RETURN LEAFLET TO
POCKET AFTER USE

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.

WARNING

VERY TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS
Wear protective clothing/gloves/eye protection.
Avoid release to the environment. Collect spillage. Dispose of contents/container to a licensed waste-disposal contractor.
Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.
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
For Product information call 01264 388056.
Chemical Emergency Only call 01865 407333.

Contents: 5 LITRES e
Formulated for use with Nomix equipment.
Batch No:
READY FOR USE - NO MIXING **PROTECT FROM FROST**

SHAKE WELL BEFORE USE

615301/07.07.14

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)									
		1.5	(2.4)	2.0	(3.2)	2.5	(4.0)	3.0	(4.8)
Disc	Spray Width cm	Mls at 30 secs	Guide Head Settings	Mls at 30 secs	Guide Head Settings	Mls at 30 secs	Guide Head Settings	Mls 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, fencelines, 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 ruba)	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

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 following summer.

APPLICATION TO PAVEMENTS AND OTHER IMPERMEABLE SURFACES

Apply this product carefully. Ensure spraying takes place only when weeds are actively growing (normally March to October) and is confined only to visible weeds, areas of potential weed growth (e.g. gaps between paving stones, kerb edges and road gulleys) and/or a 30cm swath covering the kerb edge and road gulley – do not overspray drains.

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 rye-grass) 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 IINFORMATION

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

Active ingredient: Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

Composition:

Chemical Name	No. CAS No.EINECS Index No.	Hazard Symbol(s) & Risk Phrase(s)				Conc. (%) w/w
		67/548/EEC		CLP: EC1272/2008		
Isopropylamine salt N-(phosphonomethyl) Glycine equivalent to 120 g/l glyphosate)	38641-94-0 254-056-8 015-184-00-8	N	R 51/53	Aquatic Chronic 2	H411	16.8
Sulfurosulfuron	141776-32-1	N	R 50/53	Aquatic Acute/ Chronic 1	H400 H410	0.23
Other formulating ingredients inlculding mineral oils	616-109-00-7	Xi	R66		EUH 066	to 100

3. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]
Chronic aquatic toxicity (Category 2)

Classification according to EU Drective 67/548/EEC or 1999/45/EC
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label elements:
Labelling according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

Pictogram(s):



Signal word: Warning

Hazard statement(s): H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s):

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P391	Collect spillage.
P501	Dispose of contents/container to a licensed waste-disposal contractor in accordance with 'The Waste Management Regulations (England & Wales) Regulations 2006'.

Supplemental Hazard statements: None

Labelling according to EU Drective 67/548/EEC or 1999/45/EC

Hazard Symbol(s): N, Dangerous for the environment

Risk Phrase(s):

R50/53	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Safety Phrase(s):

S29/35	Do not empty into drains; dispose of this material and its container in a safe way.
S36/37/39	Wear suitable protective clothing/gloves/eye protection.
S57	Use appropriate containment to avoid environmental contamination.
S61	Avoid release to the environment. Refer to special instructions/Safety data sheets.
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

Other Hazards: Potential for defatting of the skin with prolonged exposure due to mineral oils in formulation therefore use of gloves is advised.

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 30oC. Store above 0oC. 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 (eg nitrile) gloves.



Eye protection:
No special requirement.

Skin protection:
Wear suitable protective clothing (coveralls, suitable protective gloves) and rubber boots during application.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Opaque
Colour:	Cream/brown liquid
Odour:	Oil-like
Flash Point:	>100 oC.
Solubility in water:	Immiscible
Density:	0.96

10. STABILITY AND REACTIVITY

Conditions to avoid:
Not applicable.

Materials to avoid:
Galvanised steel or unlined steel containers (except stainless steel).

11. TOXIC HAZARD

Formulation:
(By calculation)
Acute oral toxicity LD_{50} (rat) : > 5 000 mg/kg.
Acute dermal toxicity LD_{50} (rabbit) : > 5 000 mg/kg.

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_{50}: Rainbow Trout > 100 mg/l.
48 hour LC_{50}: Daphnia magna = 0.093 mg/l
72 hour EC_{50}: Algae = 26 mg/l.
EC50 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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

In 2012 UK HSE (CRD) considered effects on non target terrestrial plants and it was concluded that glyphosate containing products should carry the risk mitigation phrase **'Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area'.**

16. OTHER INFORMATION

Text of H code(s) and R phrase(s) mentioned in section 3

EUH066 Repeated exposure may cause skin dryness or cracking

Due to mineral oil component use of gloves is advised to prevent possible defatting / dermatitis from prolonged skin contact.

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 (2002 and subsequent amendments).

Date of MSDS Review: 02.10.13

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