



## **BRUSHWEED HERBICIDE RANGE**



*Science : Technology : Innovation*

## Introduction

Grosafe Chemicals has a range of brushweed herbicides and adjuvants to give applicators the ability to source an extensive range from one supplier at very competitive prices. All products in our range have been tested in the field and provide equivalent levels of control to the same competitor materials.

Our brushweed package includes the following products:

**Reclaim® Brushkiller** A herbicide to control a wide range of brushweeds including gorse and broom. Active Ingredients are 100g/litre picloram as the amine salt and 300 g/litre triclopyr as the butoxyethyl ester.

**Reply® 200** A herbicide for the control of gorse and other scrub weeds in pasture and waste areas.  
Active ingredient is 200g/kg metsulfuron methyl in the form of a water dispersible granule.

**Reply® 600** A herbicide for the control of gorse and other scrub weeds in pasture and waste areas.  
Active ingredient is 600g/kg metsulfuron methyl in the form of a water dispersible granule.

**Hortcare® Firstrate 450™**. A non-selective herbicide for the control of many annual and perennial weeds in a wide range of situations.  
Active ingredient is 450g/litre glyphosate as the isopropylamine salt in the form of a soluble concentrate.

**Hortcare® Glyphosate 680 WSG** A non-residual herbicide for the control of most annual and perennial weeds in Agriculture, Horticulture, Forestry, Drains, Aquatic Areas and a Wide Range of Brush Weeds. Active ingredient is 680g/kg glyphosate as the mono ammonium salt in the form of a water soluble granule.

**Force™** An organo-silicon penetrant for improved penetration and faster uptake of Reclaim®, Reply®, Hortcare® Glyphosate 360 SC, Hortcare® Firstrate 450™, Hortcare® Glyphosate 680 WSG and other brushweed herbicides.  
Active ingredient is 750g/litre polyther modified polysiloxane.

Agcare®, Hortcare®™, Reclaim, Reply 200, Reply 600, Firstrate 450 and Force are registered trademarks of Grosafe Chemicals Limited



**HARMFUL/ECOTOXIC**

**KEEP OUT OF REACH OF CHILDREN**

# RECLAIM<sup>®</sup> BRUSHKILLER HERBICIDE

A herbicide for the control of a range  
of brushweeds

ACTIVE INGREDIENT: contains 100g/litre picloram as the amine salt and 300 g/litre triclopyr as the butoxyethyl ester, in the form of an emulsifiable concentrate

**NET CONTENTS: 20 litres**



**HSNO HAZARD CLASSIFICATION: 6.1D, 6.3B, 6.4A, 6.5B, 6.9B, 9.1A, 9.2A, 9.3C**

**WARNING:** May be harmful if swallowed, inhaled or absorbed through the skin. May cause skin or eye irritation. May cause skin sensitization. May cause organ damage from repeated oral exposure at high doses.

**PERSONAL PROTECTION:** When mixing or loading wear overalls, impervious gloves and eye/ face protection. Wash hands and exposed skin after work.

**STORAGE:** Store in original container tightly closed and in a locked, dry, cool, well ventilated area, away from foodstuffs. When stored appropriately this product should show no significant degradation for two years from the date of manufacture. Contact the proprietor for further information about the use of this product if it is older than this.

**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain and absorb with suitable inert absorbent material and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

**PRODUCT DISPOSAL:** If possible dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

**CONTAINER DISPOSAL:** Triple rinse container and add residue to mixture. If circumstances, especially wind direction, permit the empty containers may be burned, otherwise bury in a suitable land fill.

**ENVIRONMENT:** Toxic to plants: Handle and apply with care, spray drift may cause severe damage to other desirable plants. Highly toxic to aquatic plants; avoid contamination of any water supply with product or empty container. Decontaminate equipment after use.

**APPROVED HANDLER:** This product must be under the control of an approved handler during use.

**RECORD KEEPING:** A record of use must be kept according to HSNO Regulations and N.Z. Standard for the Management of Agrichemicals (NZS 8409).

**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If swallowed, give a glass or two of water but do NOT induce vomiting. If in eyes, immediately flush with plenty of water for at least 15 minutes. If irritation persists, get medical attention. If on skin, remove contaminated clothing immediately. Wash skin immediately with plenty of soap and water. In case of inhalation of spray remove to fresh air. Get medical attention if patient is in distress. For advice call a doctor or the National Poisons Centre (0800 764 766)

**SPRAY EQUIPMENT**

**Hand gun:** Apply the recommended mix to give full coverage of leaves and stems, from all directions. Use a No. 6–8 tip and pressure of not less than 1,000 kPa or greater than 2,000 kPa.

**Aerial application:** Apply 200–400 litres spray-mix per hectare as a coarse spray (BCPC or ASAE S572). To minimise drift it is recommended to spray when wind speed is between 3 and 20 km/hr. Do not spray if sensitive plants are downwind. Aerial applications may require some follow-up ground spraying.

**Knapsack:** Apply the spray mix to give full coverage of leaves and stems.

**Mistblower:** Use only where good coverage can be achieved. Use a marker dye.

**All applications must be in accordance with the New Zealand Standard for the Management of Agrichemicals (NZS 8409).**

**CLEANING SPRAY EQUIPMENT**

After use empty the spray unit and drain the whole system. Wash the spray tank with a pressure hose. Drain the spray unit and clean filters, pump, lines, hoses and nozzles. Quarter fill the tank with clean water and circulate through the pump, lines, nozzles. Repeat this process. Note: rinse water should be sprayed on ground already sprayed or on waste land away from desirable plants or water sources.

**DECONTAMINATION:** Before spraying sensitive crops with equipment that has been used to apply Reclaim Brushkiller rinse the system as above. Quarter fill the tank and add an alkali based laundry detergent at the rate of 500g (or ml.) per 100 litres of water [halve the rate for concentrated cleaners]. Circulate through the system for fifteen minutes. Do not use cleaners containing chlorine. Drain the system. Clean filters and nozzles. Flush the system with clean water.

**MIXING:** Half fill the spray tank with water and add the measured amount of Reclaim Brushkiller. Start the agitator and add the remainder of the water. If required add Force Penetrant. Maintain agitation while spraying. Mix only sufficient spray-mix for immediate use. Do not store spray-mix.

**WITHHOLDING PERIOD:** It is an offence for users of this product to cause residues exceeding the relevant MRL in New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards.

**STOCK SAFETY:** Poisonous plants (such as inkweed, ragwort, tutu) can become more palatable after spraying. If concerned stock should be kept away from treated areas until the plants have died.

**RESISTANCE MANAGEMENT:** Reclaim Brushkiller is a pyridine acetylacid herbicide. Some weed species may become resistant following repeated doses. In such cases herbicides of different modes of action should be used.

See: <http://nzpps.org/resistance/picolinic.php> for details of resistance management strategies.

**CLOVER RE-ESTABLISHMENT:** Residues of picloram (an active ingredient in Reclaim Brushkiller) are harmful to legumes and may prevent early re-establishment after treatment. To check for such residues it is suggested a test area should be sown with clover 1–2 months prior to the planned drilling time.

**DIRECTIONS FOR USE / DOSE RATES**

| Weed       | Gun mls/100L water | Aerial litres/ha | Weed              | Gun mls/100L water | Aerial litres/ha |
|------------|--------------------|------------------|-------------------|--------------------|------------------|
| Gorse      | 250–300            | 10               | Lupin             | 100                | 2                |
| Broom      | 250                | 10               | Sweet Briar       | 300–500            | 12               |
| Tutu       | 300                | 10               | Matagouri         | 500                | 12               |
| Blackberry | 500–650            | 10               | Woolly Nightshade | 250                | 10               |

**Knapsack:** Use 6 ml Reclaim Brushkiller per litre of water.

**Mistblower:** Use 100 ml / 10 litres. For ulv application use 500 ml / 10 litres, using the No. 3 or 4 hole.

**COMMENTS**

**GORSE: Ground application:** Apply during the active growth period, from spring until early summer at a rate of 250 ml./100 litres. In North Canterbury use 300 ml./ 100 litres. If growth is slow or in adverse conditions add Force TM Penetrant at 100 ml./ 100 litres spray mix. A follow up treatment may be necessary for complete control.

**Aerial application:** Apply during active growth. Add Force Penetrant to the spraymix at 2 litres/hectare. Bushes should be less than 3m high, with stems less than 3 cm in diameter.

**BROOM:** Apply during the active growth period, from spring until early summer. Bushes should be less than 3m high, with stems less than 3 cm in diameter.

**BLACKBERRY:** Apply during summer and autumn when bushes are growing actively. Higher rates will be required in the East Coast of the North Island and in Northland. Note: in Northland some strains of this weed are difficult to kill.

**MATAGOURI:** For best results spray in November - December when the plants are growing actively.

**SWEET BRIAR:** Apply in November to early January. Aerial application should be restricted to bushes less than 2m high.

**RAGWORT and other weeds:** Use the gorse application rate for the control of such broadleaf weeds as ragwort, fennel, nettle, inkweed, thistles.

**TUTU:** Apply to fresh regrowth after frond expansion.

**WOOLLY NIGHTSHADE:** Ground and aerial application: Apply when growing actively. The use of Force Penetrant is recommended.

**BARBERRY, OLD MAN'S BEARD, HAWTHORN, WOOLLY NIGHTSHADE, WATTLE, WILLOW and other brushweeds. STUMP TREATMENT:** Mix 1 part Reclaim Brushkiller with 20 parts water or diesel oil. Using a paintbrush or knapsack sprayer apply to the freshly cut surface and stems to ground level. If using diesel oil maintain agitation.

**TREES, Stem treatment:** With an axe or hatchet, make shallow cuts at waist height, shaped to trap 1–2 mls Reclaim Brushkiller applied with a drench gun or similar. Treat when trees are growing actively.

**RADIATA PINE: Aerial Release:**

| Weeds  | Dose rate     | Comments   |
|--|---------------|--|
| Thistles, lupins, gorse, broom, Himalaya honeysuckle, tutu, buddleia, wattle | 1–2 litres/ha | Use the high rate only on dormant trees within one year of planting. Some minor tree distortion may occur. Suppression only of brushweeds will be obtained—follow-up treatment may be required for full control. Use the low rate if pine trees are not dormant. Use on first year trees only. |

Consult your Grosafe representative.

Registered pursuant to the ACVM Act 1997, No P8982.

See [www.foodsafety.govt.nz](http://www.foodsafety.govt.nz) for registration conditions.

Approved pursuant to HSNO Act 1996, Approval code: HSR 002485

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



**WARNING:** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

REGISTERED PROPRIETOR:

20 JEAN BATTEN DRIVE  
MT MAUNGANUI  
FREE PHONE 0800 220 002  
FAX 07 578 6241  
EMAIL: [info@grosafe.co.nz](mailto:info@grosafe.co.nz)  
[www.grosafe.co.nz](http://www.grosafe.co.nz)

**Grosafe**  
CHEMICALS LTD

**NET CONTENTS: 1 litre, 5 litres, 20 litres, 200 litres**

Batch No:

Date of Manufacture:





**ECOTOXIC**

**KEEP OUT OF REACH OF CHILDREN**

# REPLY<sup>®</sup> 200

## HERBICIDE

A herbicide for the control of gorse and other scrub weeds in pasture and waste areas

ACTIVE INGREDIENT: contains 200g/kg metsulfuron-methyl in the form of a water dispersible granule

**NET CONTENTS: 500g**



**HSNO CLASSIFICATION: 6.3B, 6.4A, 9.1A, 9.2A**

**WARNING:**

**PERSONAL PROTECTION:** This product may cause skin / eye irritation: when mixing wear a face mask or goggles, rubber gloves and overalls. Do not eat, drink or smoke while using. Wash hands and face before meals and after work. Wash protective clothing after use.

**STORAGE:** Store product in original container, tightly closed, in a cool, dry place. Keep out of reach of children, and away from foodstuffs.

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

**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

**PRODUCT DISPOSAL:** If possible dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

**CONTAINER DISPOSAL:** Burn if circumstances, especially wind direction, permit. Otherwise bury in a suitable land fill.

**ENVIRONMENT:** Very toxic to plant life, including aquatic plants. Do not mix or load near any body of water, avoid spray drift over, or spillage into open water. Avoid contamination of any water supply with chemical or empty container.

**APPROVED HANDLER:** This product must be under the control of an approved handler or securely stored.

**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If spilled on skin or eyes flush with water. For advice call a doctor or the National Poisons Centre (0800 764 766)

**MANAGEMENT CONSIDERATIONS:**

**General:** Reply is non volatile and non-hormonal and this in conjunction with very low use rates adds to environmental acceptability. Best results are obtained when applied to actively growing weeds during late spring to autumn.

**Mode of action:** Rapidly absorbed by foliage and translocated in the plant. Stops plant growth by arresting cell division in the growing tips of roots and leaves. This action occurs very quickly and is followed by a slow decline in plant vigour and subsequent death.

**Pasture Re-establishment:** Reply is extremely injurious to ryegrass/white clover pasture. Soil residues may also prevent early re-establishment of ryegrass and clover and a minimum period of three months should elapse before oversowing. As persistence of the soil residue varies according to dose rate, soil type and rainfall, it is suggested that small areas be oversown 1–2 months prior to the planned time for sowing to check for possible harmful residues. Where a quick cover of vegetation is required, a resistant grass such as browntop can be oversown.

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards.**

**Withholding period:**

**Rainfall:** Rainfall within 1 hour following treatment may reduce effectiveness.

**Surfactant:** Add Force™ Penetrant at 100ml/100 litres of spray mix for handgun application as directed for specific weeds below, and add 1.5 litres per hectare for aerial applications when spraying gorse, manuka or kanuka.

**Resistant weed warning:** Reply is a member of the sulfonyl group of herbicides. Some naturally occurring weed biotypes resistant to Reply and other sulfonyl ureas may exist. These resistant weeds will not be controlled by Reply or other sulfonyl urea herbicides and may become dominant in that field. Cultural practices such as tillage, preventing weed escapes from going to seed and using herbicides with different modes of action within and between seasons can aid in delaying the spread and possible dominance of resistant weed biotypes.

**RECOMMENDED USES:**

| Weed             | Handgun   | Knapsack | Mistblower    | Boom/aerial and ground |
|------------------|-----------|----------|---------------|------------------------|
|                  | Rate/100L | Rate/10L | Rate/10L      | Rate/ha                |
| Blackberry       | 60–100g   | 15g      | 30g           | 600–900g               |
| Bracken          | 100g      | 15g      | 30g           | 500g                   |
| Broom            | 100g      | 15g      | 30g           | —                      |
| Gorse            | 45g       | 15g      | 30g (60g/ulv) | 1.5kg                  |
| Seedling gorse   |           |          |               | 500g                   |
| Kanuka           | 100g      | 15g      | 30g           | 900g                   |
| Manuka           | 100g      | 15g      | 30g           | 900g                   |
| Matagouri        | 75g       | 15g      | 30g           | 500g                   |
| Sweet Briar      | 100g      | 15g      | 30g           | 500g                   |
| Ragwort/Thistles | 15g       | 3g       | —             | —                      |

**COMMENTS:**

**Blackberry:** Use the highest rate on harder to kill blackberry types such as those occurring in Northland and on the East Coast of the North Island. Reply may be applied from November to June, but best results will be obtained from treatment from January to May. Whenever possible use ground application equipment. After treatment, when the canes become brittle, slashing, burning and/or intensive stocking with sheep or goats is recommended to prevent regrowth. Re-growth may require treatment two years after spraying.

**Bracken:** Apply when fronds are unfurled (Jan-June) but before frost browning. Best results can be expected when plants are burnt and frond regrowth is sprayed.

**Broom:** Apply from November to May to actively growing bushes. Ensure the addition of Force Penetrant at 100 ml/100 litres.

**Gorse:** Apply at any time of the year. Add Force Penetrant at 100ml/100 litres for handgun, 10ml/10 litres for knapsack and 1.5 litres per hectare for aerial applications.

**Kanuka/Manuka:** Apply at any time of the year. The addition of Force Penetrant at 1.5 litres/ha is recommended when applying aerially.

**Matagouri:** Apply when bushes are actively growing, generally December–April. The addition of Force Penetrant at 1.5 litres/ha is recommended when applying aerially.

**Sweet Briar:** Apply from November–April. Ensure complete coverage of trees.

REGISTERED PROPRIETOR:



20 JEAN BATTEN DRIVE  
MT MAUNGANUI 3116  
FREE PHONE 0800 220 002 • FAX: 07 578 6241  
EMAIL: info@grosafe.co.nz • www.grosafe.co.nz

Reply® and Force® are registered trade marks of Grosafe Chemicals Ltd.

**Date of Manufacture:**

**Batch No:**

**Forestry - Radiata pine only**

Use only as a pre-plant treatment. Use 500 g/ha for the control of bracken, blackberry and seedling gorse. Do not plant trees within 2 months of spraying.

**APPLICATION:**

**Aerial:** Apply using the half overlap flying technique with minimal water rates of 200–400 litres/ha. Use nozzle configuration and flight pattern that ensures canopy penetration and full coverage of bushes otherwise significant regrowth will occur.

Aerial application is recommended for use in non-crop areas only.

**Handgun spraying:** Apply to achieve full coverage of foliage and stems and penetration into bushes. Spray to the point of run-off. Use pressures of 1500–2500 kPa through a No. 6 nozzle tip. For gorse, spraying to run-off is essential. The amount of spray required will vary with the height, density and type of scrub weed. Following aerial application it is vital to implement follow-up spraying and/or management practices such as slashing, crushing or burning of bushes and oversowing of pasture species.

**Knapsack:** Use a hand knapsack only on small bushes where full coverage of foliage and stems can be achieved.

**Mistblower:** Obtain good coverage of foliage stems and penetration into bushes. For ULV attachments, use the largest setting.

**Marker dyes:** Reply is compatible with most commonly used marker dyes, but tank mixtures with dyes based on acetic acid should be used within 24 hours.

Registered pursuant to the ACVM Act 1979, No. P P7237.  
See www.foodsafety.govt.nz for registration conditions.  
Approved pursuant to the HSNO Act 1996, No HSR 000245  
See www.epa.govt.nz for approval conditions.

**WARRANTY** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

**EMERGENCY RESPONSE  
0800 CHEMCALL (0800 243 622)**



9 421902 986185 >



**ECOTOXIC**

**KEEP OUT OF REACH OF CHILDREN**

# REPLY<sup>®</sup> 600

## HERBICIDE

A herbicide for the control of gorse and other scrub weeds in pasture and waste areas

ACTIVE INGREDIENT: contains 600g/kg metsulfuron-methyl in the form of a water dispersible granule

**NET CONTENTS: 500 grams**



**HSNO CLASSIFICATION: 6.3B, 6.4A, 9.1A, 9.2A**

**WARNING:**

**PERSONAL PROTECTION:** This product may cause skin / eye irritation: when mixing wear a face mask or goggles, rubber gloves and overalls. Do not eat, drink or smoke while using. Wash hands and face before meals and after work. Wash protective clothing after use.

**STORAGE:** Store product in original container, tightly closed, in a cool, dry place. Keep out of reach of children, and away from foodstuffs. Store in accordance with NZS 8409 Management of Agrichemicals. Stores containing more than 100 kg are required to have a written emergency response plan, and display the appropriate signage.

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

**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

**PRODUCT DISPOSAL:** If possible dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

**CONTAINER DISPOSAL:** Burn if circumstances, especially wind direction, permit. Otherwise bury in a suitable land fill.

**ENVIRONMENT:** Very toxic to plant life, including aquatic plants. Do not mix or load near any body of water, avoid spray drift over, or spillage into open water. Avoid contamination of any water supply with chemical or empty container. Avoid spray drift outside the target area.

**APPROVED HANDLER:** This product must be under the control of an approved handler or securely stored.

**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If spilled on skin or eyes flush with water. For advice call a doctor or the National Poisons Centre (0800 764 766)

**MANAGEMENT CONSIDERATIONS:**

**General:** Reply is non volatile and non-hormonal and this in conjunction with very low use rates adds to environmental acceptability. Best results are obtained when applied to actively growing weeds during late spring to autumn.

**Mode of action:** Rapidly absorbed by foliage and translocated in the plant. Stops plant growth by arresting cell division in the growing tips of roots and leaves. This action occurs very quickly and is followed by a slow decline in plant vigour and subsequent death.

**Pasture Re-establishment:** Reply 600 is extremely injurious to ryegrass/clover pastures. Soil residues may also prevent early re-establishment of ryegrass and clover and a minimum period of three months should elapse before oversowing. As persistence of the soil residue varies according to dose rate, soil type and rainfall, it is suggested that small areas be oversown 1–2 months prior to the planned time for sowing to check for possible harmful residues. Where a quick cover of vegetation is required, a resistant grass such as browntop can be oversown.

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards.**

**Withholding period:** Do not graze treated areas with dairy cows for three days after application or one day for other stock.

**Rainfall:** Rainfall within 1 hour following treatment may reduce effectiveness.

**Surfactant:** Add Force™ Penetrant at 100ml/100 litres of spray mix for handgun application as directed for specific weeds below, and add 1.5 litres per hectare for aerial applications when spraying gorse, manuka or kanuka.

**Resistant weed warning:** Reply 600 is a member of the sulfonyl urea group of herbicides. Some naturally occurring weed biotypes resistant to Reply 600 and other sulfonyl ureas may exist. These resistant weeds will not be controlled by Reply 600 or other sulfonyl urea herbicides and may become dominant in that field. Cultural practices such as tillage, preventing weed escapes from going to seed and using herbicides with different modes of action within and between seasons can aid in delaying the spread and possible dominance of resistant weed biotypes.

**Cleaning:** To avoid injury to subsequently sprayed sensitive crops all traces of Reply 600 must be removed from the mixing and spraying equipment immediately after use.

1. Drain tank. Then flush tank, pump and boom with clean water for 10 minutes.
2. Fill tank with clean water plus one litre chlorine bleach (3% sodium hypochlorite) per 100 litres water. Agitate, flush through system and drain.
3. Repeat step #2.
4. Remove all nozzles and filters and clean separately. Thoroughly rinse tank and flush clean water through pump and boom to remove all traces of chlorine solution.

**RECOMMENDED USES:**

| Weed   | Handgun   | Knapsack | Mistblower    | Boom/aerial and ground |
|--|-----------|----------|---------------|------------------------|
|  | Rate/100L | Rate/10L | Rate/10L      | Rate/ha                |
| Barberry   | 35g       | 5g       | 10g           | —                      |
| Blackberry                                       | 20–35g    | 5–8g     | 10–16g        | 200–300g               |
| Bracken  | 35g       | 5g       | 10g           | 170g                   |
| Broadleaf weeds on waste areas, industrial sites | 5g        | 1g       | 2g            | 50g                    |
| Broom  | 35g       | 5g       | 10g           | —                      |
| Fennel   | 5g        | 1g       | 2g            | 50g                    |
| Gorse  | 20g       | 5g       | 10g (20g/ulv) | 500g                   |
| Seedling gorse                                   |           |          |               | 170g                   |
| Hawthorn   | 35g       | 5g       | 10g           |                        |
| Inkweed  | 25g       | 5g       | 10g           | 50g                    |
| Kanuka/Manuka                                    | 30g       | 5g       | 10g           | 300g                   |
| Matagouri  | 25g       | 5g       | 10g           | 170g                   |
| Old Man's Beard                                  | 35g       | 5g       |               | 170g                   |
| Privet   | 35g       | 5g       | 10g           |                        |
| Ragwort/Thistles                                 | 2.5–5g    | 1g       | —             | —                      |
| Sweet Briar                                      | 35g       | 5g       | 10g           | 170g                   |
| Wild Ginger                                      | 25g       | 5g       | 10g           |                        |
| Willows  | 35g       | 5g       | 10g           |                        |

**COMMENTS:**

**Barberry:** Best results on bushes under 3 metres: treat from November to May.

**Blackberry:** Use the highest rate on harder to kill blackberry types such as those occurring in Northland and on the East Coast of the North Island. Reply 600 may be applied from November to June, but best results will be obtained from treatment from January to May. Whenever possible use ground application equipment. After treatment, when the canes become brittle, slashing, burning and/or intensive stocking with sheep or goats is recommended to prevent regrowth. Re-growth may require treatment two years after spraying.

**Bracken:** Apply when fronds are unfurled (Jan-June) but before frost browning. Best results can be expected when plants are burnt in Spring and frond regrowth is sprayed in the following March to June.

**Broadleaf weeds, annual, perennial:** Treat when actively growing.

**Broom:** Apply from November to May to actively growing bushes. Ensure the addition of Force Penetrant at 100 ml/100 litres.

**Fennel:** Treat when actively growing.

**Gorse:** Apply at any time of the year. Add Force Penetrant at 100ml/100 litres for handgun, 10ml/10 litres for knapsack and 1.5 litres per hectare for aerial applications. Retreatment may be required.

**Hawthorn:** Best results on bushes under 3 metres: treat from November to March.

**Inkweed:** Treat when actively growing.

**Kanuka/Manuka:** Apply at any time of the year, but reduced control may occur during periods of peak flowering. Ensure complete coverage of tall growing bushes. Aerial: Apply at least 400 litres water/ha. The addition of Force Penetrant at 1.5 litres/ha is recommended when applying aerially.

**WARRANTY** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

Reply® and Force® are registered trade marks of Grosafe Chemicals Ltd. Landmark™ is a trademark of Nufarm Limited.

REGISTERED PROPRIETOR:

**Grosafe**  
CHEMICALS LTD

20 JEAN BATTEN DRIVE  
MT MAUNGANUI 3116  
FREE PHONE 0800 220 002 • FAX: 07 578 6241  
EMAIL: info@grosafe.co.nz • www.grosafe.co.nz

Date of Manufacture:

Batch No.

**Matagouri:** Apply when bushes are actively growing, generally December–April. The addition of Force Penetrant at 1.5 litres/ha is recommended when applying aerially.

**Old Man's Beard:** Treat from November to May. Add Force Penetrant at 100 ml/100 litres for handgun, 10ml/10 litres for knapsack and 1.5 litres per hectare for aerial applications.

**Privet:** Apply in Spring and Autumn when actively growing.

**Ragwort:** Apply from rosette stage to flowering. Use the higher rate on multicrown plants. Direct spray to the centre of the plant. Seed from treated flowering plants will not be viable providing application is made before senescence (flowers discolour). After spraying remove stock until the treated plants are dead.

**Sweet Briar:** Apply from November–April. Ensure complete coverage.

**Wild Ginger:** Apply from November–April.

**Willows:** Apply from November–April. Ensure complete coverage.

**Forestry - Radiata pine only**

Preplant treatment for radiata pine only. To control bracken, blackberry and seedling gorse, apply 170g Reply 600 per hectare. Do not plant trees within 2 months of spraying.

**APPLICATION:**

**Aerial:** Apply using the half overlap flying technique with water rates of 200–400 litres/ha, as two overlapping passes of 100–200 litres/ha. For foaming nozzle systems apply a minimum of 230 litres water/ha as two overlapping passes of 115 litres water/ha. Use nozzle configuration and flight pattern that ensures canopy penetration and full coverage of bushes otherwise significant regrowth will occur. Aerial application is recommended for use in non-crop areas only.

Following aerial application, it is vital to implement follow-up spraying and/or management practices such as slashing, crushing or burning of bushes and oversowing of pasture species.

**Handgun spraying:** Apply to achieve full coverage of foliage and stems and penetration into bushes. Spray to the point of run-off. Use pressures of 1500–2500 kPa through a No. 6 nozzle tip. For gorse, spraying to run-off is essential. The amount of spray required will vary with the height, density and type of scrub weed.

**Knapsack:** Use a hand knapsack only on small bushes where full coverage of foliage and stems can be achieved.

**Mistblower:** Obtain good coverage of foliage stems and penetration into bushes. For ULV attachments, use the largest setting.

**Marker dyes:** Reply 600 is compatible with most commonly used marker dyes, such as Landmark™, but tank mixtures with dyes based on acetic acid should be used within 24 hours.

Registered pursuant to the ACVM Act 1979 No. P8544.  
See www.foodsafety.govt.nz for registration conditions.

Approved pursuant to the HSNO Act 1996, No HSR 000242  
See www.epa.govt.nz for approval conditions.

**EMERGENCY RESPONSE**  
0800 CHEMCALL (0800 243 622)





**HARMFUL/ECOTOXIC**

**KEEP OUT OF REACH OF CHILDREN**

**HORTCARE<sup>®</sup>**

**FIRSTRATE<sup>®</sup> 450**

**HERBICIDE**

A herbicide for the control of many  
annual and perennial weeds in  
a wide range of situations

ACTIVE INGREDIENT: contains 450g/L glyphosate as the  
isopropylamine salt in the form of a soluble concentrate

**Grosafe**

HSNO CLASSIFICATION: 6.1D, 6.4A, 9.1B

**WARNING:**  
**PERSONAL PROTECTION:** This product may be harmful if swallowed, may cause eye irritation: when mixing wear a face mask or goggles, rubber gloves and overalls. Do not eat, drink or smoke while using. Wash hands and face before meals and after work. Wash protective clothing after use.  
**STORAGE:** Store product in original container, tightly closed, in a cool, dry place. Keep out of reach of children, and away from foodstuffs.  
 Shelf life: When stored appropriately this product should show no significant degradation for two years from date of manufacture. Contact your supplier for further information about the use of any product that is older than this.  
**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Absorb [ with sawdust, soil etc. ], Contain and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.  
**PRODUCT DISPOSAL:** If possible, dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots.  
**CONTAINER DISPOSAL:** Triple rinse container and add residue to mixture. If circumstances, especially wind direction, permit, the empty containers may be burned, otherwise bury in a suitable landfill or dispose of in an agricultural recycling scheme.  
**ENVIRONMENT:** Toxic to aquatic organisms. Do not mix or load near any body of water, avoid spray drift over, or spillage into open water. Avoid contamination of any water supply with chemical or empty container.  
**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If spilled on skin/ eyes flush with water. If swallowed do not induce vomiting.  
 For advice call a doctor or the National Poisons Centre (0800 764 766).

**GENERAL INFORMATION:**

1. FIRSTRATE 450 is a foliar absorbed and translocated herbicide for control of emerged weeds only and is not residual
2. FIRSTRATE 450 can be deactivated by soil particles and hard water containing calcium salts. If hard water cannot be avoided, the addition of Primabuff BB5 is recommended.
3. Plants should be actively growing, free of stress with clean foliage at time of spraying. FIRSTRATE 450 and solutions should only be mixed, contained in or sprayed by equipment made from stainless steel, fibreglass, plastic, aluminium, brass and copper.

**WARNING:** A highly flammable gas may be formed from the contact of this product with galvanised or unlined steel.

The effects of FIRSTRATE 450 may not be apparent for 3 - 7 days depending on the weather conditions, weed species and the herbicide rate used. Some perennial weeds may not show effects for 14 - 21 days.

**RESTRICTIONS:** Do not spray if rain is likely within 6 hours. Do not allow spray contact with non target plants as severe injury may occur.

1. Clean spray tank of previous chemical residues, preferably with a chemical residue remover.
2. Half fill spray tank with clean water, add required amount of FIRSTRATE 450 then fill with clean water.
3. Add surfactant where required.
4. Agitate well before spraying.
5. When tank mixing with other chemicals, add FIRSTRATE 450 after other water soluble products, but before flowables eg. Flowable Simazine.

**APPLICATION:**

**Boom equipment:**

FIRSTRATE 450 can be applied in spray volumes of up to 200 litres per hectare using fan nozzles at pressures in the range of 240–280 kPa.

Boom height should be set so a double overlap of nozzle pattern is achieved at the top of the target plant.

**Aerial equipment:**

(Forest and non crop areas only) FIRSTRATE 450 can be applied by aircraft in spray volumes of up to 100 litres per hectare. Increase spray volumes in hilly terrain to ensure maximum target contact. DO NOT use in intensive horticultural cropping areas.

**Handgun and Knapsack:**

Ensure a fine spray pattern to give complete coverage.

**Wiper equipment:**

Mix only enough for immediate use. Plants must be clean and dry and the wiper fully saturated. Apply up and down slopes for effective applications. High weed density:

Reduce speed and apply twice in opposing directions.

**CLEANING EQUIPMENT:**

All spray equipment including pumps, spray tanks, lines and nozzles, landing gear (aircraft) should be thoroughly washed with water after each day of spraying.

| SITUATION  | CROP                                  | COMMENTS   |
|--|---------------------------------------|--|
| <b>Drains and Waterways</b>  |                                       | 1. Do not spray until 75% of the weed is above water level.<br>2. Do not allow submergence for 6 hours post spraying.  |
| <b>Forestry</b><br>For control of alt listed weeds prior to planting of forest or nursery or around established trees. |                                       | 1. For rates for weeds see Weed Table.<br>2. Do not allow spray contact with established trees.  |
| <b>Industrial</b><br>As a knockdown or selective if spot spraying.   |                                       | 1. Treat weeds as per Weed Table.  |
| <b>Market Gardens</b><br>As a knockdown prior to seeding, transplanting and after harvest clean-up.                    | All vegetables                        | 1. For best results do not disturb weeds by grazing or cultivation for one day post-spraying of annual weeds and 10 days post-spraying of perennial weeds.<br>2. Cultivate within 21 days of spraying to ensure control.<br>3. Do not sow until a satisfactory seed bed has been prepared.<br>4. An appropriate residual herbicide can be used as a tank mix with FIRSTRATE 450.   |
| <b>Minimum Tillage</b><br>For total weed control prior to seeding.   | Cereal, pasture and leguminous crops. | 1. For best results do not disturb weeds by grazing or cultivation for one day post-spraying of annual weeds and 10 days post-spraying of perennial weeds.<br>2. To ensure control and avoid respraying newly germinated weeds, work sprayed area by full cultivation of the seeding operation within three weeks of spraying.<br>3. Do not sow until a satisfactory seed bed has been prepared.<br>4. For improved control of White Clover, tank mix with dicamba 20% at 1.5 L/ha. Observe plant back periods of dicamba for respective crop. |

| SITUATION   | CROP  | COMMENTS   |
|---|---|--|
| <b>Orchards and vineyards</b><br>As a knockdown prior to establishment or where plants are three years old or over. | Apple, citrus, grapevines, kiwifruit, pear and stonefruit | 1. Use a directed or shielded spray.<br>2. DO NOT let spray contact any green foliage or new growth.<br>3. Spray before bloom stage of crop.<br>4. FIRSTRATE 450 can be tank-mixed with an appropriate herbicide for residual control. |
| <b>Pre-harvest</b><br>For control of emerged weeds and as a clean-up to enhance harvesting.                         | Wheat, barley, oats and threshing peas                    | 1. Spray 7–12 days pre-harvest<br>2. Grain moisture should be below 30%.<br>3. Withholding period: seven days.<br>4. Do not spray seed crops.<br>5. Do not spray undersown crop.   |
| <b>Recreational areas</b><br>For weed control prior to establishment and as a clean-up around established areas.    | Lawns, ornamentals, parks and reserves                    | 1. Established plants: use a directed or shielded spray or with a wiper around plants, avoiding any spray contact on green or growing points of plant.   |

- It is an offence to use this product on animals.
- It is an offence for users of this product to cause residues exceeding the relevant MRL in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards.

**RECOMMENDATIONS FOR USE**

| Weed                     | Boom/Aerial vol/ha       | Handgun ml/100L      | Knapsack ml/15L     | Mist Blower ml/10L | Comments   |
|--------------------------|--------------------------|----------------------|---------------------|--------------------|--|
| Annual weeds (seedlings) | 0.8–1.6                  | 160ml                | 25                  | 50                 | Use the higher rate for larger weeds. For residual control add Gesatop 500 FW.   |
| Australian sedge         | 5–7.2 (aerial)           | 800ml                | 120                 | 240                | Apply from November to March. Burn or slash from 30 days after treatment.  |
| Barberry                 | —                        | 800ml                | 120                 | 240                | Apply from flowering to late fruit stage (Jan–April). Regrowth should be 1.5 m tall before spraying.   |
| Barley grass             | 0.8                      | 160                  | 25                  | 50                 | Apply when plants are at early seedhead stage (Sept–Dec). Add Gesatop 500 FW for residual control.   |
| Blackberry               | 7–16                     | 1.2L                 | 120                 | 240                | Apply from flowering to fruiting stage (Dec–April) before frost occurs. For hard to kill blackberry, aerial application or no follow up planned, use the higher rate. Allow 6–10 weeks before slashing or burning.   |
| Boxthorn                 | —                        | 1L                   | 120                 | —                  | Apply to actively growing plants (Nov–April). Ensure complete coverage of dense thickets. Do not use extra surfactant or treat salt damaged bushes.  |
| Bracken/Broom            | 7.2 (+250 ml Force)      | 800 (+250 ml Force)  | 120 (+30ml Force)   | 240 (+20ml Force)  | Apply after bracken fronds have unfurled mid-Jan–June) but before frosts occur. For ground application to broom anytime, but for aerial application when broom is in full leaf.  |
| Browntop                 | 2.4                      | 400ml                | 60                  | 120                | Apply when plants 5–10cm high. For taller plants, graze or burn and allow regrowth of 5–10cm height before treatment.  |
| Buddleia                 | 7.2                      | 500                  | 120                 | —                  | Apply using handgun anytime. Aerial: treat buddleia up to 2m high (Feb–April) using spray volume of 200–300L/ha.   |
| Californian thistle      | 3.2                      | 800ml                | 120                 | 240                | Apply after flower bud development. Retreatment and/or cropping or pasture improvement may be necessary to restrict re-establishment from seed. Mowing thistles 10 days after spraying may assist control.   |
| Cleavers                 | 1.2                      | 400ml                | 60                  | 120                | Spray actively growing plants after most reach early seedhead.   |
| Couch                    | 2.5–5                    | 800ml                | 120                 | 240                | For suppression apply 2.4 litres/ha in spring and repeat in autumn. For best results apply 3–5 L/ha in autumn to active growth of at least 10cm where no previous cultivation has occurred for at least 6 months.  |
| Docks                    | 3–7                      | 800ml                | 120                 | —                  | Spray plants in spring or summer when actively growing and before seedheads have emerged. Use the lower rate for seedlings and the higher rate for mature plants. In pasture situations boom spray prior to re-seeding or establishing crops to restrict seedling establishment. Under trees or vines may be tank mixed with Gesatop 500 FW for residual seedling control.   |
| Floating sweet grass     | 5                        | 800ml                | 120                 | —                  | Spray actively growing plants after most reach early seedhead. Spraying plants under drought stress may give reduced results.  |
| Gorse                    | —                        | 800 (+250 ml Force)  | —                   | —                  | Apply anytime ensuring complete coverage of plants not stressed by drought, grazing or previous herbicide treatment.   |
| Indian doab              | 7.2                      | 800ml                | 120                 | —                  | Apply at early seedhead stage before frost occurs.   |
| Kikuyu/Mercer grass      | 5                        | 800ml                | 120                 | 240                | Apply at early seedhead stage. On dense infestations cut and spray the regrowth.   |
| Nodding thistle          | —                        | 800ml                | 120                 | —                  | When applying by wiper ensure plants are actively growing (Oct–April) when at least 10cm of the plant can be wiped. A double pass is recommended and follow-up with spot treatments if necessary.  |
| Old man's beard          | —                        | 0.8–1.6L             | 240                 | —                  | Apply Nov–Mar prior to first leaf browning. Use higher rates on stems over 1cm in diameter. If complete coverage is not possible plants should be cut at ground level in winter and the regrowth sprayed with the higher rate when plants are at least 50cm long (March).  |
| Pampas grass/Toetoe      | —                        | 800ml                | 120                 | —                  | Spray spring–autumn. Reduced control may result if plants are in flower at the time of spraying. Ensure complete coverage.   |
| Paspalum                 | 3–5                      | 800ml                | 120                 | 240                | Spray at low rate if plants are at early seedhead stage. Use 5L/ha on mature vegetative plants before onset of frosts.   |
| Potato (self-set)        | 2.4                      | 400                  | 60                  | 120                | Spray actively growing plants after most reach early seedhead.   |
| Prairie grass            | 1.2                      | 160ml                | 25                  | —                  | Apply at early seedhead stage.   |
| Ragwort                  | 5                        | 800ml                | 120                 | —                  | Spray when actively growing and ensure there is sufficient leaf area for herbicide uptake. When applying by wiper, use on plants 10–15cm above the pasture. For best results, a double pass is recommended with a follow up spot treatment if necessary. Caution: Ragwort becomes more palatable after treatment. Keep stock away from treated areas until plants brown off. |
| Ratstail                 | 4                        | 800ml                | 120                 | —                  | Apply at a spray volume of 200L/ha in autumn. In dry conditions delay spraying until sufficient green foliage is present.  |
| Rautahi (cutty grass)    | 5                        | 800ml                | 120                 | 240                | Spray actively growing plants from Jan–March. Burning or slashing may begin 30 days after treatment following brown-off.   |
| Ring fern                | 0.8–2.4                  | 240                  | 40                  | —                  | For effective control use 2.4L/ha. For pasture manipulation apply 0.8–1.6L/ha from Dec–April. Use higher rate for dense infestations. Burn 4–6 weeks after treatment.  |
| Rushes                   | 5                        | 800ml                | 120                 | 240                | Burning or slashing may begin 30 days after treatment following brown-off. Wiper application to be carried out in Nov–Mar.   |
| Ryegrass (perennial)     | 1.2–2.4 (+150ml Force)   | 400ml (+100ml Force) | 60ml (+30ml Force)  | —                  | Spray actively growing plants 3–10cm high. Use lower rate from Jan–July when cultivation is to follow spraying, and the higher rate Aug–Dec. For pasture renewal select a suitable rate that reflects weed spectrum present.   |
| Sweet briar              | 9.6 (+250 ml/100L Force) | 800ml (+200ml Force) | 120ml (+30ml Force) | —                  | Spray when plants are in late flowering to early leaf yellowing stage. Ensure full leaf coverage.  |
| Tall fescue              | 5                        | 800ml                | 120                 | 240                | Apply to active growth in Jan–Mar.   |
| Willow                   | 7                        | 800ml                | 120                 | 240                | Apply before leaf fall begins (Jan–April). Good coverage is essential for best results.  |
| Yarrow                   | 2.5–5                    | —                    | —                   | —                  | Apply to plants with 5–10cm of leaf. For best results cultivate 10 days after treatment. Use the low rate when a crop to be drilled is competitive with yarrow and the higher rate when it is a poor competitor.   |

Registered pursuant to the ACVM Act 1997, No P7336.

See www.foodsafety.govt.nz for registration conditions.

Approved pursuant to HSNO Act 1996, Approval code: HSR 000769

See www.epa.govt.nz for approval conditions.

**WARRANTY:** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

REGISTERED PROPRIETOR:



20 JEAN BATTEN DRIVE  
 MT MAUNGANUI  
 FREE PHONE 0800 220 002  
 FAX 07 578 6241  
 EMAIL: info@grosafe.co.nz  
 www.grosafe.co.nz



NET CONTENTS: 20 litres

Hortcare® is a trade mark of Grosafe Chemicals Ltd.  
 FORCE® is a trade mark of Grosafe Chemicals Ltd.  
 GESATOP® is a registered trademark of Syngenta Group Company



**HARMFUL/ECOTOXIC**

**KEEP OUT OF REACH OF CHILDREN**

**HORTCARE<sup>®</sup>**

# **GLYPHOSATE 680 WSG**

**HERBICIDE**

A non-residual herbicide for the control of most annual and perennial weeds in agriculture, horticulture, forestry, drains, aquatic areas and a wide range of brush weeds

ACTIVE INGREDIENT: contains 680g/kg glyphosate as the mono ammonium salt in the form of a water soluble granule

**Grosafe**

**HSNO HAZARD CLASSIFICATION: 6.1E, 8.3A, 9.1B**

**WARNING:** Slightly toxic by ingestion, may cause serious eye damage.  
**PERSONAL PROTECTION:** When mixing or loading wear overalls, impervious gloves and eye/face protection. Wash hands and exposed skin after work.  
**STORAGE:** Store in original container tightly closed and in a locked, dry, cool, well ventilated area away from foodstuffs. When stored appropriately this product should show no significant degradation for two years from the date of manufacture. Contact the proprietor for further information about the use of this product if it is older than this.  
**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain spilled material and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled, absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.  
**PRODUCT DISPOSAL:** If possible dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots.  
**CONTAINER DISPOSAL:** Triple rinse container and add residue to mixture. If circumstances, especially wind direction permit, the empty containers may be burned, otherwise bury in a suitable land fill or dispose in an agricultural recycling scheme.  
**ENVIRONMENT:** Toxic to aquatic organisms. Avoid contamination of any water supply with product or empty container. Handle and apply with care, spray drift may cause severe damage to other desirable plants.  
**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If swallowed do NOT induce vomiting. If in eyes, immediately flush with plenty of water for at least 15 minutes. If irritation persists, get medical attention. For advice call a doctor or the National Poisons Centre (0800 764 766)

**GENERAL INSTRUCTIONS:**

- Hortcare Glyphosate 680 WSG is a foliar absorbed and translocated herbicide for control of emerged weeds only and is not residual.
  - Hortcare Glyphosate 680 WSG can be deactivated by soil particles and hard water containing calcium salts. If hard water cannot be avoided the addition of Primabuff BB5 is recommended.
  - Plants should be actively growing, free of stress with clean foliage at time of spraying.
- Hortcare Glyphosate 680 WSG and solutions should only be mixed, contained in or sprayed by equipment made from stainless steel, fibreglass, plastic, aluminium, brass and copper.
- WARNING:** A highly flammable gas may be formed from the contact of this product with galvanised or unlined steel.
- The effects of Hortcare Glyphosate 680 WSG may not be apparent for 3–7 days depending on the weather conditions, weed species and the herbicide rate used. Some perennial weeds may not show effects for 14–21 days.
  - Post treatment: A withholding period for grazing stock is not required (except where Ragwort is present), however it is recommended that grazing or cultivation be delayed for three days to allow for absorption/translocation of the herbicide.

**RESTRICTIONS:**

Do not spray if rain is likely within 6 hours. Do not allow spray contact with non target plants as severe injury may occur.

- Clean spray tank of previous chemical residues, preferably with a chemical residue remover.
- Half fill spray tank with clean water, add required amount of Hortcare Glyphosate 680 WSG then fill with clean water.
- Add surfactant where required.
- Agitate well before spraying.
- When tank mixing with other chemicals, add Hortcare Glyphosate 680 WSG after other water soluble products, but before flowables eg. Flowable Simazine.

**APPLICATION:****Boom equipment:**

Hortcare Glyphosate 680 WSG can be applied in spray volumes of up to 200 litres per hectare using fan nozzles at pressures in the range of 240–280 kPa. Boom height should be set so a double overlap of nozzle pattern is achieved at the top of the target plant.

**Aerial equipment:**

(Forest and non crop areas only) Hortcare Glyphosate 680 WSG can be applied by aircraft in spray volumes of up to 100 litres per hectare. Increase spray volumes in hilly terrain to ensure maximum target contact. DO NOT use in intensive horticultural cropping areas.

**Handgun and Knapsack:**

Ensure a fine spray pattern to give complete coverage. Spray to the point of run-off.

**Wiper equipment:**

Mix at the rate of 1 part (1 kg.) product with 4 parts (4 litres) of water. Mix only enough for immediate use. Plants must be clean and dry and the wiper fully saturated. Apply up and down slopes for effective applications. In cases of high weed density reduce speed and apply twice in opposing directions.

**CLEANING EQUIPMENT:**

All spray equipment including pumps, spray tanks, lines and nozzles, landing gear (aircraft) should be thoroughly washed with water after each day of spraying.

| SITUATION  | CROP                                  | COMMENTS  |
|--|---------------------------------------|---|
| <b>Drains and Waterways</b>  |                                       | 1. Do not spray until 75% of the weed is above water level.<br>2. Do not allow submergence for 6 hours post spraying.   |
| <b>Forestry</b><br>For control of all listed weeds prior to planting of forest or nursery or around established trees. |                                       | 1. For rates for weeds see Weed Table.<br>2. Do not allow spray contact with established trees.   |
| <b>Industrial</b><br>As a knockdown or selective if spot spraying.   |                                       | 1. Treat weeds as per Weed Table.   |
| <b>Market Gardens</b><br>As a knockdown prior to seeding, transplanting and after harvest clean-up.                    | All vegetables                        | 1. For best results do not disturb weeds by grazing or cultivation for one day post-spraying of annual weeds and 10 days post-spraying of perennial weeds.<br>2. Cultivate within 21 days of spraying to ensure control.<br>3. Do not sow until a satisfactory seed bed has been prepared.<br>4. An appropriate residual herbicide can be used as a tank mix with Hortcare Glyphosate 680 WSG.  |
| <b>Minimum Tillage</b><br>For total weed control prior to seeding.   | Cereal, pasture and leguminous crops. | 1. For best results do not disturb weeds by grazing or cultivation for one day post-spraying of annual weeds and 10 days post-spraying of perennial weeds.<br>2. To ensure control and avoid respraying newly germinated weeds, work sprayed area by full cultivation of the seeding operation within three weeks of spraying.<br>3. Do not sow until a satisfactory seed bed has been prepared.<br>4. For improved control of White Clover, tank mix with dicamba 20% ai at 1.5 L/ha. Observe plant back periods of dicamba for respective crop. |

| SITUATION   | CROP  | COMMENTS   |
|---|---|--|
| <b>Orchards and vineyards</b><br>As a knockdown prior to establishment or where plants are three years old or over. | Apple, citrus, grapevines, kiwifruit, pear and stonefruit | 1. Use a directed or shielded spray.<br>2. DO NOT let spray contact any green foliage or new growth.<br>3. Spray before bloom stage of crop.<br>4. Hortcare Glyphosate 680 WSG can be tank-mixed with an appropriate herbicide for residual control. |
| <b>Pre-harvest</b><br>For control of emerged weeds and as a clean-up to enhance harvesting.                         | Wheat, barley, oats and threshing peas                    | 1. Spray 7–12 days pre-harvest<br>2. Grain moisture should be below 30%.<br>3. Withholding period: seven days.<br>4. Do not spray seed crops.<br>5. Do not spray undersown crop.   |
| <b>Recreational areas</b><br>For weed control prior to establishment and as a clean-up around established areas.    | Lawns, ornamentals, parks and                             | 1. Established plants: use a directed or shielded spray or wiper around plants, avoiding any spray contact on green or growing points of plant.  |

- It is an offence to use this product on animals.
- It is an offence for users of this product to cause residues exceeding the relevant MRL in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards.

**RECOMMENDATIONS FOR USE**

| Weed   | Boom/aerial kg/ha            | Handgun g/100L           | Knapsack g/15L         | Mist Blower g/10L | Comments   |
|--|------------------------------|--------------------------|------------------------|-------------------|--|
| Annual weeds (seedlings)   | 0.5–1.0                      | 100                      | 15                     | 30                | Use the higher rate for larger weeds. For residual control add Gesatop 500 FW.   |
| Australian sedge   | 3–4.5 (aerial)               | 500                      | 75                     | 150               | Apply from November to March. Burn or slash from 30 days after treatment.  |
| Barberry   | —                            | 500                      | 75                     | 150               | Apply from flowering to late fruit stage (Jan–April). Regrowth should be 1.5 m tall before spraying.   |
| Barley grass   | 0.5                          | 100                      | 15                     | 30                | Apply when plants are at early seedhead stage (Sept–Dec). Add Gesatop 500 FW for residual control.   |
| Blackberry   | 4.5–10                       | 500–750                  | 75                     | 150               | Apply from flowering to fruiting stage (Dec–April) before frost occurs. For hard to kill blackberry, aerial application or no follow up planned, use the higher rate. Allow 6–10 weeks before slashing or burning.   |
| Boxthorn   | —                            | 700                      | 75                     | —                 | Apply to actively growing plants (Nov–April). Ensure complete coverage of dense thickets. Do not use extra surfactant or treat salt damaged bushes.  |
| Bracken/Broom  | 4.5 (+250 ml Force)          | 500 (+250 ml Force)      | 75 (30ml Force)        | 150 (+20ml Force) | Apply after bracken fronds have unfurled mid-Jan–June) but before frosts occur. For ground application to broom anytime, but for aerial application when broom is in full leaf.  |
| Browntop   | 1.5                          | 250                      | 40                     | 75                | Apply when plants 5–10cm high. For taller plants, graze or burn and allow regrowth of 5–10cm height before treatment.  |
| Buddleia   | 4.5                          | 500                      | 75                     | —                 | Apply using handgun anytime. Aerial: treat buddleia up to 2m high (Feb–April) using spray volume of 200–300L/ha.   |
| Californian thistle  | 2                            | 500                      | 75                     | 150               | Apply after flower bud development. Retreatment and/or cropping or pasture improvement may be necessary to restrict re-establishment from seed. Mowing thistles 10 days after spraying may assist control.   |
| Cleavers   | 0.75                         | 250                      | 40                     | 75                | Spray actively growing plants after most reach early seedhead.   |
| Couch  | 1.5–3                        | 500                      | 75                     | 150               | For suppression apply 2.4 litres/ha in spring and repeat in autumn. For best results apply 3–5 L/ha in autumn to active growth of at least 10cm where no previous cultivation has occurred for at least 6 months.  |
| Docks  | 2–4.5                        | 500                      | 75                     | —                 | Spray plants in spring or summer when actively growing and before seedheads have emerged. Use the lower rate for seedlings and the higher rate for mature plants. In pasture situations boom spray prior to re-seeding or establishing crops to restrict seedling establishment. Under trees or vines may be tank mixed with Gesatop 500 FW for residual seedling control.   |
| Floating sweet grass   | 3                            | 500                      | 75                     | 150               | Spray actively growing plants after most reach early seedhead. Spraying plants under drought stress may give reduced results.  |
| Gorse  | —                            | 500 (+250 ml Force)      | —                      | —                 | Apply anytime ensuring complete coverage of plants not stressed by drought, grazing or previous herbicide treatment.   |
| Indian doab  | 4.5                          | 500                      | 75                     | —                 | Apply at early seedhead stage before frost occurs.   |
| Johnson grass  | 3                            | 500                      | 75                     | —                 | Apply when actively growing.   |
| Kikuyu   | 3                            | 500                      | 75                     | 150               | Apply at early seedhead stage. On dense infestations cut and spray the regrowth.   |
| Mercer grass – aquatic – non-aquatic   | 4.5<br>3                     | 750<br>500               | 100<br>75              | 225<br>150        | Apply to actively growing plants. On dense infestations cut and spray the regrowth.  |
| Nodding thistle  | —                            | 1                        | 150                    | —                 | When applying by wiper ensure plants are actively growing (Oct–April) when at least 10cm of the plant can be wiped. A double pass is recommended and follow-up with spot treatments if necessary.  |
| Old man's beard  | —                            | 500–1.0kg                | 150                    | —                 | Apply Nov–Mar prior to first leaf browning. Use higher rates on stems over 1cm in diameter. If complete coverage is not possible plants should be cut at ground level in winter and the regrowth sprayed with the higher rate when plants are at least 50cm long (March).  |
| Pampas grass /Toetoe   | —                            | 500                      | 75                     | —                 | Spray spring–autumn. Reduced control may result if plants are in flower at the time of spraying. Ensure complete coverage.   |
| Paspalum   | 2–3                          | 500                      | 75                     | 150               | Spray at low rate if plants are at early seedhead stage. Use 5L/ha on mature vegetative plants before onset of frosts.   |
| Potato (self-set)  | 1.5                          | 250                      | 40                     | 75                | Spray actively growing plants after most reach early seedhead.   |
| Prairie grass  | 0.75                         | 100                      | 15                     | —                 | Apply at early seedhead stage.   |
| Ragwort  | 3                            | 500                      | 75                     | —                 | Spray when actively growing and ensure there is sufficient leaf area for herbicide uptake. When applying by wiper, use on plants 10–15cm above the pasture. For best results, a double pass is recommended with a follow up spot treatment if necessary. Caution: Ragwort becomes more palatable after treatment. Keep stock away from treated areas until plants brown off. |
| Ratstail   | 2.5                          | 500                      | 75                     | —                 | Apply at a spray volume of 200L/ha in autumn. In dry conditions delay spraying until sufficient green foliage is present.  |
| Rautahi (cutty grass)  | 3                            | 500                      | 75                     | 150               | Spray actively growing plants from Jan–March. Burning or slashing may begin 30 days after treatment following brown-off.   |
| Ring fern  | 0.5–1.5                      | 150                      | 25                     | —                 | For effective control use 2.4L/ha. For pasture manipulation apply 0.8–1.6 L/ha from Dec–April. Use higher rate for dense infestations. Burn 4–6 weeks after treatment.   |
| Rushes   | 3                            | 500                      | 75                     | 150               | Burning or slashing may begin 30 days after treatment following brown-off. Wiper application to be carried out in Nov–May.   |
| Ryegrass (annual, Italian, short rotation hybrids established < 8 mths Established > 8 mths) | 1.5–2 (+100ml/100L Force)    | 500 (+100 ml/100L Force) | 75 (+100ml/100L Force) | —                 | Spray actively growing plants with at least 5–10cm of green leaf. A higher rate may be necessary, based on the weed species present.   |
| Ryegrass (perennial)   | 0.75–1.5 (+100ml/100L Force) | 250 (+100ml/100L Force)  | 40 (+15ml Force)       | —                 | Spray actively growing plants 3–10cm high. Use lower rate from Jan–July when cultivation is to follow spraying, and the higher rate Aug–Dec. For pasture renewal select a suitable rate that reflects weed spectrum present.   |
| Sweet briar  | 6 (+250ml/100L Force)        | 500 (+200ml Force)       | 75 (+30ml Force)       | —                 | Spray when plants are in late flowering to early leaf yellowing stage. Ensure full leaf coverage.  |
| Tall fescue  | 3                            | 500                      | 75                     | 150               | Apply to active growth in Jan–Mar.   |
| Willow   | 4.5                          | 500                      | 75                     | 150               | Apply before leaf fall begins (Jan–April). Good coverage is essential for best results.  |
| Yarrow   | 1.5–3                        | —                        | —                      | —                 | Apply to plants with 5–10cm of leaf. For best results cultivate 10 days after treatment. Use the low rate when a crop to be drilled is competitive with yarrow and the higher rate when it is a poor competitor.   |

Registered pursuant to the ACVM Act 1997, No P008533-01.

See [www.foodsafety.govt.nz](http://www.foodsafety.govt.nz) for registration conditions.

Approved pursuant to HSNO Act 1996, Approval code: HSR 000219

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

**WARRANTY:** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

REGISTERED PROPRIETOR:

**Grosafe**  
CHEMICALS LTD

20 JEAN BATTEN DRIVE  
MT MAUNGANUI  
FREE PHONE 0800 220 002  
FAX 07 578 6241  
EMAIL: [info@grosafe.co.nz](mailto:info@grosafe.co.nz)  
[www.grosafe.co.nz](http://www.grosafe.co.nz)

**NET CONTENTS:** 0.5kg (50 x 10g), 1kg (40 x 25g), 5kg (50 x 100g), 20kg (20 x 1kg), 20kg (4 x 5kg), 100kg (100 x 1kg), 100kg (20 x 5kg), 10kg

Hortcare® is a registered trade mark of Grosafe Chemicals Ltd.



**ECOTOXIC**  
AVOID ENVIRONMENTAL CONTAMINATION

# FORCE™ PENETRANT

An organo-silicon surfactant for improved penetration  
and adhesion of agricultural and horticultural  
herbicides and other pesticides

ACTIVE INGREDIENT: contains 750g/litre polyether modified polysiloxane

**NET CONTENTS: 20 litres**



**HSNO HAZARD CLASSIFICATION: 6.1D, 6.3A, 6.4A, 9.1B**

**WARNING:** May cause skin irritation, may cause eye irritation. Harmful if swallowed.

**PERSONAL PROTECTION:** When mixing or loading wear overalls, impervious gloves and eye/ face protection. Wash hands and exposed skin after work.

**STORAGE:** Store in original container tightly closed and in a locked, dry, cool, well ventilated area, away from foodstuffs. When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture. Contact the proprietor for further information about the use of this product if it is older than this.

**SPILLS AND DISPOSAL:** When dealing with spills wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section. Contain and absorb with suitable inert absorbent material and store in properly labelled, sealed drums for safe disposal. If spray mixture is spilled absorb and collect in drums as above. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

**PRODUCT DISPOSAL:** If possible dispose of by using according to the label, otherwise dispose of in an approved landfill or bury below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

**CONTAINER DISPOSAL:** Triple rinse container and add residue to mixture. If circumstances, especially wind direction, permit the empty containers may be burned, otherwise bury in a suitable land fill or agricultural recycling scheme.

**ENVIRONMENT:** Toxic to aquatic organisms; avoid contamination of any water supply with product or empty container.

**SAFETY DATA SHEET:** A safety data sheet is available from Grosafe Chemicals Ltd.

**FIRST AID:** If swallowed, give a glass or two of water but do NOT induce vomiting. If in eyes, immediately flush with plenty of water for at least 15 minutes. If irritation persists, get medical attention. If on skin, remove contaminated clothing immediately. Wash skin immediately with plenty of soap and water. In case of inhalation of spray remove to fresh air. Get medical attention if patient is in distress. For advice call a doctor or the National Poisons Centre ( 0800 764 766 )

**GENERAL INFORMATION:**

Force Penetrant increases the reliability of brush weed herbicides on weeds that are dormant, or stressed due to hot, dry, frosty or dusty conditions or when previously grazed or mechanically slashed. Force Penetrant also increases the visibility of the spraymix on the plant. Force Penetrant may also be used as a general purpose wetting agent with non-selective herbicides, including glyphosate in non-crop situations where the addition of a wetting agent is recommended. The addition of Force Penetrant can reduce the rain-free period of brush weed herbicides. Force Penetrant can be used with insecticides and fungicides see the pesticide product label for use rates.

**RECOMMENDED RATES:**

**Aerial application:** Add Force Penetrant to the spraymix at a minimum rate of 1.5 litres per hectare. For brush weed applications use a minimum of 400 litres of spraymix per hectare.

**Broadcast spraying:** Add 100 mls Force Penetrant per 100 litres of spraymix.

**Handgun, Knapsack, Mistblower:** Add 100 to 200 mls Force Penetrant per 100 litres of spraymix.

**MIXING INSTRUCTIONS:** To minimize foaming add the required amount of Force Penetrant to the nearly full spray tank, after other products have been added. Agitate or recirculate before spraying.

**Marker Dyes:** Force Penetrant is compatible with most commonly used water based marker dyes.

**USE SITUATIONS:****With glyphosate formulations (Firstrate™, Hortcare™ Glyphosate 360, 680)**

| Application method   | Rate per 100 litres water | Comments   |
|----------------------|---------------------------|--|
| Boom                 | 100ml                     | Particularly beneficial for the control of ryegrass                      |
| Handgun, knapsack    | 100–200ml                 | Use higher rate under unfavourable conditions or with hard to kill weeds |
| Aerial:              |                           |  |
| General weed control | 200ml                     |  |
| Bracken, Blackberry  | 250ml                     | Use a minimum of 500ml per hectare                                       |
| Broom                | 500ml                     | Use a minimum of 2L per hectare  |
| Gorse                | 750ml                     | Use a minimum of 2L per hectare  |

**With metsulfuron (Reply™ 200, Reply™ 600)**

|                   |               |   |
|-------------------|---------------|---|
| Handgun, knapsack | 100–200ml     | Use higher rate under unfavourable conditions |
| Aerial, boom      |               |   |
| Gorse             | 500ml         | Use a minimum of 2L per hectare               |
| Kanuka, Manuka    | 2.0 litres/ha |   |

**With Brushkillers (Reclaim™ Brushkiller, Reclaim™ Gold)**

|                   |               |   |
|-------------------|---------------|---|
| Handgun, knapsack | 100–200ml     | Use higher rate under unfavourable conditions |
| Aerial, boom      |               |   |
| Gorse, Broom      | 2.0 litres/ha |   |

Approved pursuant to HSNO Act 1996, Approval Code: HSR 002503  
See [www.epa.govt.nz](http://www.epa.govt.nz) for approval conditions

**WARRANTY:** This formulation is warranted to contain the specified active ingredient within accepted analytical tolerance when packed. The user bears the risk for damage resulting from factors beyond the manufacturer's control. The manufacturer declines all liability for damage resulting from improper storage or use of the product.

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**Batch No:**

**Date of manufacture:**

Force™ is the registered trademark of Grosafe Chemicals Ltd

