

POISON

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

TITAN

BESUTO 480

LIQUID HERBICIDE

ACTIVE CONSTITUENT: 480 g/L PYROXASULFONE

GROUP **15** HERBICIDE

For the pre-emergence control of Annual Ryegrass, Barley Grass, Annual Phalaris, Silver Grass and Toad Rush and suppression of certain grass weeds in Wheat (not Durum wheat), Triticale and certain winter legume crops as specified in the Directions For Use table.

APVMA Approval No.: 90984/130663

Pack Size: 1-55L; 60-110L



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IN A TRANSPORT EMERGENCY

DIAL 000

POLICE OR FIRE BRIGADE

TRANSPORT AND HANDLING
NOT A DANGEROUS GOOD
ACCORDING TO THE AUSTRALIAN
DANGEROUS GOODS (ADG) CODE
FOR TRANSPORT BY ROAD AND RAIL

DIRECTIONS FOR USE

Restraints: DO NOT apply with aircraft.

DO NOT plant Durum Wheat (*Triticum durum*) after the application of TITAN Besuto 480 Liquid Herbicide (refer to Crop Rotation Recommendations for further advice).

DO NOT apply if heavy rain has been forecast within 48 hours.

DO NOT apply unless incorporation by sowing (IBS) can be performed within 3 days of application.

DO NOT apply to waterlogged soil.

DO NOT allow first irrigation tailwater from land treated with TITAN Besuto 480 Liquid Herbicide to enter aquatic and wetland areas including aquacultural ponds, surface streams and rivers.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at apvma.gov.au/spraydrift

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- Spray droplets not smaller than a COARSE spray droplet size category
- Minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Buffer zones for boom sprayers	
Application Rate	Mandatory downwind buffer zones
210mL/ha	Natural aquatic areas
	80 metres

CROP	WEED	RATE	CRITICAL COMMENTS
Wheat (not Durum wheat) and Triticale Chickpeas, Field Peas, Lentils, Lupins	Annual Ryegrass (<i>Lolium rigidum</i>), Annual Phalaris or Paradoxa Grass (<i>Phalaris paradoxa</i> only), Barley Grass (<i>Hordeum leporinum</i>), Silver Grass (<i>Vulpia bromoides</i> , <i>Vulpia myuros</i>), Toad Rush (<i>Juncus bufonius</i>)	210mL/ha	<p>Apply pre-sowing and incorporate by sowing (IBS) using knife points and press wheels or narrow points and harrows. For best results apply just before sowing (refer to Interval between Application and Sowing in GENERAL INSTRUCTIONS).</p> <p>Avoid throwing treated soil into adjacent crop rows when sowing with knife points and press wheels. To reduce the risk of crop effects refer to Crop Safety in GENERAL INSTRUCTIONS.</p> <p>Cultivation: To optimise weed control apply directly to uncultivated soil. Weed control may be greatly reduced where weed seeds have been buried by cultivation prior to sowing.</p> <p>Rainfall soon after application:</p> <ul style="list-style-type: none"> • Weed control may be adversely affected by insufficient rainfall within 7 to 10 days after application. Adequate rainfall is necessary to facilitate uptake of the product by the germinating weed seeds, however the quantity of rainfall required will depend on many factors including stubble load, soil type, the existing soil moisture at sowing, the pattern of rainfall and other considerations. • In soils prone to leaching, rainfall which is sufficiently heavy to cause movement of the herbicide out of the weed seed zone may lead to reduced weed control. <p>Other factors which may adversely affect weed control include:</p> <ul style="list-style-type: none"> • Uneven application. • Application to ridged or cloddy soil. • Stubble, plant residue or other ground cover particularly where this exceeds 50%. • Germinated and emerged weeds that are not controlled by a knockdown herbicide. <p>The factors above, when combined, may substantially reduce weed control. Competition provided by the crop can assist with the final weed control achieved by TITAN Besuto 480 Liquid Herbicide. Chickpea, Field Pea, Lentil and Lupin crops may provide less competition than cereal crops, hence weeds that survive the application of TITAN Besuto may grow taller (relative to the height of the crop), tiller more and generally give the appearance that weed control is poorer compared to weed control in Wheat or Triticale.</p>
	<p>Suppression* of: Great Brome (<i>Bromus diandrus</i>), Wild Oat (<i>Avena fatua</i>)</p> <p>* Refer Suppression of Great Brome and Wild Oat in GENERAL INSTRUCTIONS for further details</p>		

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

WITHHOLDING PERIODS

Harvest:

All crops: NOT REQUIRED WHEN USED AS DIRECTED

Grazing/Stockfood:

Wheat and Triticale: DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 6 WEEKS AFTER APPLICATION

Chickpeas, Field Peas, Lentils, Lupins: DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 8 WEEKS AFTER APPLICATION



GENERAL INSTRUCTIONS

TITAN Besuto 480 Liquid Herbicide is a residual, soil applied, pre-emergent herbicide. It is absorbed by the roots and to a lesser extent by the shoots of germinating weeds, and works by inhibiting growth in the meristematic area. Weed control is optimised when TITAN Besuto 480 Liquid Herbicide is applied evenly to moist soil just prior to incorporation by sowing and there is sufficient rainfall soon after sowing to ensure uptake of the herbicide by germinating weeds. Weed control may be greatly reduced where weed seeds have been buried by cultivation prior to application. Weed control may also be reduced where there is insufficient soil moisture for herbicide uptake or in soils prone to leaching where rainfall is sufficiently heavy to cause movement of the herbicide out of the weed seed zone. TITAN Besuto 480 Liquid Herbicide will not reliably control emerged weeds. A knockdown herbicide should be used to control emerged weeds at sowing.

Crop Safety

TITAN Besuto 480 Liquid Herbicide generally shows good crop selectivity when used as directed. The following directions will help minimise the risk of crop effects:

- DO NOT plant Durum Wheat after the application of TITAN Besuto 480 Liquid Herbicide as it may be severely damaged. Refer to Crop Rotation Recommendations for further advice.
- When incorporation is by sowing with knife points and press wheels avoid throwing treated soil into adjacent crop rows.
- DO NOT use a combination of both press wheels and a covering device such as harrows or chains when sowing.

The potential for crop damage is increased when there is substantial rainfall after the application of TITAN Besuto 480 Liquid Herbicide, especially where this leads to temporary waterlogging. Situations which lead to concentration of herbicide in the planting row, or movement of herbicide to the depth of the crop seed, may also increase the potential for crop damage. This includes the following scenarios:

- Where deep furrows are formed by the sowing operation, soil movement into the crop row may occur due to wind or heavy rainfall soon after sowing resulting in concentration of herbicide in the crop row.
- Where soil has a high potential for leaching, heavy rainfall between application and crop emergence may result in movement of herbicide into the crop seed zone.

Other circumstances which may increase the potential for crop damage include where TITAN Besuto 480 Liquid Herbicide is applied in tank mixes with other herbicides, where crop vigour is reduced due to factors such as frosts, insect attack or crop disease, when weather damaged seed is used and/or with the use of some fungicide seed treatments especially in conjunction with crop varieties with short coleoptile length. A combination of individual factors which increase the potential for crop damage may increase the extent of crop damage.

Chickpeas, Field Peas, Lentils and Lupins:

- TITAN Besuto 480 Liquid Herbicide may occasionally delay emergence or flowering of winter legume crops.
- Luxor variety of Albus Lupin has been identified as potentially more sensitive to TITAN Besuto 480 Liquid Herbicide than other Lupin varieties, particularly in situations of late sowing and/or wet conditions around the time of sowing.

Incorporation by Sowing

TITAN Besuto 480 Liquid Herbicide should be applied prior to sowing and incorporated by sowing using knife points and press wheels or narrow points and harrows. When incorporation is by knife points and press wheels, weeds germinating in the seed row may not be controlled. Weeds germinating from depth, weeds just about to emerge or weeds that have emerged which are not controlled by a knockdown herbicide at sowing may not be controlled by TITAN Besuto 480 Liquid Herbicide.

Interval between Application and Sowing

Incorporate by sowing as soon as practicable after the application of TITAN Besuto 480 Liquid Herbicide, but no later than 3 days after application.

Sandy Soils

Weed control may be reduced in soil prone to leaching where rainfall after application and sowing is sufficiently heavy to cause movement of the herbicide out of the weed seed zone.

Suppression of Great Brome and Wild Oat

TITAN Besuto 480 Liquid Herbicide is most effective when grass weed seeds are present on or very close to the soil surface at the time of application. For this reason, it is recommended that TITAN Besuto 480 Liquid Herbicide is applied to uncultivated soil. As the depth of weed seeds increases, control from TITAN Besuto 480 Liquid Herbicide tends to decrease. It is rare that all

Great Brome and Wild Oat weed seeds will be on the soil surface at the time of TITAN Besuto 480 Liquid Herbicide application, especially considering that these seeds may remain viable in the soil for several seasons. Plants may germinate from seeds buried by the sowing operation in previous seasons, by livestock or by weed seed self-burial mechanisms particularly in some soil types (eg. cracking clays and sand).

Therefore only partial control or suppression of the Great Brome or Wild Oat population should generally be expected. In these situations, a follow up application with a suitable post-emergent herbicide may be required to control remaining plants.

MIXING

Shake contents well before use. Ensure sprayer, inline filters and nozzle filters are clean before preparing the spray mixture. Fill the spray tank to at least 50% full with water and with the agitators in motion, add the correct amount of TITAN Besuto 480 Liquid Herbicide directly to the spray tank. Complete filling the tank with agitators in motion. Agitation must continue before and during spraying.

DO NOT allow mixtures to stand in the tank over night or without agitation.

When other products are to be applied in combination with TITAN Besuto 480 Liquid Herbicide, always add any dry products (WP, WG) to the tank slowly first, allowing at least 10 minutes of constant agitation for thorough dispersion, before adding TITAN Besuto 480 Liquid Herbicide to the spray tank. Allow enough time under constant agitation (at least 10 minutes) for TITAN Besuto 480 Liquid Herbicide to thoroughly disperse before adding other liquid products (eg. EC or SL formulations) to the tank.

APPLICATION

Ensure complete and even spray coverage of the soil is achieved. Poor spray coverage may result from application to ridged or excessively cloddy soil or in situations of high stubble, plant residue or other ground cover. A significant reduction in weed control may result where stubble, plant residue or other ground cover exceeds 50% and in situations where a 'cold' or incomplete burn of stubble results in a mass of material which can act as a physical barrier between the herbicide and germinating weeds – this can be exacerbated in header trails where there may be greater weed seed numbers and higher levels of plant residue. Weed control can be particularly affected where TITAN Besuto 480 Liquid Herbicide is applied to a barrier of stubble, plant residue or other ground cover and there is insufficient following rainfall to transfer TITAN Besuto 480 Liquid Herbicide to the soil surface and the germinating weed seeds.

EQUIPMENT

Ground Sprayers: Standard boom sprayers only are recommended and must be fitted with by-pass or mechanical agitation. It is recommended that 50 to 100L water/ha is applied with spray droplets of a COARSE droplet size category. In some situations (eg. high stubble loads) high water volumes may give higher levels of weed control. The use of coarse mesh inline filters is recommended.

Aircraft: DO NOT apply TITAN Besuto 480 Liquid Herbicide by aircraft.

COMPATIBILITY

Crop damage seen in adverse conditions, particularly wet or waterlogged conditions (refer Crop Safety above) may be exacerbated when TITAN Besuto 480 Liquid Herbicide is used in conjunction with other herbicides that may also cause crop damage in such conditions.

Always refer to the crop tolerance, plantback restrictions, rate recommendations and other Directions For Use on the label of the tank mix partner.

Refer to **Mixing** section above for advice on preparing tank mixtures with TITAN Besuto 480 Liquid Herbicide. Mixtures with products containing paraquat (eg. Gramoxone and Spray.Seed) require particular attention to these instructions, including ongoing agitation to ensure TITAN Besuto 480 Liquid Herbicide remains in suspension in the spray tank.

For advice on compatibilities not listed below, contact TITAN AG.

For application prior to planting Wheat or Triticale

TITAN Besuto 480 Liquid Herbicide is compatible with any one of the following herbicides: Ally®, Avadex® Xtra, Cadence® WG, Cobber® 475, Diuron 900WG, Dual® Gold, Estericide® Xtra 680, Glean®, glyphosate (Glyphosate CT, Roundup PowerMax®), Goal® EC, Gramoxone® 250, Hammer®, Logran®, Logran B-Power®, Monza®, Spray.Seed®, Striker®, Trifluralin 480 and Triflur X®.

TITAN Besuto 480 Liquid Herbicide is compatible with mixtures of glyphosate (Glyphosate CT, Roundup PowerMax) with any one of the following herbicides: Ally, Cadence WG, Estericide Xtra 680, Goal EC, Hammer, Logran B-Power, Monza and Striker.



TITAN Besuto 480 Liquid Herbicide is compatible with any one of the following insecticides: Fastac® and Le-mat®.

For application prior to planting Chickpeas, Field Peas, Lentils or Lupins Knockdown herbicides, some “spike” herbicides and insecticides shown to be compatible with TITAN Besuto 480 Liquid Herbicide prior to planting cereals, should also be suitable prior to planting Chickpeas, Field Peas, Lentils or Lupins eg. glyphosate (Glyphosate CT, Roundup PowerMax®), Goal® EC, Gramoxone® 250, Hammer®, Spray.Seed®, Fastac® and Le-mat®.

Note that plantback restrictions may render some herbicides unsuitable for mixing with TITAN Besuto 480 Liquid Herbicide where legume crops are to be planted.

Limited studies have shown that the following residual herbicides appear to be compatible with TITAN Besuto 480 Liquid Herbicide when used according to label directions.

Chickpeas: Trifluralin 480 EC, Simazine 900 WG, Trifluralin + Simazine, Terbyne® 750 WG

Field peas: Trifluralin 480 EC, Stomp® 440 EC, Bladex® 900 WG, Terbyne® 750 WG

Lentils: Stomp® 440 EC, Terbyne® 750 WG

Lupins: Trifluralin 480 EC, Simazine 900 WG, Trifluralin + Simazine, Simazine + Atrazine 900 WG, Stomp® 440 EC, Terbyne® 750 WG

Sprayer Cleanup

Following the use of TITAN Besuto 480 Liquid Herbicide, the spraying equipment should be thoroughly cleaned before it is used for application of other products. Cleaning should occur immediately following application of TITAN Besuto 480 Liquid Herbicide. The spray unit should first be completely emptied. The sprayer, including all filters and lines, should be thoroughly rinsed with water, to remove all traces of product. Ensure that the sprayer clean-up is carried out in an area that is clear of waterways, desirable vegetation and tree roots. If using TITAN Besuto 480 Liquid Herbicide with a tank-mix partner, refer to the sprayer clean-up instructions for the other product, which may be more rigorous than those for TITAN Besuto 480 Liquid Herbicide.

Crop Rotation Recommendations

TITAN Besuto 480 Liquid Herbicide breaks down by microbial degradation, which is favoured by warm, moist aerobic soil. Minimum recropping intervals (months after TITAN Besuto 480 Liquid Herbicide application) have been established for TITAN Besuto 480 Liquid Herbicide to minimise the risk of damage to following crops (see table below). However, environmental and agronomic factors make it impossible to eliminate all risk and therefore the potential for damage to following crops exists. Rainfall of less than the minimum interim rainfall required (see table below) may result in extended recropping intervals. Interim rainfall is the total rainfall between the application of TITAN Besuto 480 Liquid Herbicide and planting of the particular following crop. For recropping with winter crops, where a minimum of 250mm of interim rainfall is required, if rain from application to the end of spring is less than 125mm and isolated heavy summer and autumn falls and break rains are required to achieve the 250mm interim rainfall, then extended recropping intervals may apply.

Crops	Recropping recommendation	
	Minimum recropping interval	Minimum interim rainfall
Wheat (not Durum Wheat) and Triticale	0 months	0mm
Cotton, Maize, Mung Beans, Sorghum, Soybeans and Sunflowers	5 months	150mm
Barley, Canola*, Chickpeas**, Faba Beans, Field Peas**, Lentils**, Lupins**, Vetch and Subterranean Clover	9 months	250mm
Durum Wheat, Oats, Lucerne and Medic	21 months	550mm

* For Canola sown the year after the application of TITAN Besuto 480 Liquid Herbicide there may occasionally be some crop stunting but no yield reductions have been measured.

** Chickpeas, Field Peas, Lentils and Lupins can be sown immediately after the application of TITAN Besuto 480 Liquid Herbicide where TITAN Besuto 480 Liquid Herbicide has not already been incorporated. However, where TITAN Besuto 480 Liquid Herbicide has been incorporated into the soil, for example, by a previous sowing operation for a subsequently failed crop, these legume crops should not be sown for at least 9 months after the application of TITAN Besuto 480 Liquid Herbicide.

For advice on crops and situations not listed above, contact TITAN AG Pty Ltd.

RESISTANT WEEDS WARNING

Titan Besuto 480 Liquid Herbicide is a member of the isoxazoline group of herbicides and has the inhibitor of very long chain fatty acids (VLCFA inhibitors) mode of action. For weed resistance management TITAN Besuto 480 Liquid Herbicide is a Group 15 herbicide. Some naturally-occurring weed biotypes resistant to TITAN Besuto 480 Liquid Herbicide, and other Group 15 herbicides, may exist through normal genetic variability in any weed population. These resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by TITAN Besuto 480 Liquid Herbicide or other Group 15 herbicides.

DO NOT rely exclusively on TITAN Besuto 480 Liquid Herbicide for weed control. Use as part of an integrated weed management program involving herbicides with other modes of action and non-chemical methods of control. CropLife Australia resistance management strategies are available from your local agricultural chemical supplier or at the CropLife Australia website (www.croplifeaustralia.org.au). Refer to these strategies for details of how to manage the build-up of resistant weeds on your farm.

Since occurrence of resistant weeds is difficult to detect prior to use TITAN AG Pty Ltd accepts no liability for any losses that may result from the failure of TITAN Besuto 480 Liquid Herbicide to control resistant weeds.

PRECAUTIONS

Re-entry Period: DO NOT allow entry into treated fields until the spray has dried, unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with this product or used containers. DO NOT apply if heavy rain has been forecast within 48 hours. DO NOT apply unless incorporation by sowing (IBS) can be performed within 3 days of application. DO NOT apply to waterlogged soil.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply under weather conditions, or from spraying equipment, that may cause spray to drift onto non-target plants, cropping lands or pastures.

Undersown Pasture Species: DO NOT undersow with pasture species (legumes or grasses) following the application of TITAN Besuto 480 Liquid Herbicide.

STORAGE AND DISPOSAL

Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight.

1 to 55 litre containers: Triple 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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available bury the empty container 500mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product. DO NOT re-use container for any other purpose.

60 to 110 litre containers: If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty container by pumping through dry-break connection system. DO NOT attempt to breach the valve system or the filling point, or contaminate the container with water or other products. Ensure that the coupler, pump, meter and hoses are disconnected, triple rinsed and drained after each use. When empty, or contents no longer required, return the container to the point of purchase. This container remains the property of TITAN AG Pty Ltd.

SAFETY DIRECTIONS

May irritate the eyes. Avoid contact with eyes. When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length chemical resistant gloves. When using the prepared spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing). Wash hands after use. After each day's use wash gloves and contaminated clothing.

FIRST AID

If poisoning occurs contact a doctor or Poisons Information Centre. Phone Australia 131126; New Zealand 0800 764 766.

SAFETY DATA SHEET

Additional information is listed in the safety data sheet (SDS). A safety data sheet for TITAN Besuto 480 Liquid Herbicide is available from TITAN AG Pty Ltd on request. Call Customer Service on (02) 9999 6655 or visit titanag.com.au



CONDITIONS OF SALE: TITAN AG Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on TITAN AG's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of TITAN AG Pty Ltd has any authority to add to or alter these conditions.

Additional statements required by Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia: Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects. Precautionary Statements: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. IF exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell. Collect spillage. Store locked up. Dispose of contents/container in accordance with local/regional/national regulations.

