MODDUS

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
12.0	04.02.2016	S1233851	

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

1.1 Product identifier

Trade name : **MODDUS**

Design code : A7725M

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

Use of the Substance/Mixture : Plant growth regulator

1.3 Details of the supplier of the safety data sheet

Company : Syngenta UK Limited
CPC4, Capital Park
Fulbourn
Cambridge

Telephone : (01223) 883400

Telefax : (01223) 882195

Website : www.syngenta.co.uk

1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Sub-category 1B	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements	: H317	May cause an allergic skin reaction.
	H411	Toxic to aquatic life with long lasting effects.
Supplemental Hazard Statements	: EUH066	Repeated exposure may cause skin dryness or cracking.
	EUH401	To avoid risks to human health and the

environment, comply with the instructions for use.

Precautionary statements	:	P102	Keep out of reach of children.
		P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
		P280	Wear protective gloves/ protective clothing.
		P302 + P352	IF ON SKIN: Wash with plenty of water.
		P391	Collect spillage.
		P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
trinexapac-ethyl	95266-40-3	Aquatic Chronic 2; H411	20 - 30
poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-	9043-30-5 500-027-2	Acute Tox. 4; H302 Eye Dam. 1; H318	20 - 30

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Have the product container, label or Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.

If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.
If swallowed	:	If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

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	:	There is no specific antidote available. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Extinguishing media - large fires Alcohol-resistant foam or Water spray
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting	:	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Further information	:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

Refer to disposal considerations listed in section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

Other data : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
trinexapac-ethyl	95266-40-3	TWA	10 mg/m3	Syngenta

8.2 Exposure controls

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.
If airborne mists or vapors are generated, use local exhaust ventilation controls.
Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.
Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection
- Material : Nitrile rubber
- Break through time : > 480 min
- Glove thickness : 0.5 mm

Remarks : The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Skin and body protection : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.
Wash with soap and water after removing protective clothing.
Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)
Wear as appropriate:
impervious protective suit

Respiratory protection : No personal respiratory protective equipment normally required.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.
Personal protective equipment should be certified to appropriate standards.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	yellow to red brown
Odour	:	unpleasant
pH	:	2 - 6, Concentration: 1 % w/v
Flash point	:	79 °C (1,013 hPa) Method: DIN 51758
Density	:	0.98 g/cm3 (25 °C)
Auto-ignition temperature	:	355 °C
Viscosity		
Viscosity, dynamic	:	10.01 mPa.s (20 °C)
		5.45 mPa.s (40 °C)
Explosive properties	:	Classification Code: Not explosive
Oxidizing properties	:	not oxidizing

9.2 Other information

Surface tension	:	28.2 - 28.5 mN/m, 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3 "Possibility of hazardous reactions".

10.2 Chemical stability

The product is stable when used in normal conditions

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazardous reactions by normal handling and storage according to provisions.

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : No substances are known which lead to the formation of hazardous substances or thermal reactions.

10.6 Hazardous decomposition products

Combustion or thermal decomposition will evolve toxic and irritant vapors.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Mouse, male and female): > 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: > 5.0 mg/l

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg

Components:

trinexapac-ethyl:

Acute oral toxicity : LD50 (Rat, male and female): 4,460 mg/kg

LD50 (Rat, female): > 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.69 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg

LD50 (Rat, male and female): > 2,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit
Result: Non-irritating

Components:

trinexapac-ethyl:
Species: Rabbit
Result: Slightly irritating

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: Non-irritating

Components:

trinexapac-ethyl:
Species: Rabbit
Result: Mildly irritating

Respiratory or skin sensitisation

Product:

Species: Guinea pig
Result: A skin sensitizer in animal tests.

Components:

trinexapac-ethyl:
Species: Guinea pig
Result: Not a skin sensitizer in animal tests.

Germ cell mutagenicity

Components:

trinexapac-ethyl:

Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

trinexapac-ethyl:

Carcinogenicity - Assessment	:	No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

trinexapac-ethyl:

Reproductive toxicity - Assessment	:	No toxicity to reproduction

Repeated dose toxicity

Components:

trinexapac-ethyl:

Remarks: No adverse effect has been observed in chronic toxicity tests.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna Straus): 2.9 mg/l Exposure time: 48 h
Toxicity to algae	:	EbC50 (Anabaena flos-aquae (bluegreen algae)): 5.6 mg/l Exposure time: 96 h ErC50 (Anabaena flos-aquae (bluegreen algae)): 8.3 mg/l Exposure time: 96 h EbC50 (Lemna gibba (duckweed)): 25 mg/l Exposure time: 7 d ErC50 (Lemna gibba (duckweed)): 55 mg/l Exposure time: 7 d

Components:

trinexapac-ethyl:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 68 mg/l Exposure time: 96 h NOEC (Pimephales promelas (fathead minnow)): 0.41 mg/l Exposure time: 35 d
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 142 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 24.5 mg/l Exposure time: 96 h EbC50 (Pseudokirchneriella subcapitata (green algae)): 14.3 mg/l Exposure time: 96 h
Toxicity to bacteria	:	EC50 (activated sewage sludge): > 100 mg/l Exposure time: 3 h

12.2 Persistence and degradability

Components:

trinexapac-ethyl:

Biodegradability	:	Result: Not readily biodegradable.
Stability in water	:	Degradation half life: 3.9 - 5.5 d Remarks: Not persistent in water.

12.3 Bioaccumulative potential

Components:

trinexapac-ethyl:

Bioaccumulation	:	Remarks: Does not bioaccumulate.
Partition coefficient: n-octanol/water	:	log Pow: -2.1 (25 °C)
		log Pow: -0.29 (25 °C)
		log Pow: 1.5 (25 °C)

12.4 Mobility in soil

Components:

trinexapac-ethyl:

Distribution among environmental compartments	:	Remarks: Trinexapac-ethyl has medium mobility in soil.
Stability in soil	:	Percentage dissipation: 50 % (DT50: < 0.2 d) Remarks: Not persistent in soil.

12.5 Results of PBT and vPvB assessment

Components:

trinexapac-ethyl:

Assessment	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB)..

12.6 Other adverse effects

Product:

Additional ecological information	:	Remarks: Classification of the product is based on the summation of the concentrations of classified components.

Components:

trinexapac-ethyl:

Additional ecological information	:	Remarks: No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRINEXAPAC-ETHYL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Environmentally hazardous
Tunnel restriction code:	E

Sea transport(IMDG)

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRINEXAPAC-ETHYL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9
14.5 Environmental hazards :	Marine pollutant

Air transport (IATA-DGR**)**

14.1 UN number:	UN 3082
14.2 UN proper shipping name:	Environmentally hazardous substance, liquid, n.o.s. (TRINEXAPAC-ETHYL)
14.3 Transport hazard class(es):	9
14.4 Packing group:	III
Labels:	9

14.6 Special precautions for user

none

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

Other regulations : Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H318 : Causes serious eye damage.
H411 : Toxic to aquatic life with long lasting effects.

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 relates only 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.