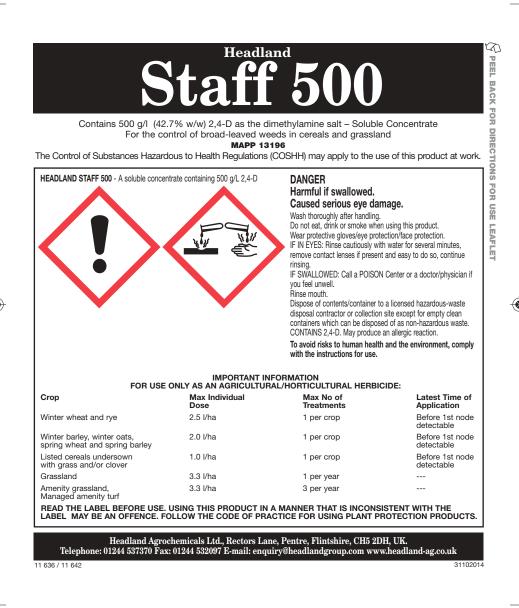
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DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the product label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

RESTRICTIONS

Headand Staff 500 is active at low concentrations. **DO NOT** spray in windy conditions as the spray drift may cause damage to neiphbouring crops. The following crops are particularly susceptible: beet, brassicae, (e.g. turnips, swedes, oilseed rape) and most market garden crops including lettuce and tomatoes under glass, pears and vines.

WASH EQUIPMENT thoroughly with water and wetting agent or liquid detergent immediately after use. Spray out, fill with clean water and leave overright. Spray out again before storing or using for another product. Traces of product can cause harm to susceptible crops sprayed later.

Headland Staff 500 may be applied to grassland or turf that has been established for a minimum of 12 months.

DO NOT apply during rain or if rain is expected.

DO NOT roll or harrow within a few days before or after applying Headland Staff 500. DO NOT apply immediately before or after sowing any crop.

DO NOT plant succeeding crops within 3 months of applying Headland Staff 500.

DO NOT mow or roll turf or amenity grassland for 4 days before or after application. The first 4 movings after treatment must be composited for at least 6 months before use. DO NOT treat cereals, grass or turf suffering from stress caused by drought, disease or other adverse factors such as frequing conditions.

Ragwort is an injurious weed and those who permit it to grow unchecked on their land are liable to prosecution under the Weeds Act 1959.

Agricultural grassland destined for hay or silage in the spring should be sprayed the previous autumn.

CROP SPECIFIC INFORMATION

Rate of Application

Cereals

Apply Headland Staff 500 in 100-1000 litres of water per hectare using any standard high or low volume sprayer. Recommended rates are given in the weed susceptibility table for cereals below. It is important not to exceed the maximum safe dose as follows:

Crop	Maximum Dose	
Winter Cereals:		
Wheat or Rye	2.5 litres per hectare	
Barley or Oats	2.0 litres per hectare	
Spring Cereals: Wheat or barley	2.0 litres per hectare	

Undersown Cereals

For cereals undersown with grass and/or clover but not lucerne. **DO NOT** spray with Headland Staff 500 before undersowing. Experience has shown that when weeds and cereals form a cancy, undersown crops may be safely treated using not more than 1.0 line per heatra et low volume. Overs should have developed two to three true leaves before spraying. Red Clovers may be damaged.

Grassland (non-amenity uses)

Do not treat where clovers' or other legumes form an important part of the sward. Grassland may be treated with 2.8 - 3.3 litres per hectare of Headland Staf 500 according to the weeds present. Recommended rates are given in the weed susceptibility table for grassland below. Clovers will receive a check. Top dressing ten days before treatment is recommended to assit kill of weeds and subsequent recovery of the sward.

Amenity Grassland and Managed Amenity Turf

Amenity orgassland and managed amenity turf may be sprayed with 2.8 - 3.3 l/ha of Headland Staff 500. The expected levels of weed control are detailed in the weed susceptibility table for amenity uses. Clovers will receive a check. Top dressing ten days before treatment is recommended to assist kill of weeds and subsequent recovery of the sward.

TIME OF APPLICATION

Spray weeds when the crop is actively growing. In general annual weeds are more susceptible at the seedling stage and perennials when the flower bud is forming. Timing of cereal spray must be determined by the stage of the crop growth.

Winter cereals

Spray in the spring from the leaf sheaf erect stage but before the first node detectable stage.

Spring cereals

Spray from the five-leaf fully expanded stage but before the first node detectable stage.

Grassland, Amenity Grassland and Managed Amenity Turf

Spray perennial weeds during their period of maximum growth, usually when the flower buds are beginning to form. The responses of perennial weeds to treatments are variable; often only the aerial parts are killed but suppression may also occur. The recovery of weeds will be reduced if the crop is growing vigorously at the time of treatment. A maximum of 3 applications per year are permitted. There must be an interval of at least 28 days between separate treatments with Headland Staff 500.

Note: When herbicides with the same mode of action are used repeatedly over several years in the same field, selection of resistant biotypes can take place. These can propagate and may become dominant. A weed species is considered to be resistant to a herbicide if it survives a correctly timed treatment at the recommended rate. A strategy for preventing and managing such resistance should be adopted. This should include integrating herbicides with a programme of cultural control measures. Guidelines have been produced by the Weed Resistance Action Group and copies are available from HIGCA, CPA, your distributor, crop advisor or manufacturer.

WEED SUSCEPTIBILITY TABLE - CEREALS

MS = Moderately susceptible

ETL = Expanded True Leaves

MR = Moderately resistant

+ = Aerial growth only

R = Resistant

Weeds	Rate/ha	Level of Control
Black Mustard, Charlock	0.71	S (Cotyledon – Early flower bud)
Fat-Hen, Field Penny-cress, Hairy Tare, Treacle Mustard, White Mustard	1.41	S (Cotyledon - Early flower bud)
Shepherd's-purse, Small Nettle, Wild Radish	1.41	S (Cotyledon – 8 ETL)
Corn Buttercup	1.41	S (Cotyledon – 2 ETL) or MR (4 ETL – Early flower-bud)
Common Orache, Common Poppy, Field Forget-me-not, Prickly Sow-thistle,		
Smooth Šowthistle, Wild Turnip	1.41	MS (Cotyledon – 2 ETL) or MR (4 ETL – Early flower bud)
Black-bindweed, Black nightshade, Bugloss, Common field speedwell, Common field speedwell, Common Funitory, Common Mouse-ear, Dove's-foot Cranès-Bill, Field Gromwell, Groene Field Speedwell, Groundes, Ing-leaved speedwell, Knotgrass, Pale Persecaria, Redshark, Scarlet Pimpernel, Shepherd's-Neede, Sunspurge, Viper's-bugos, Viall speedwell,	1.41	MR (Cotyledon - 2 ETL) or R (4 ETL - Early flowerbud)
Common Orache, Common Poppy, Smooth Sow-thistle	2.01	S (Cotyledon – 4 ETL) or MR (6 ETL – early flower bud)
Knotgrass, Scentless Mayweed	2.0	MR (Cotyledon – 2 ETL) or R (4 ETL – Early flower-bud)
Creeping Thistle†	2.0 - 2.5	S (Cotyledon - Early flower bud)
S = Susceptible		

WEED SUSCEPTIBILITY TABLE - AGRICULTURAL GRASSLAND

Weeds Autumn hawkbit, Creeping buttercup (1), Plantains	Rate/ha 2.8	Comments Susceptible – consistently good control of both shoots and roots
Cat's ear, Common Knapweed, Common Nettle, Creeping Thistle (2), Curled dock (4) Daisy, Dandelion, Meadow buttercup (1), Self-heal, Spear thistle, Soft rush (5)	2.81	Moderately susceptible – Aerial growth usually killed and a useful measure of long-term control obtained under suitable conditions.
Common ragwort (7), Field bindweed (9)	3.3	Moderately susceptible – Aerial growth usually killed and a useful measure of long-term control obtained under suitable conditions.
Broadleaved dock (4), Bulbous buttercup (3), Common ragwort (6), Common Sorrel (4), Dwarf thistle, Hard rush, Horsetails (8), Meadowsweet, Perennial sow-thistle, Sheep's sorrel (4), Wild onion, Yarrow. Yellow rattle	2.81	Moderately resistant – Variable effect of aerial growth, appreciable long-term control unlikely.

1 Treat in spring or early summer

2 Treat at early flower bud stage

- 3 Treat in the autumn or on new leaf in the spring
- 4 Treat either pre-flowering in May or any time after defoliation when growing vigorously (use 1.6 l/ha on seedling dock species).

5. Treat before flowering and cut 4 weeks before or after treatment to improve control. 6 Treat before flowering when flower shoot is developing rapidly and seedlings and rosettes

are growing strongly 7. Treatment will normally kill plants at all stages of growth up to the early bud stage. For best levels of control, treat in April - June when rosettes are growing strongly but before flower-buds are well-formed.

8. Threat when growing well, in May or early June. Top growth is removed or considerably reduced for the season of treatment. In grassland for hay or silage, shoot kill may be obtained by using 2.0 l/ha two weeks before cutting

9. In order to obtain maximum effect in the year after treatment, spraving should be delayed until the shoots are well developed.

WEED SUSCEPTIBILITY TABLE - AMENITY GRASSLAND AND MANAGED AMENITY TURF

Weeds Creeping buttercup, Mouse-eared hawkweed, Plantains, Thrift	Rate/ha 2.8	Comments Susceptible – consistently killed by one application
Common ragwort ¹	3.3 L	Moderately Susceptible (Sometimes killed by one application, but may require a further application to give complete control.)
Bulbous buttercup, Cats-ear, Common chickweed, Common ragwort, Common sorrel, Curled dock, Daisy, Dandelion, Dwarf thistle, Hawkbits, Heath bedstraw, Marsh pennywort, Sea-milkwort, Sheep's sorrel, Smooth hawk's-beard, Stork's-bill	2.8	Moderately susceptible – sometimes killed by one application but may require a further application to give complete control.
Common mouse-ear, Creeping cinquefoil, Lesser celandine, Procumbent pearlwort, Self-heal, Silverweed, Yarrow	2.8	Moderately resistant – some effect from one application but often requires further applications to give adequate control.
1 treatment will normally kill plants at all sta	aes of arowt	h up to the early bud stage. For best

levels of control, treat in April - June when rosettes are growing strongly but before flower buds are well formed.

SAFETY PRECAUTIONS

a Operator Protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACE SHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces. WEAR SUITABLE PROTECTIVE CLOTHING (IMPERMEABLE COVERALLS) AND SUITABLE PROTECTIVE GLOVES when applying by hand-held equipment. However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection. IF YOU FEEL UNWELL, seek medical advice (show label where possible). WHEN USING DO NOT EAT, DRINK OR SMOKE. WASH CONCENTRATE from skin or eyes immediately WASH HANDS AND EXPOSED SKIN before meals and after work.

b Environmental Protection

KEEP LIVESTOCK OUT of treated areas for at least two weeks following treatment and until poisonous weeds such as ragwort have died and become unpalatable DO NOT CONTAMINATE WATER WITH THE PRODUCT OR ITS CONTAINER. Do not clean application equipment near surface water. Avoid contamination via. drains from farmyards and roads.

Avoid spray drift onto adjacent plants.

c Storage and Disposal DO NOT re-use this container for any other purpose KEEP OUT OF REACH OF CHILDREN KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS. KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place. WASH OUT CONTAINER THOROUGHLY, and dispose of safely.

TERMS AND CONDITIONS OF SUPPLY, SALE OR USE

All goods supplied by Headland Agrochemicals Ltd. are high grade and we believe them to be suitable for the purpose for which we expressly supply them: but as we cannot exercise any control over their mixing, use or application which may affect the performance of the goods all conditions and warranties statutory or otherwise as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us or our Associate Companies for any damage or injury whatsoever arising from their storage, handling, re-application or use. These conditions cannot be varied by our staff, our agents or the re-sellers of the product whether or not they supervise or assist in the use of such aoods.

SECTION 6 OF THE HEALTH AND SAFETY AT WORK ACT (Additional product safety information)

This section does not form part of the product label under the Control of Pesticides Regulations 1986

The product label provides information on the specific pesticidal uses of this product. Do not use unless you have assessed any potential hazard involved and the safety measures required.

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade Name: HEADLAND STAFF 500

1.2. Relevant identified uses of the substance or mixture and uses advised against Use: Herbicide

1.3. Details of the supplier of the safety data sheet

Headland Agrochemicals Ltd., Rectors Lane, Pentre, Flintshire, CH5 2DH, UK Telephone: 01244 537370 Fax: 01244 532097 E-mail: enquirv@headlandgroup.com www.headland-ag.co.uk E-mail address: enquiries@headlandgroup.com

1.4. Emergency telephone number +44 (0)1244 537370

2. HAZARDS IDENTIFICATION

2.1. Classifica	tion of the subs	stance or mixture
EEC/99/45 :	Xn	R22 - Harmful if swallowed.
	Xi	R41 - Risk of serious damage to eyes.
	N	R50/53 - Very toxic to aquatic organisms, may cause
		long-term adverse effects in the aquatic environment.
EG_1272/08:	AcuteTox.4	H302 - Harmful if swallowed.
	EveDam.1	H318 - Causes serious eve damage.

2.2. Label elements

according directive 1999/45/EG Pictogram





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- R22 R41 Harmful if swallowed.
 Risk of serious damage to eyes.
- R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S35 This material and its container must be disposed of in a safe way.
- \$39 Wear eve/face protection.
- S57 Use appropriate container to avoid environmental contamination.

REGULATION (EC) No 1272/2008 Pictogram:



Signal word: Danger

- H302 Harmful if swallowed.
- H318 Causes serious eye damage
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 +
- P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
- P330 Rinse mouth.
- P305 + IF IN EYES: Rinse cautiously with water for several minutes. Remove contact
- P351 + lenses, if present and easy to do. Continue rinsing.

P338

2.3. Other hazards

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature:	Aqueous solution of dimethylammonium salts 500 g/L 2,4-D
Components:	2.4-D
CAS-No.:	94-75-7
EINECS-No. / ELINCS No.:	202-361-1
REACH No.:	
Concentration:	42.7 % (w/w)
Classification:	

EG_1272/08 :	AcuteTox.4 STOT_SE3 EyeDam.1 SkinSens.1	H302 - Harmful if swallowed. H335 - May cause respiratory irritation. H318 - Causes serious eye damage. H317 - May cause an allergic skin reaction.
	AquaticChronic3	H412 - Harmful to aquatic life with long lasting effects.
EEC/67/548 :	Xn Xi Xi	R22 - Harmful if swallowed. R37 - Initiating to respiratory system. R41 - Risk of serious damage to eyes. R43 - May cause sensitization by skin contact. R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye contact: Rinse eyes and eye-lids thorougly with plenty of water for at least 15 minutes(remove contact lenses if possible) Obtain medical attention. Skin contact: Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. If symptoms persist, call a physician. Wash contaminated clothing before re-use

Inhalation: Move to fresh air. If symptoms persist, call a physician.

Ingestion: Rinse mouth. Do NOT induce vomiting. If swallowed, seek medical advice immediately and show this container or label.

4.2. Most important symptoms and effects, both acute and delayed Symptoms: No information available.

4.3. Indication of any immediate medical attention and special treatment needed Treatment: Treat symptomatically

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Dry powder, Sand, Foam, Carbon dioxide (CO2) Extinguishing media which shall not be used for safety reasons: High volume water jet 5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting:

In the event of fire (HCI,Cl2,NOx,CO) may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters: Use personal protective equipment. In the event of fire, wear self-contained breathing apparatus. Further Information: Standard procedure for chemical fires. Collect contaminated fire

extinguishing water separately. This must not be discharged into drains.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures Use personal protective equipment, (see Chapter 8)

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal.

Additional advice: Never return spills in original containers for re-use.

6.4. Reference to other sections see Chapter 13

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice:

Wear personal protective equipment. Do not breathe vapours or sprav mist.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store at room temperature in the original container

Advice on common storage: Keep out of reach of children. Keep away from food, drink and animal feeding stuffs

7.3. Specific end use(s) none

8. EXPOSURE CONTROLS/PERSONAL PROTECTION 8.1. Control parameters

Components with workplace control parameters (EH40/2005 Workplace exposure limits)

Components	CAS-No.	National occupational exposure limits	Note
2,4-D	94-75-7	10 mg/m3	(EH40/2005 Workplace exposure limits)

8.2. Exposure controls

Personal protective equipment

Respiratory protection: No special protective equipment required. Hand protection: PVC or nitrile-rubber gloves Eye protection: Safety glasses, , or:, Goggles

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Skin and body protection: protective suit

Hygiene measures: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Protective measures: Avoid contact with skin, eyes and clothing. Keep working clothes separately.

liauid

yellow amine-like

>200 °C

>600 °C

1.173 g/cm3

13.9 mPa.s

Soluble concentrate

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties Appearance

Physical state:

Form: Colour: Claur: Ignition temperature: Density: pH: Viscosity, dynamic:

9.2. Other information

none

10. STABILITY AND REACTIVITY 10.1. Reactivity no data available 10.2. Chemical stability No decomposition if stored and applied as directed. 10.3. Possibility of hazardous reactions No dangenous reaction known under conditions of normal use. 10.4. Conditions to avoid 10.5. Incompatible materials to avoid Strong bases. Strong acids, Strong oxidizing agents 10.6 decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects Acute oral toxicity: LD50 rat Dose: 1,297 mg/kg Acute demail toxicity: LD50 rat Dose: > 4,000 mg/kg Acute inhalation toxicity: LD50 rat Dose: > 5.01 mg/l Skin irritation: rabbit Classification: No skin irritation Result: No skin irritation Eye irritation: rabbit Classification: Risk of serious damage to eyes. Result: Severe eye irritation

Sensitisation: Guinea-pig Classification: Not sensitizing to skin. Result: Did not cause sensitization.

12. ECOLOGICAL INFORMATION

12.1. Toxicity Toxicity to fish:

Toxicity to daphnia:

Toxicity to algae:

LC50 Oncorhynchus mykiss (rainbow trout) Dose: > 200 mg/l Testing period: 96 h

EC50 Daphnia Dose: > 200 mg/l Testing period: 48 h

EbC50 Toxicity to algae Dose: 177 mg/l Exposure time: 72 h

EC50 Selenastrum capricornutum Dose: 1,100 mg/l Exposure time: 93.5 h

EC50 Navicula pelliculosa Dose: 12.4 mg/l Exposure time: 120 h Exposure time: 14 d 12.2. Persistence and degradability Stability in soil: DT50: 2 - 59 d

(2,4-D) 12.3. Potential bioaccumulation

Does not bioaccumulate.

EC50 Lemna gibba (Duckweed)

Dose: 1.36 mg/l

Results of PBT and vPvB assessment
 This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
 Other adverse effects
 none

13. DISPOSAL CONSIDERATIONS

Bioaccumulation:

12.4. Mobility in soil Koc= 5 - 212 (2.4-D)

According to European Directive 2000/532/EC as amended : Waste Code: 02 01 08 (agrochemical waste containing dangerous substances)

13.1. Waste treatment methods

14. TRANSPORT INFORMATION

Product: Dispose of product and packaging in accordance with The Green Code. (The Code of Practice for the safe use of Pesticides on Farms and Holdings.) A MAFF Publication. Contaminated packaging: Do not re-use empty containers. Dispose of as unused product.

 14.1. UN number

 14.2. Proper shipping name not applicable

 14.3. Transport hazard class(es) ADR/RID :

 Not a dengerous substance as defined in the above regulations.

 IMDG :

 Not a dengerous substance as defined in the above regulations.

 IATA-DGR :

 Not a dengerous substance as defined in the above regulations.

 IATA-DGR :

 Not a dangerous substance as defined in the above regulations.

 14.4. Packaging group not applicable

 14.5. Environmental hazards not applicable

 14.6. Special precautions for user

none 15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other regulations: The product is classified and labelled in accordance with EC directives or respective national laws.

15.2. Chemical Safety Assessment

16. OTHER INFORMATION

Print Date: 2014/01/07 The date format YYY/MM/DD is used according to ISO 8601. (Alterations are indicated in the left hand margin by: I) The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication: The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information contained herein is based on the present state of our knowledge and does therefore not guarantee certain properties.

Headland Staff 500 is approved by Pesticides Safety Directorate for use as a herbicide. Registration No. MAPP 13196. Registration held by Nufarm UK Ltd.. Headland lis a registered trademark. Headland Staff 500 is a Headland trademark