PALISADE

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
13.1	26.10.2017	S00039032593	

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

1.1 Product identifier

Trade name : PALISADE

Design code : A7725M

Product Registration number : MAPP 17860

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 CB21 5XE
United Kingdom

Telephone : +44 (0) 1223 883400

Telefax : +44 (0) 1223 882195

E-mail address of person responsible for the SDS : customer.services@syngenta.com

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, Category 1 — H317: May cause an allergic skin reaction.

Chronic aquatic toxicity, Category 1 — H410: Very 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.
H410 Very 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 : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves.
Response:
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements : P102 Keep out of reach of children.
P280 Wear protective gloves/ protective clothing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
Disposal:
P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No.	Classification	Concentration

	EC-No. Index-No. Registration number		(% w/w)
trinexapac-ethyl	95266-40-3	Aquatic Chronic 1; H410	>= 25 - < 30
poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-	9043-30-5 500-027-2	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 20 - < 25

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 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 : Nonspecific
No symptoms known or expected.

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). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

6.4 Reference to other sections

For disposal considerations see 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.

Further information on storage stability : 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	5 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.

Maintain air concentrations below occupational exposure standards.
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	:	Wear protective gloves. 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	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing
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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	yellow to red brown
Odour	:	unpleasant
Odour Threshold	:	No data available
pH	:	2 - 6 Concentration: 1 % w/v
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available

Flash point	:	79 °C(1,013 hPa) Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	0.98 g/cm3 (25 °C)
Solubility(ies)		
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	250 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	10.01 mPa.s (20 °C) 5.45 mPa.s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

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

SECTION 10: Stability and reactivity

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions

: No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid

: No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid

: None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

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
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2.51 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Components:

trinexapac-ethyl:

Acute oral toxicity

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.69 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-:

Acute oral toxicity : LD50 (Rat): 1,940 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Product:

Species: Rabbit
Result: No skin irritation

Components:

trinexapac-ethyl:
Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation

Components:

trinexapac-ethyl:
Species: Rabbit
Result: No eye irritation

poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-:

Species: Rabbit
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Product:

Species: Guinea pig
Result: May cause sensitisation by skin contact.

Components:

trinexapac-ethyl:
Test Type: mouse lymphoma cells
Species: Mouse
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

trinexapac-ethyl:

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

poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-:

Germ cell mutagenicity- Assessment : In vitro tests did not show 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 : ErC50 (Anabaena flos-aquae (bluegreen algae)): 8.3 mg/l
Exposure time: 96 h

ErC50 (Lemna gibba (gibbous duckweed)): 55 mg/l
Exposure time: 7 d

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life., Classification of the product is based on

the summation of the concentrations of classified components.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects., Classification of the product is based on the summation of the concentrations of classified components.

Components:

trinexapac-ethyl:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 68 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 142 mg/l
Exposure time: 48 h

LC50 (Americamysis): 6.5 mg/l
Exposure time: 96 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 24.5 mg/l
Exposure time: 96 h

ErC50 (Myriophyllum spicatum (Eurasian watermilfoil)): 1.2 mg/l
Exposure time: 14 d

EC10 (Myriophyllum spicatum (Eurasian watermilfoil)): 0.011 mg/l
Exposure time: 14 d

NOEC (Myriophyllum spicatum (Eurasian watermilfoil)): 0.025 mg/l
Exposure time: 14 d

Toxicity to microorganisms : EC50 (activated sludge): > 100 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.41 mg/l
Exposure time: 35 d
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 2.4 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

poly(oxy-1,2-ethanediyl), alpha-isotridecyl-omega-hydroxy-:
Toxicity to fish

: LC50 (Danio rerio (zebra fish)): > 1 - 10 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5 - 10 mg/l
Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

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: Product is not persistent.

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: Moderately mobile in soils

Stability in soil : Dissipation time: < 0.2 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

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

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.

Waste Code : uncleaned packagings
150110, packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

14.1 UN number

ADN : UN 3082

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

(TRINEXAPAC-ETHYL)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRINEXAPAC-ETHYL)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRINEXAPAC-ETHYL)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(TRINEXAPAC-ETHYL)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(TRINEXAPAC-ETHYL)

14.3 Transport hazard class(es)

ADN : 9

ADR : 9

RID : 9

IMDG : 9

IATA : 9

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Marine pollutant : yes

IATA (Cargo)
Marine pollutant : yes

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
E1	ENVIRONMENTAL HAZARDS	100 t	200 t

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.

Use plant protection products safely. Always read the label and product information before use.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Eye Dam.	:	Serious eye damage

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule

for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Skin Sens. 1	H317	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

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.

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