



# NOMIX DUAL

**A LEAF AND SOIL ACTING HERBICIDE FOR USE ON LAND NOT INTENDED TO BEAR VEGETATION**

**A ready-to-use oil-in-water emulsion containing 162 g/l (16.8% w/w) isopropylamine salt of glyphosate (equivalent to 120 g/l glyphosate) plus 2.22 g/l (0.23% w/w) sulfosulfuron.**

MAPP 13420

## IMPORTANT INFORMATION

### FOR USE ONLY AS AN INDUSTRIAL HERBICIDE

For use on natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces and amenity vegetation (around) Maximum Individual Dose: 9 litres of product/ha Maximum number of treatments: One per year Other Specific Restriction:

When applying through rotary atomisers the spray droplet spectra produced must be of a minimum Volume Mean Diameter (VMD) of 200 microns

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.**



## DANGEROUS FOR THE ENVIRONMENT

**VERY TOXIC TO AQUATIC ORGANISMS.**

**MAY CAUSE LONG TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT**

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES WITH CHEMICAL OR USED CONTAINER.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product.

**To avoid risks to man and the environment, comply with the instructions for use**



Nomix Enviro, A Division of Frontier Agriculture Ltd,  
The Grain Silos, Weyhill Road, Andover,  
Hampshire, SP10 3NT Tel: 01264 388050

Contents: **5 LITRES e**

Formulated for use with Nomix equipment.

Batch No:

READY FOR USE - NO MIXING

PROTECT FROM FROST

**SHAKE WELL BEFORE USE**

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## SAFETY PRECAUTIONS

(a) Operator Protection

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

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when applying by hand-held controlled droplet application (CDA) equipment.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

DO NOT BREATHE SPRAY.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

WASH ANY CONTAMINATION from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

KEEP OUT OF REACH OF CHILDREN.

When using, do not eat, drink or smoke.

(b) Environmental Protection

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.

(c) Storage and Disposal

Keep container tightly closed and in a well-ventilated place.

This material and its container must be disposed of in a safe way.

Avoid storage for prolonged periods at temperatures above 30°C.

## WARNING

**BEFORE USE REFER TO THE NOMIX APPLICATOR INSTRUCTION AND OPERATION MANUAL**

**DO NOT DECANT. CONNECT DIRECTLY TO NOMIX APPLICATOR DO NOT ALLOW SPRAY TO CONTACT DESIRED PLANTS OR CROPS.**

**In case of emergency day or night telephone CARECHEM 24 : 01865 407333**

## GENERAL INFORMATION

### Mode of Action

NOMIX DUAL herbicide controls emerged broad-leaved weeds and grass weeds, and prevents further weed growth by preventing weed seed germination. NOMIX DUAL contains two active ingredients, glyphosate and sulfosulfuron. Glyphosate is absorbed by green leaves and stems, and is translocated to other parts of the weed including the roots and rhizomes. Sulfosulfuron is both foliar and soil acting. Visual evidence of NOMIX DUAL treatment should appear approximately 14 days after application. However, if the growing conditions are poor, or if broad-leaved weeds are present, symptoms may take longer to appear.

### Weeds Controlled

NOMIX DUAL effectively controls a wide range of emerged annual and perennial grasses and broad-leaved weeds.

### DIRECTIONS FOR USE

#### Connection of the Ready to Use Pack

Swirl the pack very thoroughly and connect direct to the lance according to the directions in the Instruction and Operation Manual. On connecting the pack to the lance use immediately.

#### LANCE CALIBRATION INSTRUCTIONS

1. Choose a comfortable forward speed and appropriate spray width.
2. Using the calibration chart, read the required flow rate for your chosen forward speed and spray width.
3. Adjust the head setting to achieve the required flow rate, which should be measured using the Nomix Calibration Cup provided with the lance. The flow rate should always be checked before spraying.

Flow Rate for 9.0 litres per hectare of Nomix Dual									
Walking Speed mph (kph)									
Disc	Spray Width cm	1.5 (2.4)		2.0 (3.2)		2.5 (4.0)		3.0 (4.8)	
		Mis at 30 secs	Guide Head Settings	Mis at 30 secs	Guide Head Settings	Mis at 30 secs	Guide Head Settings	Mis at 30 secs	Guide Head Settings
Spiral	15	3	B	4	B	5	B-C	6	C
	30	6	C	7	C	9	C-D	12	C-D
Square	45	8	C-D	11	C-D	14	D	16	D
	60	11	C-D	15	D	18	D-E	22	E
Serrated	75	14	D	18	D-E	22	E	27	E-F
	90	16	D	22	E	27	E-F	32	F

### Disc Selection

The small spiral and square discs are used where the spray width required is less than 60cm e.g. in confined areas. The narrow spray width is also appropriate for application around obstacles (e.g. lamp-posts, fence-lines, gravestones). The large serrated disc is used where large spray widths are needed.

### Cleaning the Nomix Lance

It is essential to thoroughly clean out the lance using Nomix Universal Cleaner, especially between applying this product and other pesticides, to avoid contamination. An area of land already treated or a patch of bare soil where no vegetation is required should be selected for the cleaning process. The herbicide pack should be disconnected from the lance and the pack of cleaner attached. The lance should be set to the "PRIME" setting and the valve opened for sufficient time for a minimum of 60 seconds. This will allow a volume of cleaning fluid equivalent to at least 5 times the volume of the internal tubing of the sprayer to pass through.

### Application Rate

NOMIX DUAL is applied at 9 l/ha

### Weed Susceptibility

Weed Species	Susceptibility
Annual meadow-grass (Poa annua)	S
Birdsfoot Trefoil (Lotus corniculatus)	MS
Blackgrass (Alopecurus myosuoides)	S
Black Medick (Medicago lupulina)	MS
Bramble (Rubus fruticosus).	MS
Broad-leaved Dock (Rumex obtusifolius)	S
Cinquefoil (Potentilla)	S
Cleavers (Galium aparine L)	S
Clover (Trifolium spp)	S
Cocksfoot (Dactylis glomerata)	MS
Common Nettle (Urtica dioica)	MR
Common Couch (Elymus repens)	S
Cranesbill (Geranium L)	S
Creeping bent (Agrostis stolonifera)	S
Creeping Buttercup (Ranunculus repens)	S
Creeping Thistle (Cirsium arvense)	MS
Daisy (Bellis perennis)	S
Foxglove (Digitalis purpurea)	S
Groundsel (Senecio vulgaris)	MR
Hogweed (Heracleum sphondylium)	S
Lesser Plantain (Plantago lanceolata)	S
Mouse-ear Hawkweed (Hieracium pilosella)	S
Prickly Sowthistle (Sonchus asper)	MR
Ragwort (Senecio jacobaea)	S
Red fescue (Festuca rubra)	S
Rosebay Willowherb (Chamerion angustifolium)	S
Rough Meadow Grass (Poa trivialis)	S
Sterile Brome (Bromus sterilis L..)	S
Spear Thistle (Cirsium vulgare).	S
Tufted Vetch (Vicia cracca).	MS
Yorkshire Fog (Holcus lanatus)	MS

Long term effects on perennial weeds are variable and control cannot be expected in the year following treatment.

### Timing of Application

Apply NOMIX DUAL at any time when the weeds are green and actively growing. Annual grasses and broad-leaved weeds should have at least 5cm of leaf or 2 expanded true leaves respectively at the time of application. Perennial broad-leaved weeds are most susceptible if treated at or near flowering, but will be severely checked if they are treated at other times when they are actively growing. Best residual activity is obtained from applications in spring and early summer.

Application of lime, fertiliser, organic manure and pesticides should be delayed until 5 days after application of Nomix Dual

### SPECIAL AREAS OF USE:

#### Amenity Woodland & Planting

**Trees planted on roadsides, streets, parks, landscaped areas and amenity woodland:**

NOMIX DUAL can be used to control weeds growing close to trees and shrubs provided that foliar organs and tree stems are not exposed to spray drift, particularly during active growth. Ensure even application - overdosing could damage the trees and shrubs. One application only per year should be made. NOMIX DUAL should not be used in tree and shrub nurseries or in areas where it is expected that trees and shrubs will be planted during the succeeding two years after application.

### CAUTION

Take care to avoid drift onto crops and other plants outside the target area.

### Effect of Weather

At least 6 hours and preferably 24 hours, without rain should follow spraying. If rainfall occurs soon after treatment, the control of emerged weeds may be reduced - re-treatment with STIRRUP or HILITE may be necessary. Do not spray in windy conditions as drift onto desired plants or vegetation can severely damage or destroy them. Reduced control may occur when weeds are suffering from stress due to drought, water-logging, heat and frost.

### Weed Resistance Strategy

Nomix Dual contains sulfosulfuron which is an ALS inhibitor, also classified by the Herbicide Resistance Action Committee as 'Group B'. Use only as part of a resistance management strategy that includes cultural methods of control and does not use ALS inhibitors as the sole chemical method of weed control.

Growers are encouraged to implement a weed resistance strategy based on a) Good agricultural practices and b) Good Plant protection Practices by:

- Following label recommendations
- The adoption of complimentary weed control practices
- Minimising the risk of spreading weed infestations
- The implementation of good spraying practice to maintain effective weed control
- Using the correct spray discs to maximise coverage
- Application only under appropriate weather conditions
- Monitoring performance and reporting any unexpected results to Nomix Enviro.

Strains of some annual weeds (e.g. black-grass, wild-oats, and Italian ryegrass) have developed resistance to herbicides which may lead to poor control. 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 the HGCA, CPA, your distributor, crop adviser or product manufacturer.

### CONDITIONS OF SALE

The following shall form part of any contract of sale of this product whether sold by the manufacturer or a subsequent owner ('The Seller').

1. The seller warrants that the product complies with the product specification prevailing at the date of sale which is obtainable from the Seller on request provided that (except to the extent any claim is in respect of personal injury or death) the said Seller's liability, for breach of this warranty is limited to the price of the products involved in the breach.
2. Except as aforesaid, all conditions and warranties statutory or otherwise and expressed or implied as to the quality of the product or its fitness for any purpose are expressly excluded.
3. Except as aforesaid the Seller shall not be under any liability other than for personal injury or death whether in contract or in tort for any loss or damage arising out of or resulting from the use of the product.
4. The Seller shall in no event be liable for any loss or damage caused by the failure of any person to use the product in accordance with the instructions for use given by The Seller.

## PRODUCT SAFETY INFORMATION

(This section does not form part of the product label under PPPR)

### 1. IDENTIFICATION

Preparation : **NOMIX DUAL**

**Supplier** : Nomix Enviro, A Division of Frontier Agriculture,  
The Grain Silos, Weyhill Road, Andover,  
Hampshire, SP10 3NT.  
Tel: 01264 388050

**Chemical Emergency Agency Service (24 hr):** Tel. 01865 407 333

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Composition:**

ISOPROPYLAMINE SALT OF N-(PHOSPHONOMETHYL) GLYCINE

CAS No. 38641-94-0 EINECS NO. 254-056-8 120 g/l

Sulfosulfuron 2.22 g/l

Other formulating ingredients : to 100% w/w

### 3. HAZARDS IDENTIFICATION

**Human health effects:**

On the basis of available information, this material is not expected to produce any significant adverse health effects when recommended use instructions are followed.

### 4. FIRST-AID MEASURES

**Never give fluids or induce vomiting if patient is unconscious or is having convulsions.**

**Inhalation:**

If inhalation of vapour, mists or fumes causes irritation of the nose or throat, or coughing remove patient to fresh air. If irritation persists obtain medical advice.

**Skin contact:**

Remove contaminated clothing immediately. Wash contaminated skin immediately with plenty of soap and water. If irritation persists get medical attention.

**Eye Contact:**

Flush immediately with plenty of water, for at least 15 minutes. If pain, redness or irritation persists, get medical attention.

**Ingestion:**

If oral contamination occurs, wash out mouth with water. If swallowed do not induce vomiting, seek medical advice immediately and show the container, label or this data sheet.

### 5. FIREFIGHTING RELEASE MEASURES

**Unusual hazards:**

Packaging burns to give toxic fumes.

**Extinguishing media:**

Extinguish with dry chemical, foam, waterspray, CO2. Firefighters, and other exposed, wear self-contained breathing apparatus. Thoroughly clean equipment after use.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions:**

Use personal protection recommended in section 8.

**Environmental precautions:**

Contain liquid spillage with sand or other means to prevent entry into drains.

**Methods for cleaning up:**

Absorb in earth or sand. Sweep up into containers for disposal. Dig up heavily contaminated soil and place in drums. (Refer to section 10 for types of containers and drums)

Wash spill area with soap and water. Refer to section 13 for disposal of spilled material.

### 7. HANDLING AND STORAGE

**Handling:**

Good industrial practice in housekeeping and personal hygiene should be followed. Do not breath gas, fumes, vapour or spray. When handling do not eat, drink or smoke. Wash hands immediately after handling. Wash contaminated clothing before reuse. Thoroughly clean equipment after use.

**Storage:** Keep out of reach of children. Keep away from food, drink and animal feeding stuffs. Keep at temperature not exceeding 30°C. Store above 0°C.

Keep container tightly closed. Do not re-use container for any other purpose.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Occupational exposure limits:**

None assigned

**Engineering measures:**

See section 10 - "Materials to avoid" for equipment.

**Respiratory protection:**

If exposed to vapour or spray, wear suitable respiratory protective device.

However this requirement should not arise in normal use.

**Hand protection:** Wear suitable protective gloves.

**Eye protection:** No special requirement .

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** : Opaque

**Colour** : Cream/brown liquid

**Odour** : Oil-like

**Flash Point** : >100 C.

**Solubility in water** : Immiscible

**Density** : 0.96

### 10. STABILITY AND REACTIVITY

**Conditions to avoid:**

Not applicable.

**Materials to avoid:**

Avoid contact with galvanised steel or unlined steel (except stainless steel).

### 11. TOXIC HAZARD

**Formulation:**

(By calculation)

Acute oral toxicity LD<sub>50</sub> (rat) : > 5 000 mg/kg.

Practically non harmful by ingestion.

Acute dermal toxicity LD<sub>50</sub> (rabbit) : > 5 000 mg/kg.

Practically non harmful by skin absorption.

**Other Ingredients:**

Mineral oils may cause defatting of the skin and subsequently dermatitis in the event of repeated skin contact.

### 12. ECOLOGICAL INFORMATION

**Aquatic toxicity:**

96 hour LC<sub>50</sub>: Rainbow Trout > 100 mg/l.

48 hour LC<sub>50</sub>: Daphnia magna = 0.093 mg/l

72 hour EC<sub>50</sub>: Algae = 26 mg/l.

EC<sub>50</sub> Lemna = 0.34 mg/l.

### 13. DISPOSAL CONSIDERATIONS

**Product:**

Absorb in earth or sand. Shovel up into covered containers for disposal. Dig up heavily contaminated soil and place in drums. (Refer to section 10 for types of containers and drums to avoid). Send to special chemical waste disposal facility or burn only in special, controlled high temperature incinerator. Do not empty into drains.

**Container:**

Empty container completely before disposal. Dispose of container through a reputable waste disposal contractor. Do not contaminate waterways, ponds or ditches with waste product or container. All local and national regulations should be followed.

### 14. TRANSPORT INFORMATION

**ADR Class/Conveyance class:** 9

**Packing group:** III

**UN No:** 3082

Environmentally Hazardous Substance

### 15. REGULATORY INFORMATION

**Hazard Symbol:** **N, Dangerous for the environment**

**Risk Phrases:** **R50 Very toxic to aquatic organisms**  
**R53 May cause long term adverse effects in the aquatic environment**

**Safety Phrases:** **S2 Keep out of reach of children**  
**S7/9 Keep container tightly closed and in a well ventilated place**  
**S20/21 When using do not eat drink or smoke**  
**S23 Do not breathe spray**  
**S35 This material and its container must be disposed of in a safe way**  
**S57 Use appropriate containment to avoid environmental contamination**  
**SP1 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**

### 16. OTHER INFORMATION

The information contained within this Material Safety Data Sheet does not constitute the users own assessment of workplace risk as required by other national health and safety legislation such as the Health and Safety at Work Act (1974) and the Control of Substances Hazardous to Health Regulations (1988 and subsequent amendments).

Date of MSDS Review : 07.01.08 Supersedes MSDS Dated : 26.04.06

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