

NEXUS

AN EMULSIFIABLE CONCENTRATE FORMULATION CONTAINING 250 G/L (24.8% W/W) TRINEXAPAC-ETHYL

NEXUS is a growth regulator for crop height reduction in all varieties of winter and spring wheat, winter and spring barley, winter and spring oats, rye, triticale, durum wheat and grassland (seed crop).

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NEXUS PCS 06558 An emulsifiable concentrate formulation containing 250 g/l (24.8% w/w) trinexapac-ethyl

FOR PROFESSIONAL USE ONLY

SAFETY INFORMATION

hazard statement

Causes serious eye irritation.

May cause respiratory irritation.

Toxic to aquatic life with long lasting effects.

To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statement

Keep out of reach of children.

Avoid breathing spray.

Wear protective gloves/protective clothing/eye protection.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF INHALED: Remove person to fresh air and keep person comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Avoid release to the environment.

Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site, except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

Marketing company:

Unichem LTD
The Ward,
Co. Dublin
D11 CH64 Ireland
Tel.: 01 835 1499
Fax.: 01 835 1284

PCS 06558

WARNING



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).
FOR PROFESSIONAL USE ONLY AS AN AGRICULTURAL GROWTH REGULATOR. READ THIS LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE.

Production date / Batch No: see packaging **PROTECT FROM FROST – SHAKE WELL BEFORE USE**

Approval holder: Cartiplant N.V., Lichtenberglaan 2045, 3800 Sint-Truiden, BELGIUM Tel: +32 11 88 03 92 – Fax: +32 11 70 74 84

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NEXUS

THIS BOOKLET IS PART OF THE APPROVED PRODUCT LABEL

IMPORTANT INFORMATION FOR USE ONLY AS AN AGRICULTURAL GROWTH REGULATOR

Crop	Max single dose	Max. no. of applications	Max. total dose	Latest time of application
Winter wheat	0.4 l/ha	-	0.4 l/ha/crop	Before flag leaf sheath extending stage (GS 41)
Winter barley	0.6 l/ha	-	0.6 l/ha/crop	
Spring wheat	0.4 l/ha	-	0.4 l/ha/crop	Before third node detectable stage (BBCH 33)
Spring barley	0.5 l/ha	-	0.5 l/ha/crop	Before third node detectable stage (BBCH 33)
Oats	0.4 l/ha	-	0.4 l/ha/crop	Before second node detectable stage (BBCH 32)
Durum wheat, rye, triticale	0.4 l/ha	-	0.4 l/ha/crop	Before third node detectable stage (BBCH 33)
Grassland (seed crop)	0.8 l/ha	-	0.8 l/ha/crop	Before second node detectable stage (BBCH 33)

Other specific restrictions:

This product must not be used on grass seed crops that will be grazed by livestock or cut for fodder.

Treated grass seed crops must not be grazed or cut for fodder.

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.

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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 carefully read in order to obtain safe and successful use of this product.

INTRODUCTION

NEXUS is a growth regulator for crop height reduction, which can lead to lodging control and yield protection in winter and spring wheat, winter and spring barley, winter and spring oats, rye, triticale, durum wheat and grassland (seed crop).

SPRAY VOLUME & NOZZLES

Apply NEXUS in a minimum of 200 L water per hectare.

A medium spray quality is preferred for application of NEXUS. A spray pressure of 2-3 bar is recommended.

APPLICATION EQUIPMENT

Only apply using tractor mounted/trailed sprayer. Take particular care to avoid overlapping of spray swaths.

CROP SPECIFIC INFORMATION

Winter wheat

Dose rate: 0.4 l/ha

Timing: from the leaf sheath erect stage (GS30) but before the flag leaf fully emerged stage (GS41).

Winter barley

Dose rate: 0.4 l/ha

Timing: from the leaf sheath erect stage (GS30) but before the third node detectable stage (GS33)

OR

Dose rate: 0.6 l/ha

Timing: from the flag leaf just visible stage (GS37) but before the flag leaf extending stage (GS41).

Spring wheat

Dose rate: 0.4 l/ha

Timing: from the leaf sheath erect stage (GS30) but before the third node detectable stage (GS33)

Spring barley

Dose rate: 0.5 l/ha

Timing: from the leaf sheath erect stage (GS30) but before the third node detectable stage (GS33)

Oats

Dose rate: 0.4 l/ha

Timing: From the leaf sheath erect stage (GS30) but before the second node detectable stage (GS32).

Durum wheat, rye, triticale

Dose rate: 0.4 l/ha

Timing: From the leaf sheath erect stage (GS30) but before the third node detectable stage (GS33).

Grassland (seed crop)

Dose rate: 0.8 l/ha

Timing: between the leaf sheath erect stage and the second node detectable stage (GS30-32)

RESTRICTIONS

NEXUS should only be applied to healthy, actively growing crops.

Avoid spray drift onto neighbouring crops.

Do not apply during periods of frosty weather, if rain or frost is expected or if the crop is wet.

Do not apply to crops under stress or to crops suffering from waterlogging, pest attack, disease, nutritional deficiency, frost, etc.

SPRAY OPERATIONS INSTRUCTION

SHAKE THE CONTAINER BEFORE USE.

Preparation

1. Wash out the sprayer, spray bars and nozzles to ensure no trace remains of previous chemical. Contaminated hoses should be replaced by new hoses. NB all hose connections must be secured with hose clips.
2. Check that the nozzle tips are clean, undamaged, of the correct type to apply the recommended spray quality and all the same size, giving equal spray outputs and distribution.

Mixing and filling

3. Part fill the sprayer with clean water and check that the agitation is functioning properly
4. Add the required volume of NEXUS
5. Fill the tank with water of the required level, and mix well by agitating or stirring. Continue agitation until load is used.

In Field

6. Spray immediately: do not allow the mixture to stand. Ensure that the spray nozzles are set at the correct height to give even spray coverage. Commence spraying, being careful to maintain correct pressure and tractor speed. Avoid overdosing or drift onto neighbouring crops.

After Spraying

7. Mix only sufficient chemical for immediate use. Any chemical remaining at the end of the day must be turned off, stored in a labelled, tightly sealed container and kept for further use in a place protected from frost.
8. After each day's work drain sprayer, wash thoroughly with water and empty completely. Ensure that all liquid is removed from the sprayer tank, pump and hoses. Remove nozzles, open tank and drain pump to allow free access of air to all parts of the system.
9. Thoroughly wash all spraying and measuring equipment with water immediately after use.

SAFE DISPOSAL

Do not re-use container for any other purpose.

Triple rinse of empty packaging, safe disposal in accordance with local authority rules and regulations.

COMPANY INFORMATION

This section is not part of the product label.

CONDITIONS OF SUPPLY

The manufacturer/seller/registration holder only guarantees that the supplied product complies with the quality standards in force. The manufacturer/seller/registration holder cannot be held liable neither for results nor for any damage due to the storage, transport or application of the product.

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SAFETY DATA SHEET Nexus

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Name of the substance: Nexus

Code: PCS 06558

Formulation type: EC (emulsifiable concentrate)

Concentration: 250 g/L (24.8% w/w)

Active substance: trinexapac-ethyl

IUPAC-name: 4-(cyclopropyl-hydroxymethylene)-3,5-dioxo-cyclohexanecarboxylic acid ethyl ester

Identification number: CAS 95266-40-3

RRN: No registration number is available for this substance, in accordance with the provisions of Article 15 of Regulation (EC) No 1907/2006

1.2 Relevant identified uses of the substance or mixture and uses advised against

identified uses: plant growth regulator for professional use

1.3 Details of the supplier of the safety data sheet

Unichem LTD
The Ward,
Co. Dublin
D11 CH64 Ireland
Tel.: 01 835 1499
Fax.: 01 835 1284

1.4 Emergency telephone number

Please call the local emergency number

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Eye Irr. 2, STOT SE 3, Aquatic Chronic 2
H319, H335, H411

For full text of Hazard-statements see section 16.

2.2 Label elements

Label in accordance with Regulation (EC) No 1272/2008

Hazard pictogram



Signal word

Warning

hazard statement

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H411: Toxic to aquatic life with long lasting effects.

EUH 401: To avoid risks to human health and the environment, comply with the instructions for use.

precautionary statement

P102: Keep out of reach of children.

P261: Avoid breathing spray.

P280: Wear protective gloves/protective clothing/eye protection.

P312: Call a POISON CENTER/doctor if you feel unwell.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313: If eye irritation persists: Get medical advice/attention.

P273: Avoid release to the environment.

P501: Dispose of contents/container to a licensed waste disposal contractor or collection site except for triple rinsed empty containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

The active substance does not fulfill the criteria of a persistent, bioaccumulative and toxic (PBT) substance, nor of a very persistent and very bioaccumulative (vPvB) substance, as outlined in Annex XIII of Regulation (EC) No 1907/2006.

Section 3 : Composition/information on ingredients

3.2 Mixtures

Name	Identification number	RRN	% (% by weight)	Classification according to Regulation (EC) No 1272/2008
trinexapac-ethyl	CAS 95266-40-3	not available	250 g/L (24.8% w/w)	Aquatic Chronic 2 H411
diacetone alcohol	CAS 123-42-2	not available	23.5% w/w	Flam. Liq. 3, Eye Irr. 2, STOT SE 3 H226, H319, H335

For full text of Hazard-statements see section 16.

Section 4: First aid measures

4.1 Description of first aid measures

If INHALED:

Fresh air, rest. Semi-upright position. Artificial respiration may be needed. Call 112, a hospitalization is indicated.

Show the label or packaging.

In case of contact with SKIN:

Rinse the skin with plenty of water or take a shower for 15 minutes. Meanwhile, remove contaminated clothing and shoes. In case of symptoms seek medical attention and show the label or packaging.

In case of contact with EYES:

Rinse thoroughly with water for 10 minutes. Rinse AWAY from the non-affected eye. If wearing contact lenses: if easy to remove, first remove the lenses, then rinse. Consult a doctor and show the label or packaging.

IF SWALLOWED:

Rinse the mouth. Call the poison center and ask whether drinking of a solution of activated charcoal in water is recommended. Consult a doctor immediately and show the label or packaging.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:

Pre-hospital: symptomatic treatment.

Contact the local poison center (see section 1.4) for further treatment in the hospital.

Section 5 : Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media: chemical powder, water spray, CO₂, polyvalent foam.

Unsuitable extinguishing media: Water with full jet

5.2 Special hazards arising from the substance or mixture

The product contains flammable organic substances. In case of a fire, a thick black smoke containing hazardous products of combustion will be generated (see section 10).

Exposure to decomposition products can be harmful to one's health.

5.3 Advice for fire-fighters

Self-contained breathing apparatus and full protective clothing (boots, overall, gloves, eye and face protection). Avoid discharge of extinguish water into sewer or watercourse.

Section 6 : Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

See section 8

6.2 Environmental precautions

Prevent the product from entering into soil, sewers, surface or ground water. If necessary, isolate the contaminated area. First remove spillage and accidental leaks (see section 6.3). Then rinse the contaminated area with water. Do not allow residues to enter into sewer and surface water. Dispose contaminated water according to local legislation. Inform the authorities if product pollutes the environment.

6.3 Methods and material for containment and cleaning up

6.3.1 Containment of a spill

If applicable, cover spillage with absorbing material (sand, clay, diatomite, universal binders, absorbing grain).

6.3.2 Clean-up of a spill

Spills shall be contained by means of absorbent material and a shovel. The collected products shall be disposed of in re-usable barrels or barrels for waste removal. As soon as the substance has been removed, thoroughly clean up the floor and any object that has been in contact with the substance in compliance with the environmental prescriptions.

6.3.3 Additional information

No additional information

6.4 Reference to other sections

See section 1 contact information

See section 7 for handling and storage

See section 8 for exposure controls/ personal protection

See section 13 for disposal considerations

Section 7 : Handling and storage

7.1 Precautions for safe handling

7.1.1 Protective measurements

Work under local exhaust/ventilation. Observe normal industrial and hygiene standards. Wear personal protective clothing. Avoid contact with skin and eyes. Avoid forming of aerosol or dust. Wash hands after use. Do not discharge product into sewer. Keep away from source of ignition.

7.1.2 Advice on general occupational hygiene

When using, do not eat, drink or smoke. Clean used material. Wash hands after each use.

Wash contaminated clothing after use. Remove contaminated clothing and protective equipment before entering eating areas

7.2 Conditions for safe storage, including any incompatibilities

Store in closed packaging in a dry, well ventilated area. Store in original packaging. Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. See also section 10.

7.3 Specific end use(s)

See section 1.2.

Section 8 : Exposure controls/personal protection

8.1 Control parameters

8.1.1 Occupational exposure limit values

Diacetone alcohol: limit value (8 h): 50 ppm / 240 mg/m³

8.1.2 Information on currently recommended monitoring procedures

Not known

8.2 Exposure controls

8.2.1 Appropriate engineering controls

See section 7 and 8.1.1.

8.2.2 Individual protection measures, such as personal protective equipment

8.2.2.1 Eye / face protection

Wear safety goggles, with side-protection.

8.2.2.2 Skin protection

8.2.2.2.1 Hand protection

Wear chemical protective gloves (EN374).

8.2.2.2.2 other

Wear suitable work clothes. (Coverall with full body protection)

8.2.2.3 Respiratory protection

Use always in a well ventilated area.

Only if applicable:

Gas, vapours: gas filter: semi-facial mask with ABEK filter.

Dust, mist, fumes: dust mask : P2FFP2

8.2.3 Environmental exposure controls

See section 6: Accidental release measures

See section 7: storage and handling

See section 13: Disposal considerations

Section 9 : Physical and chemical properties

9.1 Information on basic physical and chemical properties

	Endpoint (unit)
a) Appearance	Uniform light brown liquid
b) Odour	odour of amyl acetate
c) Odour threshold	no data available
d) pH	3.49 (1% aqueous dilution)
e) Melting point/freezing point	no data available
f) Initial boiling point and boiling range	no data available
g) Flash point	66.6 °C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	not relevant
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	1.01 g/ml (20 °C)
n) Solubility(ies)	no data available
o) Partition coefficient: n-octanol/water	The following data are applicable to the active substance trinexapac-ethyl: log Pow = 1.5 at pH 5; 25 °C; -0.29 at pH 6.9; 25 °C -2.1 at pH 8.9; 25 °C
p) Auto-ignition temperature	Not auto-flammable below 400 °C
q) Decomposition temperature	no data available
r) Viscosity	6.95-11.43 mPa.s (20 °C)
s) Explosive properties	no explosive properties
t) Oxidising properties.	no oxidising properties

9.2 Other information

No additional information

Section 10 : Stability and reactivity

10.1 Reactivity

Stable under normal conditions of handling and storage.

10.2 Chemical stability

Stable under normal environmental temperatures (between 0°C and 40°C). See also section 7.2.

10.3 Possibility of hazardous reactions

No specific data known.

10.4 Conditions to avoid

No specific data known.

10.5 Incompatible materials

No specific data known.

10.6 Hazardous decomposition products

Combustion or thermal decomposition produces toxic and irritating vapours. See section 5.2

Section 11 : Toxicological information

11.1 Information on toxicological effects

	endpoint	duration	species	tested on
a) acute toxicity	oral: LD50 = 4210 mg/kg bw	single dose	rat	active substance (technical)
	dermal: LD50 > 4000 mg/kg bw	24h exposure	rat	active substance (technical)
	inhalation: LD50 > 5.3 mg/L	4h exposure	rat	active substance (technical)
b) skin corrosion/irritation	not irritating	4h exposure	rabbit	active substance (technical)
c) serious eye damage/irritation	not irritating	single dose	rabbit	active substance (technical)
d) respiratory or skin sensitization	not sensitising	48h exposure (M&K test)	guinea pig	active substance (technical)
e) germ cell mutagenicity	no genotoxic potential	-	multiple in vitro and in vivo test systems	active substance (technical)
f) carcinogenicity	NOAEL = 116 mg/kg bw/d	2 year	rat	active substance (technical)
g) reproductive toxicity	NOAEL = 590 mg/kg bw/d	2-generation study	rat	active substance (technical)
h) STOT-single exposure	no data available			
i) STOT-repeated exposure	no data available			
j) aspiration hazard	no data available			

Section 12 : Ecological information

12.1 Toxicity

	endpoint	duration	species	tested on
Acute toxicity fish	LC50 = 67.265 mg/L	96h	<i>Oncorhynchus mykiss</i>	formulated product
Acute toxicity invertebrates	EC50 = 30.09 mg/L	48h	<i>Daphnia magna</i>	formulated product
Algae	ErC50 = 150.985 mg/L	72h	<i>Pseudokirchneriella subcapitata</i>	formulated product
Aquatic plants	ErC50 = 13.4 mg/L	14d	<i>Lemna gibba</i>	formulated product

The following data are derived from studies with the active substance trinexapac-ethyl:

NOEC (fish, *Pimephales promelas*) = 0.41 mg a.s./L

NOEC (*daphnia magna*) = 2.4 mg a.s./L

12.2 Persistence and degradability

The following data are applicable to the active substance trinexapac-ethyl:

DT50 (soil) < 1 day

12.3 Bioaccumulative potential

The following data are applicable to the active substance trinexapac-ethyl:

log Pow =

1.5 at pH 5; 25 °C;

-0.29 at pH 6.9; 25 °C

-2.1 at pH 8.9; 25 °C

The following data are applicable to the active substance trinexapac-ethyl:

Bioconcentration factor (BCF) = 6 L/kg ww

12.4 Mobility in soil

The following data are applicable to the active substance trinexapac-ethyl:

K_{oc} = 60.629 L/kg

12.5 Results of PBT and vPvB assessment

The active substance does not fulfill the criteria of a persistent, bioaccumulative and toxic (PBT) substance, nor of a very persistent and very bioaccumulative (vPvB) substance, as outlined in Annex XIII of Regulation (EC) No 1831/2003.

12.6 Other adverse effects

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Section 13 : Disposal considerations

13.1 Waste treatment methods

Product waste: prevent spreading. To be disposed of in compliance with local and national prescriptions.

Poisoned packages: Do not re-use empty packages. If required, rinse 3 times. To be disposed of in compliance with local and national prescriptions.

Section 14: Transport information

	ADR classification	IMDG classification	IATA classification
14.1 UN number	3082	3082	3082
14.2 UN proper shipping name	environmentally hazardous substance, liquid, N.O.S. (trinexapac-ethyl)	environmentally hazardous substance, liquid, N.O.S. (trinexapac-ethyl)	environmentally hazardous substance, liquid, N.O.S. (trinexapac-ethyl)
14.3 Transport hazard class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	yes	yes	yes
14.6 Special precautions for user	Symbols:  Tunnel code: (-)	Symbols: 	Symbols: 

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable for road transport	Not applicable (not transported as bulk)	Not applicable for air transport
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Section 15 : Regulatory information

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

SEVESO:

- SEVESO category: E2

- Named dangerous substances: /

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16 : Other information

Relevant H-phrases

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H411: Toxic to aquatic life with long lasting effects.

H226: Flammable liquid and vapour.

List of abbreviations and acronyms

RRN: REACh registration number

Changes to the previous version of safety data sheet.

New version

The information presented in this SDS is based on the current knowledge of the product and is derived from the existing literature. It is given in good faith and it only illustrates the aspect of security. This SDS is in addition with our information relating to the use of the formulation but in no case replaces it. The users must be aware of the necessary precautions to take at the time of use or handling of this product. Consequently, the company can in, no case, be held responsible for damage which results, directly or indirectly, from the use of these data

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EC) No 453/2010 and Regulation (EU) No 2015/830.