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# LIMITAR

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

### 1.1 Product identifier

Trade name : LIMITAR

Authorisation number : PCS 05047

Active substance : Trinexapac-ethyl (24,8 %)  
EC No.: 680-302-2  
CAS No.: 95266-40-3  
IUPAC Name: Ethyl 4-[cyclopropyl(hydroxy)methylene]-3,5-dioxocyclohexanecarboxylate

Substance No. : 300000000618

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

Use of the Substance/Mixture : Plant growth regulator for professional use.

### 1.3 Details of the supplier of the safety data sheet

Address : Belcrop BV  
Tiensestraat 300  
3400 Landen  
Belgium

Telephone : +32 11 59 83 60  
Telefax : +32 11 59 83 61  
E-mail address Contact Point : info@belcrop.be

### 1.4 Emergency telephone number

National Poisons Information Centre (Beaumont Hospital): 01 809 2166 (8 AM - 10 PM)  
Emergency number in Belgium (24h/24, 7d/7): +32 11 69 79 80

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (Regulation (EC) No. 1272/2008)

Respiratory/skin sensitization, Category 1B	H317: May cause an allergic skin reaction.
Serious eye damage/eye irritation, Category 2	H319: Causes serious eye irritation.
Specific target organ toxicity - single exposure, Category 3	H335: May cause respiratory irritation.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Specific target organ toxicity - repeated	H373: May cause damage to organs through

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exposure, Category 2  
Hazardous to the aquatic environment - Acute hazard, Category 2

prolonged or repeated exposure.  
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.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H361d Suspected of damaging the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H411 Toxic 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 : P102 Keep out of reach of children.  
**Prevention:**  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection  
**Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/attention.  
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. If eye irritation persists: Get medical advice/attention.  
P337 + P313  
**Disposal:**  
P501 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.

## 2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

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This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

Chemical name	CAS No. EC No. Index No. Registration No.	Classification (Regulation (EC) No. 1272/2008)  M-Factor/SCL/ATE	Conc. [%]
Trinexapac-ethyl	95266-40-3 680-302-2 607-752-00-4 -	Skin Sens. 1B; H317 STOT RE 2; H373 Aquatic Chronic 1; H410  M-Factor (Chronic aquatic toxicity): 1	24,8
Diacetone alcohol	123-42-2 204-626-7 603-016-00-1 -	Eye Irrit. 2; H319 STOT SE 3; H335 Repr. 2; H361d  SCL Eye Irrit. 2; H319: >= 10 %	<= 25
<b>Substances with a workplace exposure limit</b>			
Diacetone alcohol	123-42-2 204-626-7 603-016-00-1 -	Eye Irrit. 2; H319 STOT SE 3; H335 Repr. 2; H361d  SCL Eye Irrit. 2; H319: >= 10 %	<= 25

For the full text of the hazard statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.
- If inhaled: : Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or a doctor if you feel unwell.

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- In case of skin contact: : Take off contaminated clothing.  
Wash with plenty of water for at least 15 minutes.  
If skin irritation or rash occurs: Get medical advice/attention.  
Contaminated work clothing should not be allowed out of the workplace.  
Wash contaminated clothing before reuse.
- In case of eye contact: : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Rinse AWAY from the unaffected eye.  
If eye irritation persists: Get medical advice/attention.
- If swallowed: : Rinse mouth.  
Call a POISON CENTER or a doctor.

## **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 : For specialist advice physicians should contact the poisons information service.

## **SECTION 5: Fire-fighting measures**

### **5.1 Extinguishing media**

- Suitable extinguishing media : Water  
Carbon dioxide (CO<sub>2</sub>)  
Dry powder  
Polyvalent foam
- Unsuitable extinguishing media : Water spray jet

### **5.2 Special hazards arising from the substance or mixture**

- Specific hazards during fire fighting : Fire will produce dense black smoke containing hazardous combustion products (see Section 10).  
Exposure to decomposition products may be a hazard to health.  
Do not use a solid water stream as it may scatter and spread fire.

### **5.3 Advice for firefighters**

- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
- Other information : Standard procedure for chemical fires.

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In the event of fire and/or explosion do not breathe fumes.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.  
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).  
Ensure adequate ventilation.  
Refer to protective measures listed in Section 7 and 8.

### 6.2 Environmental precautions

Environmental precautions : Discharge into the environment must be avoided.  
Prevent further leakage or spillage.  
Prevent product from entering drains.  
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material.  
Shovel into suitable container for disposal.  
Clean contaminated floors and objects thoroughly while observing environmental regulations.

### 6.4 Reference to other sections

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

Advice on safe handling : Handle with care.  
Take care to avoid waste and spillage when weighing, loading and mixing the product.  
Smoking, eating and drinking should be prohibited in the application area.  
Never mix concentrates directly.  
Avoid inhalation, ingestion and contact with skin and eyes.  
Avoid formation of dust and aerosols.  
For personal protection see Section 8.  
Avoid exceeding of the given occupational exposure limits (see Section 8).

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Advice on protection against fire and explosion : Use explosion-proof equipment.  
Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits.

## **7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Store at room temperature.  
Store in original container.  
Keep in a dry, cool and well-ventilated place.  
To maintain product quality, do not store in heat or direct sunlight.  
Keep away from food, drink and animal feeding stuffs.  
Keep out of reach of children.

## **7.3 Specific end use(s)**

See Section 1.2.

## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

Component	CAS No.	Form of exposure	Value type	Control parameters	Basis
Diacetone alcohol	123-42-2	Not specified	TWA	50 ppm 240 mg/m <sup>3</sup>	IE OEL

### **8.2 Exposure controls**

#### **Personal protective equipment**

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.  
Recommended Filter type:  
ABEK  
: In the case of dust or aerosol formation use respirator with an approved filter.  
Recommended Filter type:  
P2FFP2

Hand protection : Protective gloves complying with EN 374.

Eye protection : Safety glasses with side-shields conforming to EN 166.

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- Skin and body protection** : Long-sleeved clothing.  
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace.
- Hygiene measures** : Handle in accordance with good industrial hygiene and safety practice.  
Store personal protection equipment in a clean location away from the work area.  
Remove and wash contaminated clothing and gloves, including the inside, before re-use.  
Keep away from food and drink.  
Wash hands before eating, drinking, or smoking.
- Protective measures** : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.  
Always have on hand a first-aid kit, together with proper instructions.

### Environmental exposure controls

- General advice** : Discharge into the environment must be avoided.  
Prevent further leakage or spillage.  
Prevent product from entering drains.  
Local authorities should be advised if significant spillages cannot be contained.
- Soil** : Avoid subsoil penetration.
- Water** : Do not flush into surface water or sanitary sewer system.  
Retain and dispose of contaminated wash water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance** : Liquid
- Colour** : Light brown
- Odour** : Amyl acetate-like
- Flash point** : 66,6 °C
- Ignition temperature** : Not auto-flammable
- Lower explosion limit** : Not applicable
- Upper explosion limit** : Not applicable

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Explosive properties	: Not explosive
Flammability	: Not applicable
Oxidising properties	: Not oxidising
Decomposition temperature	: ca. 310 °C (Active substance)
pH	: 3,49 Conc.: 1 %
Melting point/melting range	: 36,1 - 36,6 °C (Active substance)
Boiling point/boiling range	: 99,8 °C at 4,2 Pa (Active substance)
Vapour pressure	: 0,00216 Pa at 25 °C (Active substance)
Density	: 1,01 g/cm <sup>3</sup> at 20 °C
Relative density	: 1,01 at 20 °C
Solubility in water	: 1,1 g/l at pH 3,5 at 25 °C (Active substance) 2,8 g/l at pH 4,9 at 25 °C (Active substance) 10,2 g/l at pH 5,5 at 25 °C (Active substance) 21,1 g/l at pH 8,2 at 25 °C (Active substance)
Partition coefficient n-octanol/water	: Log Pow: 1,5 at pH 5 at 25 °C (Active substance) Log Pow: -0,29 at pH 6,9 at 25 °C (Active substance)



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Log Pow: -2,1  
at pH 8,9  
at 25 °C  
(Active substance)

Dynamic viscosity	: 6,95 - 11,43 mPa.s at 20 °C
Kinematic viscosity	: Non-newtonian liquid
Relative vapour density	: No data available
Particle size	: Not applicable

### 9.2 Other information

No additional information available.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

None known.

### 10.4 Conditions to avoid

Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

None.

### 10.6 Hazardous decomposition products

Thermal decomposition can lead to release of irritating gases and vapours.  
Other hazardous decomposition products may be formed.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No. 1272/2008

#### Acute toxicity

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### Component

Acute oral toxicity  
Trinexapac-ethyl  
95266-40-3 : LD50 Oral: 4.210 mg/kg  
Species: Rat  
Remarks: Single dose

### Component

Acute inhalation toxicity  
Trinexapac-ethyl  
95266-40-3 : LD50: > 5,3 mg/l  
Exposure time: 4 h  
Species: Rat  
Remarks: Nose only.

### Component

Acute dermal toxicity  
Trinexapac-ethyl  
95266-40-3 : LD50 Dermal: > 4.000 mg/kg  
Species: Rat  
Remarks: 24 h

### Skin corrosion/irritation

#### Component

Skin irritation  
Trinexapac-ethyl  
95266-40-3 : Species: Rabbit  
Results: No skin irritation  
Exposure time: 4 h

### Serious eye damage/eye irritation

#### Component

Eye irritation  
Trinexapac-ethyl  
95266-40-3 : Species: Rabbit  
Results: No eye irritation  
Remarks: Single dose

### Respiratory or skin sensitization

#### Component

Sensitisation  
Trinexapac-ethyl  
95266-40-3 : Results: The product is a skin sensitizer, sub-category 1B.

### Germ cell mutagenicity

#### Component

Trinexapac-ethyl : In vivo tests did not show mutagenic effects.

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## Carcinogenicity

### Component

Trinexapac-ethyl  
95266-40-3 : Animal testing did not show any carcinogenic effects., The substance is considered not likely to pose a carcinogenic risk to humans.

## Reproductive toxicity

### Component

Effects on fertility

Trinexapac-ethyl  
95266-40-3 : Species: Rat  
General toxicity parent: NOAEL: 106,2 mg/kg bw/day  
General toxicity F1: NOAEL: 662,9 mg/kg bw/day  
General toxicity F2: NOAEL: 662,9 mg/kg bw/day

Effects on foetal development

Trinexapac-ethyl  
95266-40-3 : Species: Rat  
General Toxicity Maternal: NOAEL: >= 1.000 mg/kg bw/day  
Developmental Toxicity: NOAEL: 200 mg/kg bw/day

Species: Rabbit  
General Toxicity Maternal: NOAEL: 60 mg/kg bw/day  
Developmental Toxicity: NOAEL: 60 mg/kg bw/day

## Specific target organ toxicity - single exposure

### Component

Trinexapac-ethyl  
95266-40-3 : Remarks: No data available

## Specific target organ toxicity - repeated exposure

### Component

Trinexapac-ethyl  
95266-40-3 : Remarks: No data available

## Aspiration hazard

### Component

Trinexapac-ethyl : No data available

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## 11.2 Information on other hazards

### Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product

Toxicity to fish : LC50: 67,265 mg/l  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (Rainbow trout)

#### Product

Toxicity to daphnia and other aquatic invertebrates. : EC50: 30,09 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)

#### Product

Toxicity to algae and aquatic plants : ErC50: 150,985 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (Green algae)

: ErC50: 13,4 mg/l  
Exposure time: 14 d  
Species: Lemna gibba (Gibbous duckweed)

#### Component

M-Factor Chronic aquatic toxicity

Trinexapac-ethyl : 1  
95266-40-3

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### Component

Toxicity to fish (Chronic toxicity)

Trinexapac-ethyl : 0,41 mg/l  
95266-40-3 Exposure time: 35 d  
Species: Pimephales promelas (Fathead minnow)  
Test Type: Flow-through test

### Component

Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity)

Trinexapac-ethyl : 2,4 mg/l  
95266-40-3 Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: Flow-through test

## 12.2 Persistence and degradability

### Component

Stability in soil

Trinexapac-ethyl : DT50: 0,72 d  
95266-40-3

## 12.3 Bioaccumulative potential

### Component

Bioaccumulation

Trinexapac-ethyl : Bioconcentration factor (BCF): 6  
95266-40-3 Remarks: BCF unit = L/kg wwt for whole fish tissue.

### Component

Partition coefficient n-octanol/water

Trinexapac-ethyl : Log Pow: 1,5 (25 °C)  
95266-40-3 pH: 5  
: Log Pow: -0,29 (25 °C)  
pH: 6,9  
Log Pow: -2,1 (25 °C)  
pH: 8,9

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### 12.4 Mobility in soil

Trinexapac-ethyl : Koc: 60  
95266-40-3 Koc unit: mL/g

### 12.5 Results of PBT and vPvB assessment

#### Product

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).  
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

### 12.6 Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

#### Component

Additional ecological information

Trinexapac-ethyl : No additional information available.  
95266-40-3

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of in accordance with the European Directives on waste and hazardous waste.  
Dispose of in accordance with local regulations.  
The product should not be allowed to enter drains, water courses or the soil.

Contaminated packaging : Triple rinse containers.  
Do not re-use empty containers.  
Store containers and offer for recycling of material when in accordance with the local regulations.

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADR : UN 3082

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**IMDG** : UN 3082  
**IATA** : UN 3082

### 14.2 UN proper shipping name

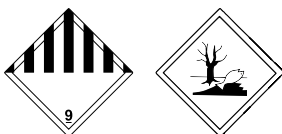
**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Trinexapac-ethyl)

**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Trinexapac-ethyl)

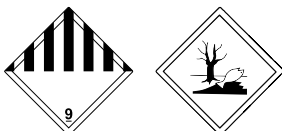
**IATA** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Trinexapac-ethyl)

### 14.3 Transport hazard class(es)

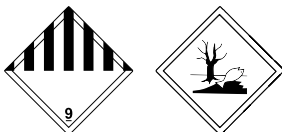
**ADR** : 9



**IMDG** : 9



**IATA** : 9



### 14.4 Packing group

**ADR**  
Packing group : III  
Hazard identification No : 90  
Labels : 9  
Tunnel restriction code : (-)  
Limited quantity : 5,00 L

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

**IATA (Cargo)**

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Packing instruction (cargo aircraft) : 964  
Maximum quantity : 450,00 L  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous dangerous substance or article

### **IATA (Passenger)**

Packing instruction (passenger aircraft) : 964  
Maximum quantity : 450,00 L  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous dangerous substance or article

### **14.5 Environmental hazards**

#### **ADR**

Environmentally hazardous : Yes

#### **IATA (Passenger)**

Environmentally hazardous : Yes

#### **IATA (Cargo)**

Environmentally hazardous : Yes

### **14.6 Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

Major Accident Hazard Legislation : Legislation on the control of major-accident hazards involving dangerous substances  
E2

#### **SEVESO**

SEVESO category: Hazardous to the Aquatic Environment in Category Chronic 2

### **15.2 Chemical safety assessment**

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



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## SECTION 16: Other information

### Full text of hazard statements referred to under Section 2 and 3.

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

### Full text of other abbreviations

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; ATE – Acute toxicity estimate; BCF - Bioconcentration factor; bw – Body weight; EC number – European Community number; ECx – Concentration associated with x % response; EmS – Emergency Schedule; ErCx – Concentration associated with x % growth rate response; GLP – Good Laboratory Practice; IATA – International Air Transport Association; IC50 – Half maximal inhibitory concentration; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50 % of a test population (Median Lethal Dose); M-factor – Multiplying factor; N.O.S. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; OECD – Organization for Economic Co-operation and Development; OEL – Occupational exposure limit; PBT – Persistent, Bioaccumulative and Toxic substance; SCL – Specific Concentration Limit; TWA – Time-weighted average; UFI – Unique formula identifier; UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

### Other information

Other information : Update of section 1.4

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.