permits not endorsed by Trical Australia Pty Ltd, or under abnormal conditions.

Batch No.: **D.O.M.:**