

# 1,4SIGN<sup>®</sup>

## Potato Dormancy Enhancer and Sprout Inhibitor

*Contains 960 g/ Litre 1,4-dimethylnaphthalene in the form  
of a technical concentrate (DMN).*



**AGRISOURCE**  
PRODUCTS FOR AGRICULTURE

**WARNING  
ECOTOXIC**

Keep out of the reach  
of children

**Net Contents**

**10 Litres**

**FREE RECYCLING**



**AGRECOVERY**

[www.agrecovery.co.nz](http://www.agrecovery.co.nz)

# READ LABEL COMPLETELY BEFORE USE

## HSNO CLASSIFICATIONS: 6.1E, 6.3A, 6.4A, 9.1A

Any person purchasing, handling or disposing of this product must be suitably qualified



### WARNING

May be harmful if swallowed, inhaled or absorbed through the skin. May cause skin and eye irritation.

### ECOTOXIC

Very toxic to aquatic organisms.

## HANDLING PRECAUTIONS

Do not eat, drink or smoke while using. Wash hands and face before meals and after work. Wash protective clothing after work. Store in original container away from feed, seeds and foodstuffs. Flush spray equipment thoroughly with clean water after use.

**Personal Protection:** When mixing or applying, wear protective clothing, gloves and goggles.

**Storage:** Store in original container tightly closed and in a locked, dry, cool, well ventilated area, away from feed, seeds and foodstuffs. This product is classified under HSNO as 9.1A, and storage of certain quantities may require bunding and signage. See the SDS for further information.

**1,4SIGHT® will freeze at temperatures below 5°C. Store in a warm (15 - 20°C) store.**

**Shelf Life:** When stored appropriately this product should show no significant degradation for 2 years. Contact your supplier for further information about the use of any product that is older than this.

**Spillage:** Move non-essential people from the area. Wear appropriate protective clothing and prevent material from entering waterways. Absorb spills with inert material and place in waste containers. Sweep up solids without creating dust. Wash area with water and absorb with further inert material. Dispose of waste safely (such as to a suitable landfill).

**Product Disposal:** Ensure unwanted product is not used by another operator strictly in accordance with label directions.

**Container Disposal:** Ensure container is completely empty. Triple rinse and submit clean empty container for recycling through Agrecovery. If this is not possible bury in landfill.

**Safety Data Sheet:** Additional information is provided in the SDS available from your supplier.

## FIRST AID

If swallowed DO NOT induce vomiting. For advice, contact the National Poisons Centre 0800 Poison (0800764 766) or a doctor immediately. If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If concentrate is splashed in the eyes, flush with running water immediately. DO NOT SCRUB THE SKIN.

## EMERGENCY RESPONSE

In a transport emergency call 111, Police or Fire Brigade

## GENERAL INFORMATION

The active ingredient (1,4-dimethylnaphthalene – (1,4-DMN)) occurs naturally in potatoes. While it remains present at sufficient levels, sprouting is prevented. This dormancy enhancement mode of action is different to treatment with CIPC which burns the sprouts after dormancy has broken. Over time, potatoes that have been harvested or ground stored, lose 1,4-DMN and sprout production starts. Potatoes treated with **1,4SIGHT®** have less weight loss and remain more turgid than untreated. If sprouting has already started at the time of treatment, the highest rate recommended for **1,4SIGHT®** may only slow the rate of sprouting but may not stop it, depending on variety.

By applying **1,4SIGHT®** to stored potatoes and maintaining the levels of 1,4-DMN, the natural process for controlling sprouting is maintained.

## USE CONDITIONS

When applied to storage areas **1,4SIGHT®** is absorbed into the potatoes. The level of 1,4-DMN in the potatoes should not be allowed to drop below 1 ppm. This can be checked by periodic (2-4 weekly) residue analysis of the tubers. In the absence of residue analysis regular inspections should be made and retreatment made at the first signs of sprouting ('peeps'). Target inspections to the areas of the store where it is most difficult to get good vapour treatment penetration. Regular inspections should also be made for rotting potatoes as **1,4SIGHT®** can mask the odour of rotting potatoes. Open only the minimum space required for ingress when making inspections to minimize loss of vapours from the store.

For optimum sprout control, potatoes should be dug immediately on maturity, moved into storage and treated. Suberization will not be impaired.

Potatoes that have been ground stored before harvest will contain low natural levels of 1,4-DMN and may require more frequent treatment of **1,4SIGHT®** to establish and maintain base levels.

Best results are in Potato stores where there is minimal air exchange and no fresh air into the store for 24-48 hours after treatment. **1,4SIGHT®** may leak from storage areas that are not well sealed. Such stores will require more frequent re-treatment to maintain levels of **1,4SIGHT®**. Areas of potential leakage should be minimised for economic control of sprouting. **1,4SIGHT®** vapours can pass through wood and most plastics. Do not use these materials to repair leaks.

## 24 HOUR EMERGENCY RESPONSE 0800 CHEMCALL (0800 243 622)

**1,4SIGHT®** should be applied as a vapour treatment in a cold or hot fog to the air space within the store. Use thermal fogging under cooler temperatures. Application as a spray 'mist' can result in 'spotting' of the potatoes. To assist with penetration into the stack, air vents under the stack are recommended. Where none exist, effective air ducts can be made, by using normal pallets stacked two high and butted open end, to open end. Under stack ducting should be not more than 3 metres apart under the stack.

Best results will be achieved if the storage temperature of the potatoes is maintained at or below 10°C and all other conditions for good long term storage of potatoes are met. There are major differences between variety dormancy properties and sprouting potential. It is important to inspect for the first sign of sprouting at regular intervals. Re-treat if any indications that dormancy has broken.

Do not store Seed Potatoes for immediate planting (5-6 weeks) in any area that shares air space with **1,4SIGHT®** treated potatoes.

For treatment of 'Shipping containers' refer to the product 1,4SIGHT®.

## RATE OF APPLICATION

**Apply 10 -20 ml / Tonne of Potatoes.** Use the high rate for the initial treatment. The low rate should be used for subsequent re-treatments as required to maintain dormancy unless the store is only partially filled, in which case the high rate should be continued. Up to 30 days Sprout Suppression can be expected from each treatment if storage conditions are favourable. **1,4SIGHT®** can be used repeatedly until potatoes are sold.

## METHODS OF APPLICATION

The following application equipment types are suitable for application:

- Wet fog equipment and Misting equipment feeding into forced aeration systems.
- These should only be used when in-store temperatures are above 10°C. In colder conditions droplets rather than a vapour is formed. Droplets settle on the potato skins and can mark the tubers. Do not allow any liquid **1,4SIGHT®** to contact the surface of the potato. Do not allow any liquid **1,4SIGHT®** to contact plastic in the store. Operate the ventilation at as low a volume as reasonable.
- Thermal Fogging equipment capable of generating a dry fog, is the preferred method of application. Do not allow any liquid to contact the surface of the potatoes. Do not allow any liquid to contact plastic in the store. Operate the ventilation at as low a volume as reasonable.

After application the normal store ventilation system should be set to recirculate only and should remain on this setting for 24 – 48 hours to allow the vapours to fill the air space and be absorbed by the tubers. Maintain a gentle air circulation within the store during this 24 - 48 hour period to aid movement of the vapours through-out the whole stack. After 48 hours resume normal ventilation procedures

- Monitor the potatoes regularly at least once a week. If not using analysis to determine periodic DMN levels, monitor potatoes more frequently, particularly close to doors etc where leakage could be expected, and, at the first sign of any eye movement, re-treat the whole store with 10 ml/tonne **1,4SIGHT®** in the same manner as described above with reference to air movement and ventilation. Resume monitoring after re-treatment.

## RECOMMENDATIONS

**Ground stored potatoes:** Where potatoes have been stored in the ground for 4 or more weeks after maturity (or top desiccation) treatment should be made as soon as is practical after placement in the store. Suberization will not be impaired.

**Freshly harvested potatoes:** For potatoes that have been harvested or desiccated and then harvested at maturity, treatment may be made as soon as the store is filled or harvest is completed within 3 or 4 weeks. Suberization will not be impaired so double handling and grading is not required before treatment. Treatment should be carried out as soon as practical after placement in long term storage.

## TREATMENT OF PACKAGING

It is possible to treat cardboard and multiwall paper packaging with **1,4SIGHT®** just before packing to maintain dormancy and reduce sprouting of the potatoes within the packaging. Apply a measured dose that corresponds to 0.02 ml/kg of packed Potatoes to an area that is not in direct contact with Potatoes to avoid skin burning.

## CONDITIONS OF SUPPLY

All goods supplied by us are produced under rigid quality control procedures which assure the purchaser that at the time of sale they are physically suitable for use in the manner stated. However, to the extent permitted by law, buyers and/or users of the goods accept that neither the manufacturer, Agri Solutions Ltd as registrant, nor any other distributor have any liability or responsibility whatsoever for any loss, damage or injury whether in contract or tort, whether direct, indirect or consequential howsoever arising in connection with the supply of these goods.

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See [www.epa.govt.nz](http://www.epa.govt.nz) for approval conditions

BATCH NO:

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