# CAUTION

**KEEP OUT OF REACH OF CHILDREN**
**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**

# Mako®

**Herbicide**

**ACTIVE CONSTITUENT: 750g/kg SULFOMETURON METHYL**

| GROUP | B | HERBICIDE |
|---|---|---|

For the control of certain annual and perennial grasses and broadleaf weeds in commercial and industrial areas: around agricultural buildings, rights of way, and for Pre and Post Planting *E. globulus, E. nitens* and *P. radiata* plantations as per directions for use.

IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USING THIS PRODUCT

® Mako is a registered trademark of Nufarm Australia Limited

nufarm.com.au

Nufarm Australia Limited
ACN 004 377 780
103-105 Pipe Road
Laverton North Victoria 3026
Tel: (03) 9282 1000
Fax: (03) 9282 1001

Contents: 250g
Contents: 500g
Contents: 1kg
Contents: 1.5kg
Contents: 2kg

APVMA Approval No: 51666/57613

**STORAGE AND DISPOSAL**
During storage keep from contact with fertilisers, other pesticides and seeds. Store in the closed original container in a well-ventilated area, as cool as possible but out of direct sunlight. Triple or preferably pressure 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

**SAFETY DIRECTIONS**
Will irritate eyes, nose and throat, and skin. Avoid contact with eyes and skin. DO NOT inhale dust and spray mist. If product in eyes, wash it out immediately with water. When opening the container and preparing product for use, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length chemical resistant gloves, goggles and half facepiece respirator. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length chemical resistant gloves. Wash hands after use. After each day's use, wash gloves, goggles, respirator and if rubber wash with detergent and warm water, and contaminated clothing.

**FIRST AID**
If poisoning occurs, contact a Doctor or Poisons Information Centre Phone Australia 13 11 26.

**MATERIAL SAFETY DATA SHEET**
Additional information is listed in the Material Safety Data Sheet (MSDS), which can be obtained from your supplier or from the Nufarm website – www.nufarm.com.au

**In case of emergency: Phone 1800 033 498** Ask for shift supervisor. Toll free 24 hours.

**CONDITIONS OF SALE**
"Any provisions or rights under the Competition and Consumer Act 2010 or relevant state legislation which cannot be excluded by those statutes or by law are not intended to be excluded by these conditions of sale. Subject to the foregoing, all warranties, conditions, rights and remedies, expressed or implied under common law, statute or otherwise, in relation to the sale, supply, use or application of this product, are excluded. Nufarm Australia Limited and/or its affiliates ("Nufarm") shall not accept any liability whatsoever (including consequential loss), or howsoever arising (including negligence) for any damage, injury or death connected with the sale, supply, use or application of this product except for liability which cannot be excluded by statute." BN / DOM / Barcode /

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READ COMPLETE DIRECTIONS FOR USE BEFORE USING THIS PRODUCT.

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**DIRECTIONS FOR USE**

**RESTRAINTS**

DO NOT apply Mako to drainage ditches and channels.
DO NOT apply Mako during periods of intense rainfall, or to soils saturated with water as off-target movement may occur.
DO NOT store tank mixes of Mako with other materials for more than 24 hours as product breakdown may occur.
DO NOT store a suspension of Mako for more than 2 days as it may degrade, particularly in acid solutions.

**FOR ALL STATES**

| SITUATION | WEEDS | RATE | | | CRITICAL COMMENTS |
|---|---|---|---|---|---|
| | | Boom | Hand Gun | Knap sack | |
| Commercial & Industrial areas, around Agricultural buildings, Rights-of-Way including road sides, around guide posts, railways, power lines and telephone lines | **Easy-to-Kill Annual Weeds**<br>**Grasses** - Annual ryegrass, Barnyard grass, Summer grass/Crab grass, Wild oats, Winter grass<br>**Broadleafs** – Blue Billygoat weed, Capeweed, Corkscrew/Erodium, Paterson's curse/Salvation Jane, Subterranean clover, Turnip weed<br>**Easy-to-Kill Perennial Weeds**<br>**Grasses** – Prairie grass<br>**Broadleafs** - Dandelion, Dock, White clover<br>**Hard-to-Kill Annual Weeds**<br>**Grasses** - Rats tail fescue, Squirrel tail fescue<br>**Broadleafs** – Black thistle/Spear thistle | 200 or 400g/ha | 20 or 40g/100L | 3 or 6g/15L | For roadside applications confine treatment to the area between the edge of the bitumen and the roadside shoulder. For weeds advanced beyond the 4 leaf stage or when more rapid knockdown is required, tank mix with Roundup® Attack™ in accordance with its label recommendations. Always add a surfactant - except when tank mixing with Roundup® Attack™. Use the higher rate plus Roundup® Attack™ (in accordance with its label recommendations), for dense weed infestations and where weeds are greater than 15cm in height or diameter. Use the higher rate for longer term residual control. For handgun or knapsack application, apply the spray evenly to the required area. Spray to wet the foliage of the weeds present, but not excessively so as to cause run-off. Over application may reduce knockdown results and significantly increase period of residual control. |
| | **Hard-to-Kill Perennial Weeds**<br>**Grasses** - African lovegrass, Columbus grass, Couch, Elastic grass, Guinea grass, Johnson grass, Kikuyu, Paspalum, Phalaris | 400 or 800g/ha | 40 or 80g/100L | 6 or 12g/15L | For roadside applications confine treatment to the area between the edge of the bitumen and the roadside shoulder. Always tank mix with Roundup® Attack™ in accordance with its label directions – a surfactant is not required. Use the higher rate plus Roundup® Attack™ (in accordance with its label recommendations), for dense weed infestation and where weeds are greater than 15cm in height or diameter. Use the higher rate for longer term residual control. For handgun or knapsack application apply the spray evenly to the required area. Spray to wet the foliage of the weeds present, but not excessively so as to cause run-off. Over application may reduce knockdown results and significantly increase the period of residual control. |

**FORESTRY - FOR SOUTHERN NSW, VIC, ACT, TAS, SA, AND WA ONLY**

**Pre-Plant Application**

| SITUATION | WEEDS | RATE | CRITICAL COMMENTS |
|---|---|---|---|
| *E. globulus, E. nitens* and *P. radiata* plantations (Including farm tree plantations of these species) | **Annuals** Fleabane, Clover **Perennials** Dock, Fog grass, Flatweed, Sorrel | 50-70g/ha | DO NOT TRANSPLANT SEEDLINGS WITHIN 6 WEEKS (50g) OR 8 WEEKS (70g) OF APPLICATION. DO NOT APPLY TO ALKALINE SOIL For weeds advanced beyond the 3-4 leaf stage or to increase the knockdown spectrum of weeds controlled, tank mix with Roundup® Attack™ in accordance with its label recommendations. Use the higher rate of Mako Herbicide for longer-term residual control. Apply with Pulse® Penetrant at a rate of 200mL/100L of water except when tank mixing with Roundup® Attack™. May be used in newly coppiced eucalypt plantations after harvest. Apply in pre-plant situations by ground based or aerial application. Wherever possible areas of application should have some type of cover, i.e. weed biomass or residual organic matter (trash), and be mounded along the contour. For further information refer to General instructions sections attached. |

**Post-Plant Application**

| SITUATION | WEEDS | RATE | CRITICAL COMMENTS |
|---|---|---|---|
| *P. radiata* (Including farm tree plantations of this species) | **Annuals** Fleabane Clover **Perennials** Dock Fog grass Flatweed, Sorrel | 50-70g/ha | For trees in the establishment phase only (2 months to 15 months post-transplant) ONLY APPLY this product between the months of May through to the end of September. Apply when trees are dormant only. Applications may result in tip damage. The Tip damage seen is transitory and will not have any long-term impact on tree form or growth rate. Application in spring months when trees may be coming out of dormancy will increase the chance of tip damage occurring. Best results are obtained when applied to bare ground or to weeds no larger than the 3 leaf stage. Use the higher rate for longer-term residual control. Apply in pre-plant situations by ground based or aerial application. Wherever possible areas of application should have some type of cover, i.e. weed biomass or residual organic matter (trash), and be mounded along the contour. For further information refer to General instructions sections attached. |

**Post-Plant Application**

| SITUATION | WEEDS | RATE | CRITICAL COMMENTS |
|---|---|---|---|
| *E. globulus, E. nitens* (Including farm tree plantations of these species) | **Annuals** Fleabane Clover **Perennials** Dock Fog grass Flatweed, Sorrel | 50-70g/ha | Allow 12 months after transplanting before application. Apply Mako Herbicide as a DIRECTED SPRAY ONLY using a SHIELDED SPRAYER between tree rows. DO NOT allow spray or spray drift to contact any part of the Eucalypt seedling as severe injury or tree death may result. Best results are obtained when applied to bare ground or to weeds no larger than the 3 leaf stage. Use the higher rate for longer-term residual control. For further information refer to General instructions sections attached. May be used in newly coppiced eucalypt plantations after harvest. Apply in pre-plant situations by ground based or aerial application. Wherever possible areas of application should have some type of cover, i.e. weed biomass or residual organic matter (trash), and be mounded along the contour. |

## NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.

**WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED**

**GENERAL INSTRUCTIONS**

Mako is a soil residual herbicide with some knockdown action. It controls susceptible weeds through both post-emergence and pre-emergence (residual) action. Mako may be applied pre-emergence or post emergence to the weeds; best results are obtained if application is made before or during the early stages of weed growth. Adequate soil moisture is required for Mako to be activated so it can provide optimum weed control. Under limited rainfall conditions, Mako may not provide satisfactory control of hard-to-kill annuals and perennial weeds. The higher use rates give longer term residual control. The degree of control and duration of effect will vary with the rate of application, soil texture, organic matter content, soil pH, rainfall and other environmental conditions. As soil pH increases the rate of Mako breakdown decreases so that longest term residual control is obtained on alkaline soils. As soil moisture increases the rate of Mako breakdown decreases, so that longest term residual control is obtained when rainfall is low. As soil organic matter content increases the rate of Mako breakdown increases, so that longest term residual control is obtained in low organic matter soils.

**FORESTRY**

• Transplant seedlings should be healthy and showing good vigour at time of transplanting and be a minimum of 20cm in height. DO NOT transplant seedlings into areas treated with Mako Herbicide if they are smaller than 20cm in height or are showing poor levels of vigour due to disease, or environmental factors such as drought, frost, moisture or water logging.
• DO NOT apply to alkaline soils (soil pH >7), or on leached, sandy soils, low in organic matter as unacceptable crop phytotoxicity may occur.
• DO NOT apply product to poorly drained soils, to gravel or rocky soils and exposed subsoils.
• This product is not suitable for use where seed is to be sown directly in to the treated areas.
• DO NOT broadcast apply to uncultivated or non-mounded or bare ground on slopes exceeding 30%

**RESISTANT WEEDS WARNING**

| GROUP | B | HERBICIDE |
|---|---|---|

Mako is a member of the sulfonylurea group of herbicides. Mako has the acetolactate synthase (ALS) inhibitor mode of action. For weed resistance management Mako is a Group B herbicide. Some naturally-occurring weed biotypes resistant to Mako and other ALS inhibitor herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by Mako or other ALS inhibitor herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Nufarm Australia Limited accepts no liability for any losses that may result from the failure of Mako to control resistant weeds. Strategies to minimise the risk of herbicide resistance are available. Consult your farm chemical supplier, consultants, local Department of Agriculture of Primary Industries, or local Nufarm representatives.

**SPRAY PREPARATION**

Mako is a dry flowable formulation to be mixed with water and applied as a spray. Partially fill the spray tank with water. Using the graduated measuring cylinder provided, measure the amount of Mako required for the area to be sprayed. DO NOT shake the Mako down as the measuring cylinder is graduated for Mako in an uncompacted state. Add the correct amount of Mako to the spray tank with agitation system engaged. Top up the correct volume with water. THE MATERIAL MUST BE KEPT IN SUSPENSION AT ALL TIMES BY CONTINUOUS AGITATION. (NB: The measuring cylinder provided is graduated in grams of Mako ONLY. DO NOT use for measuring other materials.) In tank mixes, Mako must be in suspension before adding the companion herbicide or surfactant. Where prepared spray solutions have been allowed to stand, thoroughly reagitate before using.

**USE OF SURFACTANT - For Industrial use**

Add a surfactant either non-ionic at the rate of 0.25%v/v (250mL/100L of Chemwet 1000) or the organosilicone Pulse® Penetrant at the rate of 0.2%v/v (200mL/100L) when Mako is used alone. When Mako is tank mixed with the Roundup® Attack™ and Weedmaster® Duo no surfactant addition is necessary.

**USE OF SURFACTANT - For Forestry use**

Always add the organosilicone Pulse® Penetrant at the rate of 0.2%v/v (200mL/100L) when Mako is used alone preplant. When Mako is tank mixed with Roundup® Attack™, no surfactant addition is necessary.

**SPRAY EQUIPMENT - For Industrial Use**

DO NOT apply by aerial application equipment or mist spray application equipment.

**BOOM SPRAY**

Mako is recommended for application by ground spraying equipment only. Use a boom spray properly calibrated to a constant speed and rate of delivery to ensure thorough coverage and a uniform spray pattern and rate of application over the area to be treated. Adjust boom height to ensure correct spray overlap. Avoid spraying where drift can go onto neighbouring areas as injury may occur. Avoid overlapping and shut off spray booms while starting, turning, slowing or stopping. Apply a minimum of 100L prepared spray/ha and use a Medium to Coarse Spray Quality.

**HANDGUN/KNAPSACK**

Wet the foliage of the weeds present but not excessively so as to cause run-off. Handgun - Use 1000-2000L of spray mix per hectare. Mako residues in the spray tank can damage sensitive plants. Following a Mako application the spray tank should not be used for other than non-crop applications.

**SPRAY EQUIPMENT - For Forestry Use**

**BOOM SPRAY** - Use a boom spray properly calibrated to a constant speed and rate of delivery to ensure thorough coverage and a uniform spray pattern and rate of application over the area to be treated. Adjust boom height to ensure correct spray overlap. Avoid spraying where drift can go onto neighboring areas as injury may occur. Avoid overlapping and shut off spray booms while starting, turning, slowing or stopping as injury to the trees may result. Apply a minimum of 100L prepared spray/ha and use a Coarse to Very Coarse Spray Quality (Based on BCPC Specifications).

**Aerial Application (For Forestry use Only)** - Avoid spraying in still conditions and in winds likely to cause drift onto adjacent sensitive crops or fallow areas likely to be planted to these crops. Turn off spray boom whilst passing over creeks and dams. DO NOT apply when a temperature air inversion is likely to occur. Use of micronair equipment is not recommended due to greater drift potential. Apply in a minimum of 50L/ha water.

**COMPATIBILITY**

Mako is compatible with the Roundup®, Roundup Biactive® Weedmaster® Duo, Roundup® Attack™, Asset®, Associate®, Nufarm Diuron 900 DF, Nufarm Nu-trazine 900DF, Nufarm Simazine 900 DF, Nufarm Grunt® 750 WDG and Nufarm Archer®.

**SPRAYER CLEANUP**

Mako residues in the spray tank can damage sensitive plants. It is recommended that a sprayer be dedicated to the use of Mako. Where equipment is also used for crop spraying, it is particularly important that all traces of Mako be removed from mixing and spraying equipment immediately after spraying. The recommended sprayer cleanup is as follows:

1. Drain tank, then flush tank, boom, filters and hoses with clean water for a minimum of 10 minutes.
2. Fill the tank with clean water and add 300mL chlorine bleach (containing 4% chlorine) per 100L water. Flush through boom, filters and hoses, then allow to sit for 15 minutes with agitation engaged, then drain.
3. Repeat Step 2.
4. Nozzles and screens should be removed and cleaned separately. To remove traces of chlorine bleach, rinse the tank thoroughly with clean water and flush through boom, filters and hoses.

**CAUTION**

DO NOT use chlorine bleach with ammonia.

**If mixing with Glyphosate**, DO NOT mix or store or apply this product in galvanised steel, unlined steel containers or spray tanks, since a highly flammable gas mixture may be formed. So use only spray tanks and equipment made of plastic or plastic lined fibreglass, rubber, aluminium, brass, copper, or stainless steel.

**PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**
DO NOT apply to drainage ditches (including roadside ditches and table drains) and channels, as some of the chemicals may wash away in drainage water and be deposited in areas where it may cause damage to desirable trees and other plants. DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures, or onto agricultural land scheduled to be planted to crops or pastures, as injury to the crop or pasture may occur. DO NOT apply via aerial application equipment post plant except in Pinus spp. Plantations only. DO NOT apply within 48 hours of or during periods of intense rainfall, or when wind speed exceeds 30kph (for ground application) or 20kph (for aerial application). DO NOT apply on or near desirable non-target trees or other plants, or on areas where their roots may extend. DO NOT apply to any drainage line. DO NOT used on leached, sandy soils, low in organic matter or on alkaline soils.

**PROTECTION OF LIVESTOCK**
DO NOT graze treated areas or cut for stock food.

**PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**
DO NOT apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots extend, or in locations where the chemical may be washed or moved into contact with their roots. DO NOT contaminate any body of water by spraying, cleaning of equipment, disposal of waste, including chemical or used containers, or run-off from treated areas. If accidental contamination does occur, the water must not be used for irrigation. DO NOT broadcast apply to uncultivated or non-mounded or bare ground on slopes exceeding 30% (15 degrees). DO NOT apply within 10m of point sources susceptible to runoff, such as tracks, snig tracks and compacted log dumps. DO NOT apply sulformeturon-methyl within 60m of a waterway or dam, or further if native riverbank vegetation may be damaged. DO NOT load or apply within 20m of any well, sink hole, intermittent or perennial stream. DO NOT handle, mix or test operations in areas (such as roads) where drainage facilitates rapid entry into waterways. DO NOT apply to water-logged or saturated soil. DO NOT use in irrigation channels or drains. DO NOT empty equipment in situations reflected in the above dot points. Dangerous to algae and aquatic plants. DO NOT contaminate streams, rivers or waterways with chemical or used containers.

**STORAGE AND DISPOSAL**
During storage keep from contact with fertilisers, other pesticides and seeds. Store in the closed original container in a well-ventilated area, as cool as possible but out of direct sunlight. Triple or preferably pressure 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Empty containers and product should NOT be burnt.

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