SAFETY DATA SHEET

CUADRO NT

This safety data sheet complies with the requirements of:
Regulation (EC) No. 453/2010 and Regulation (EC) No. 1272/2008

SDS # : FO004089-A
Revision date: 2018-11-05
Format: EU
Version 1

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Code(s) FO004089-A

Legacy Product Code 8830-02 (88C)

Product Name CUADRO NT

Synonyms TRINEXAPAC-ETHYL 250 g/l EC

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

Recommended Use: Plant growth regulator

Restrictions on Use: Use as recommended by the label.

1.3. Details of the supplier of the safety data sheet

Supplier

CHEMINOVA A/S, a subsidiary of FMC Corporation
Thyborønvej 78
DK-7673 Harboøre
Denmark
+45 9690 9690
SDS.Ronland@fmc.com

For further information, please contact:

Contact point (+45) 97 83 53 53 (24 h; for emergencies only)

1.4. Emergency telephone number

Emergency telephone Medical emergencies:

Austria: +43 1 406 43 43
Belgium: +32 70 245 245
Bulgaria: +359 2 9154 409
Cyprus: 1401
Czech Republic: +420 224 919 293, +420 224 915 402
Denmark: +45 82 12 12 12
France: +33 (0) 1 45 42 59 59
Finland: +358 9 471 977
Greece: 30 210 77 93 777
Hungary: +36 80 20 11 99
Ireland (Republic): +352 1 809 2166
Italy: +39 02 6610 1029
Lithuania: +370 523 62052, +370 687 53378
Luxembourg: +352 8002 5500
Netherlands: +31 30 274 88 88
Norway: +47 22 591300
Poland: +48 22 619 66 54, +48 22 619 08 97
Portugal: 808 250 143 (in Portugal only), +351 21 330 3284

Romania: +40 21318 3606
Slovakia: +421 2 54 77 4 166
Slovenia: +386 41 650 500
Spain: +34 91 562 04 20
Sweden: +46 08-331231112
Switzerland: 145
United Kingdom: 0870 600 6266 (in the UK only)
U.S.A. & Canada: +1 800 / 331-3148
All other countries: +1 651 / 632-6793 (Collect)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture *Regulation (EC) No 1272/2008*

Serious eye damage/eye irritation	Category 2 (H319)
Skin sensitization	Category 1B (H317)
Chronic aquatic toxicity	Category 3 (H412)

2.2. Label elements

Hazard pictograms

Signal Word
Warning

Hazard Statements
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

EUH401 - To avoid risks to human health and the environment, comply with the instructions for use

Precautionary Statements
P264 - Wash hands thoroughly after handling
P273 - Avoid release to the environment
P280: Wear protective gloves and eye protection
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
P501: Dispose of contents/container as hazardous waste.

2.3. Other hazards
None of the ingredients in the product meets the criteria for being PBT or vPvB.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

The product is a mixture, not a substance.

3.2 Mixture containing the following hazardous ingredients:

Chemical name	EC-No	CAS-No	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Trinexapac-ethyl	-	95266-40-3	25	Aquatic Chronic 2 (H411)	No data available

Additional Information
For the full text of the H- and EUH- phrases mentioned in this Section, see Section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact — Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Skin Contact — Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

Inhalation — If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

Ingestion — Rinse mouth with water and afterwards drink plenty of water or milk. Do NOT induce vomiting. If vomiting does occur, rinse mouth and drink fluids again.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed — None known.

4.3. Indication of any immediate medical attention and special treatment needed

Indication of immediate medical attention and special treatment needed, if necessary — Immediate medical attention is required in cases of ingestion.

Show this material safety data sheet to the doctor in attendance.

There is no specific antidote against this substance. Gastric lavage and/or administration of activated charcoal can be considered. After decontamination, treatment is supportive and symptomatic as for a general chemical.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Small Fire — Dry chemical, Carbon dioxide (CO_2).

Large Fire — Water spray, Foam.

Unsuitable extinguishing media
Avoid heavy hose streams.

5.2. Special hazards arising from the substance or mixture
The essential breakdown products are carbon monoxide and carbon dioxide.

5.3. Advice for firefighters
Use water spray to cool fire exposed surfaces and protect personnel. Isolate fire area. Evaluate upwind. Dike to prevent runoff. As in any fire, wear self-contained breathing apparatus and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions
It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots. Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area.

For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for Containment

It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping.

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers. Large spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling
In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8.

Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste. See section 13 for disposal.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage
Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

7.3. Specific end use(s)

Specific Use(s)
The product is a registered plant growth regulator which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

To the best of our knowledge, personal exposure limits have not been established for any of the ingredients in this product. However, personal exposure limits defined by local regulations may exist and must be observed.

Derived No Effect Level (DNEL)	0.34 mg/kg bw/day.
Predicted No Effect Concentration (PNEC)	41 ug/L.

8.2. Exposure controls

Engineering measures

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems non-hazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well.

Personal protective equipment

Eye/Face Protection	Safety glasses with side-shields. Provide emergency on-site eyewash.
Hand Protection	Wear chemical resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber or viton. The breakthrough times of these materials for the product are unknown, but it is expected that they will give adequate protection.
Skin and Body Protection	Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of appreciable or prolonged exposure, coveralls of barrier laminate may be required.
Respiratory Protection	The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Environmental exposure controls No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Viscous transparent liquid
Odor	Soapy
Color	Yellow to brown
Odor threshold	No information available
pH	3.72 (1% dilution in water)
Melting point/freezing point	No information available
Boiling Point/Range	Decomposes
Flash point	76 °C
Evaporation Rate	No information available
Flammability (solid, gas)	
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	Trinexapac-ethyl : 2.16 x 10^{-3} Pa @ 25°C
Vapor density	No information available
Specific gravity	1.011 @ 20°C
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	Trinexapac-ethyl : log Kow = 1.5 @ pH 5 and 25°C log Kow = -0.29 @ pH 6.9 and 25°C log Kow = -2.1 @ pH 8.9 and 25°C
Autoignition temperature	269 °C
Decomposition temperature	310°C
Viscosity, kinematic	16.4 mPa.s @ 20°C and 417 s^{-1} 14.1 mPa.s @ 40°C and 417 s^{-1}
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing

9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC content (%)	No information available
Relative density	No information available
Bulk density	No information available
K_{st}	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

To our knowledge, the product has no special reactivities.

10.2. Chemical stability

The product is stable during normal handling and storage at ambient temperatures.

Explosion data

Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

10.3. Possibility of hazardous reactions

Hazardous polymerization
Hazardous polymerization does not occur.

Hazardous reactions
None known.

10.4. Conditions to avoid

Heating can release hazardous gases.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

See Section 5.2 for more information.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information
Product does not present an acute toxicity hazard based on known or supplied information.

LD50 Oral	> 2000 mg/kg (rat) (Method: OECD 423)
LD50 Dermal	> 2000 mg/kg (rat) (Method: OECD 402)
LC50 Inhalation	> 5.08 mg/L 4 hr (rat) (Method: OECD 403)

Skin corrosion/irritation	Not irritating in animal studies. (Method: OECD 404).
Serious eye damage/eye irritation	Irritating to eyes. (Method: OECD 405).
Sensitization	Sensitizer (Method OECD 429)
Mutagenicity	The product contains no ingredients known to be mutagenic.
Carcinogenicity	The product contains no ingredients known to be carcinogenic.
Reproductive toxicity	The product contains no ingredients known to have adverse effects on reproduction.
STOT - single exposure	No specific effects after single exposure have been observed.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure. See listed target organs below.
Target organ effects	kidney.
Symptoms	To our knowledge, adverse effects in humans have not been reported. Slightly irritating to eyes. In animal tests, reduced activity and shortness of breath were seen at high dosage.
Aspiration hazard	The product does not present an aspiration pneumonia hazard.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity The ecotoxicity of the product is measured as:

- Fish: Rainbow trout (Oncorhynchus mykiss) .....96-h LC50: 13.7 mg/L

- Invertebrates: Daphnids (Daphnia magna) .....48-h EC50:21.5 mg/L

- Algae: Green algae: (Pseudokirchinella subcapitata) .....72-h IC50: 16.6 mg/L

- Plants: Duckweed (Lemna gibba) .....7-day EC50: > 100 mg/L, 7-day NOEC: 3.2 mg/L

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12.2. Persistence and degradability

Biodegradable, but does not meet the criteria for being readily biodegradable.

12.3. Bioaccumulative potential

The substance has a low potential to bioaccumulate in the environment.

12.4. Mobility in soil

Mobility in soil
Moderately mobile.

12.5. Results of PBT and vPvB assessment

None of the ingredients in the product meets the criteria for being PBT or vPvB.

12.6. Other adverse effects

None known

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products

Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste.

Disposal of waste and packaging must always be in accordance with all applicable local regulations.

According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered. If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.
Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated Packaging

It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.

2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

3. Delivery of the packaging to a licensed service for disposal of hazardous waste.

4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

Section 14: TRANSPORT INFORMATION

NOTE NOT CLASSIFIED AS DANGEROUS IN THE MEANING OF TRANSPORT

REGULATIONS.

IMDG/IMO

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard class	Not regulated
14.4 Packing Group	Not regulated
14.5 Marine Pollutant	Not applicable
Environmental Hazard	The product is harmful to aquatic organisms.
14.6 Special Provisions	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not release to the environment
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	The product is not transported in bulk by ship.

RID

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental Hazard	The product is harmful to aquatic organisms.
14.6 Special Provisions	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not release to the environment

ADR/RID

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental Hazard	The product is harmful to aquatic organisms.
14.6 Special Provisions	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.

ICAO/IATA

14.1 UN/ID no	Not regulated
14.2 Proper Shipping Name	Not regulated
14.3 Hazard class	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental Hazard	The product is harmful to aquatic organisms.
14.6 Special Provisions	Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not release to the environment

Section 15: REGULATORY INFORMATION

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

National regulations

Young people under the age of 18 are not allowed to work with the substance.

All ingredients in this product are covered by EU chemical legislation.

European Union

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)
This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants
Not Applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not Applicable

International Inventories

15.2. Chemical safety assessment

A chemical safety assessment is not required to be included for this product.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects
EUH401 - To avoid risks to human health and the environment, comply with the instructions for use

Legend

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS:	CAS (Chemical Abstracts Service)
Ceiling:	Maximum limit value:
DNEL:	Derived No Effect Level (DNEL)
EINECS:	EINECS (European Inventory of Existing Chemical Substances)
GHS:	Globally Harmonized System (GHS)
IATA:	International Air Transport Association (IATA)
ICAO:	International Civil Aviation Organization
IMDG:	International Maritime Dangerous Goods (IMDG)
LC50:	LC50 (lethal concentration)
LD50:	LD50 (lethal dose)
PBT:	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
RID:	Regulations Concerning the International Transport of Dangerous Goods by Rail
STEL:	Short term exposure limit
SVHC	SVHC: Substances of Very High Concern for Authorization:
TWA:	time weighted average
vPvB:	very Persistent and very Bioaccumulative

Classification procedure
Eye irritation: test data
Sensitisation – skin: test data
Hazards to the aquatic environment, chronic: calculation method

Key literature references and sources for data
Data measured on the product are unpublished company data. Data on ingredients are available from published literature and can be found several places.

Revision date:	2018-11-05
Reason for revision:	Format Change.
Training Advice	This material should only be used by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

Disclaimer
The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product vary and

situations unforeseen by FMC Corporation may exist. The user has to check the validity of the information under local circumstances.

Prepared By:

FMC Corporation

End of Safety Data Sheet