



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product: **ETHYL ACRYLATE**

Page: 1 / 10

SDS No.: 001188-001 (Version 3.1)

 Date 30.01.2015 (*Cancel and replace* : 15.11.2012)

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the product

Substance name:

REACH Registration Name: ethyl acrylate

REACH Registration Number: 01-2119459301-46-0004

EC Nr: 205-438-8

CAS-No.: 140-88-5

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

Use of the Substance/Mixture :

Sector of use :	Product category :
Polymerization at downstream user sites SU 8,9: Manufacture of bulk, large scale substances (including petroleum products); manufacture of fine chemicals, SU12: Manufacture of plastics products, including compounding and conversion	PC32: Polymer preparations and compounds, PC19: Intermediate
Use as an intermediate at downstream user site SU 8,9: Manufacture of bulk, large scale substances (including petroleum products); manufacture of fine chemicals, SU12: Manufacture of plastics products, including compounding and conversion	PC19: Intermediate
Injection as odorant SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites, SU23: Electricity, steam, gas water supply and sewage treatment	PC28: Perfumes, fragrances
Formulation and (re)packing of substances and mixtures SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites, SU 10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)	PC28: Perfumes, fragrances

1.3. Details of the supplier of the safety data sheet

Supplier	Arkema Acrylics 420 rue d'Estienne d'Orves 92705 Colombes Cedex, FRANCE Telephone: +33 (0)1 49 00 80 80 Telefax: +33 (0)1 49 00 83 96 http://www.arkema.com pars-drp-fds@arkema.com
E-mail address	
E-mail address : Exposure scenario	arkema-acrylics-reach-uses@arkema.com

1.4. Emergency telephone number

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008):

Flammable liquids, 2, H225

Inhalation: Acute toxicity, 3, H331

Dermal: Acute toxicity, 4, H312

Oral: Acute toxicity, 4, H302

Skin irritation, 2, H315

Eye irritation, 2, H319

Skin sensitisation, 1, H317

Inhalation: Specific target organ toxicity - single exposure, 3, Respiratory Tract, H335

Chronic aquatic toxicity, 3, H412

Classification (Directive 67/548/EEC):

F; R11
Xn; R20/21/22
Xi; R36/37/38
R43

Additional information:

For the full text of the R, H, EUH-phrases mentioned in this Section, see Section 16.

2.2. Label elements

Label elements (REGULATION (EC) No 1272/2008):

Hazardous components which must be listed on the label:

No. in ANNEXE : 607-032-00-X

ethyl acrylate

Hazard
pictograms:



Signal word:

Danger

Hazard statements:

H225 : Highly flammable liquid and vapour.
H331 : Toxic if inhaled.
H312 : Harmful in contact with skin.
H302 : Harmful if swallowed.
H315 : Causes skin irritation.
H319 : Causes serious eye irritation.
H317 : May cause an allergic skin reaction.
H335 : May cause respiratory irritation.
H412 : Harmful to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 : Avoid breathing gas/mist/vapours/spray.
P280 : Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311 : Call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P332 + P313 : If skin irritation occurs: Get medical advice/ attention.

Storage:

P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

Potential health effects:

Ingestion could cause nausea, vomiting, sore throat, stomach-ache
Inhalation: At high vapour/fog concentrations : Nausea Vomiting Olfactory problems
Skin contact: Slight sensitizer.

Environmental Effects:

Toxic to aquatic fauna and flora. Readily biodegradable. Practically not bioaccumulable

Physical and chemical hazards:

Highly flammable. Polymerization is exothermic and can degenerate into an uncontrolled reaction. Vapours may form explosive mixture with air.
Decomposition products: See chapter 10

Other:

Results of PBT and vPvB assessment : According to REACH regulation, annex XIII, the substance does not meet PBT and vPvB criteria.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Chemical Name ¹	EC-No.	CAS-No.	Concentration	Classification Directive 67/548/EEC	Classification REGULATION (EC) No 1272/2008
Ethyl acrylate (N° ANNEX: 607-032-00-X)	205-438-8	140-88-5	>= 99,8 %	F; R11 Xn; R20/21/22 Xi; R36/37/38 R43	Flam. Liq.2; H225 Acute Tox.4 (Oral); H302 Acute Tox.3 (Inhalation); H331 Acute Tox.4 (Dermal); H312 Skin Irrit.2; H315 Eye Irrit.2; H319 Skin Sens.1; H317 STOT SE3; H335 Aquatic Chronic3; H412

¹: See chapter 14 for Proper Shipping Name

4. FIRST AID MEASURES

4.1. & 4.2. Description of necessary first-aid measures & Most important symptoms/effects, acute and delayed:

General advice:

Take off immediately all contaminated clothing. Wash contaminated clothing before re-use.

Inhalation:

Move to fresh air. Oxygen or artificial respiration if needed. In case of persistent problems : Call a Poison Control Center.

Skin contact:

Wash immediately, abundantly and thoroughly with soap and water. If skin irritation persists, call a physician.

Eye contact:

Wash well-open eyes immediately, abundantly and thoroughly with water. Consult an ophthalmologist.

Ingestion:

In case of problems : Consult a doctor.

Protection of first-aiders:

Protective suit. For any intervention, wear appropriate breathing apparatus.

4.3. Indication of immediate medical attention and special treatment needed, if necessary : No data available.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Foam, Carbon dioxide (CO₂), Dry powder

5.2. Special hazards arising from the substance or mixture:

Highly flammable
Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Vapours may form explosive mixtures with air., Formation of toxic products through combustion:, Carbon oxides

5.3. Advice for firefighters:

Specific methods:

Remove all sources of ignition. Cool containers/tanks with water spray. Hose down gases, fumes and/or dust with water.

Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Evacuate non-essential staff and those not equipped with individual protection apparatus. Prohibit all sources of sparks and ignition - Do not smoke. Keep people away from and upwind of spill/leak. Prohibit contact with skin and eyes and inhalation of vapours. Use personal protective equipment.

6.2. Environmental precautions:

Do not release into the environment. Do not let product enter drains. Dam up with sand or inert earth (do not use combustible materials).

6.3. Methods and materials for containment and cleaning up:

Recovery:

Pump into a labelled inert emergency tank. Absorb the remainder with an inert absorbent material. Rinse with water. Recover waste water for processing later.

Elimination:

Destroy the product by incineration (in accordance with local and national regulations).

6.4. Reference to other sections: None.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling:

Technical measures/Precautions:

Storage and handling precautions applicable to products: Liquid. Highly flammable Toxic. Irritant. With irritating vapours. Sensitizing. Provide appropriate exhaust ventilation at machinery. Do not use activated carbons to capture odours of acrylates. Provide showers, eye-baths. Provide water supplies near the point of use. To allow close by. Full mask. Combination filter EN 141: A2B2E2K2. Provide electrical earthing of equipment.

Safe handling advice:

Transfer by pump or atmospheric pressure containing between 5 and 7% of oxygen. Never bring into contact with an atmosphere made of lifeless gas only. Take precautionary measures against static discharges. Keep well away from naked flames. Use only explosion-proof equipment. Put lids on containers immediately after use.

Hygiene measures:

Prohibit contact with skin and eyes and inhalation of vapours. When using do not eat, drink or smoke. Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities:

Keep in a well-ventilated place. Keep away from heat and sources of ignition. Do not smoke. Maintain in contact with an atmosphere containing between 5 and 7% of oxygen. Never use a system in contact with inert atmospheres for storage. Protect against light. Avoid long storage period. Inhibitor levels should be maintained. Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Provide a catch-tank in a bunded area. Monitor the product clarity. Continuously monitor product temperature. Control free oxygen level : free oxygen is essential to stabilize the product.

Storage temperature: < 30 °C

Incompatible products:

Combustible material Free radical generators Peroxides Strong oxidizing agents Strong acids strong bases Activated carbons (explosive reaction)

Packaging material:

Recommended: Stainless steel, Ordinary steel, Aluminium, High density polyethylene (HDPE), Polypropylene, Polytetrafluoroethylene (PTFE)

To be avoided: Rubber

7.3. Specific end use(s): None.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure Limit Values

Ethyl acrylate

Source	Date	Value type	Value (ppm)	Value (mg/m3)	Remarks
EU ELV	12 2009	TWA	5	21	Indicative value
EU ELV	12 2009	STEL	10	42	Indicative value
ACGIH (US)	02 2012	TWA	5	—	—
ACGIH (US)	02 2012	STEL	15	—	—

Derived No Effect Level (DNEL):

End Use	Inhalation	Ingestion	Skin contact
Workers	21 mg/m3 (LT, LE)		0,92 mg/cm2 (ST, LE)
Consumers	2,5 mg/m3 (LT, LE)		0,92 mg/cm2 (ST, LE)

LE : Local effects, **SE :** Systemic effects, **LT :** Long term, **ST :** Short term

Predicted No Effect Concentration:

Compartment:	Value:
Fresh water	2,72 µg/l

Marine water	0,272 µg/l
Water (Intermittent release)	11 µg/l
Effects on waste water treatment plants	10 mg/l
Fresh water sediment	0,0213 mg/kg dw
Marine sediment	0,0213 mg/kg dw
Soil	1 mg/kg dw
Oral (Secondary Poisoning)	0,01 g/kg food

8.2. Exposure controls:

General protective measures:

Ensure sufficient air exchange and/or exhaust in work areas

Personal protective equipment:

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Recommended Filter type: A2B2E2K2

High concentrations or prolonged activity: Self contained Breathing Apparatus

Hand protection:

Splash contact, intermittent and prolonged Neoprene gloves

Glove thickness: 1,1 mm

According to permeation index EN 374: 5 (time elapsed > 240 mins)

Eye/face protection:

Safety glasses with side-shields

Skin and body protection:

At the workplace : Protective suit, Boots

Intervention at incident: anti-acid suit

Environmental exposure controls:

See chapter 6

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:

Physical state (20°C):

liquid

Colour:

colourless

Odour:

pungent

Olfactory threshold:

No data available.

pH:

Not applicable

Melting point/range :

-71,2 °C

Boiling point/boiling range :

99,8 °C (Pressure 1.013 hPa)

Flash point:

closed cup: 9 °C (1.013 hPa) (Standard NF M 07 036 - DIN 51755)

Evaporation rate:

No data available.

Flammability (solid, gas):

Lower flammable limit :

1,4 %(V)

Upper flammable limit :

15,8 %(V)

Vapour pressure:

40 hPa , at 20,9 °C

100 hPa , at 39 °C

200 hPa , at 54,5 °C

Vapour density:

4,16 kg/m³ , at 20 °C

Relative vapour density:

3,4 Reference substance: Air=1

Density:

922 kg/m³ , at 20 °C

Relative density (Water=1):

0,922 at 20 °C

Water solubility:

20 g/l at 20 °C

Partition coefficient: n-octanol/water:

log Kow : 1,18 , at 25 °C (OECD Test Guideline 107)

Auto-ignition temperature:

372 °C at 1.013 hPa

Decomposition temperature:

No data available.

Viscosity, dynamic:

0,535 mPa.s , at 25 °C

Explosive properties:

Explosivity:

Not relevant (due to the chemical structure)

Oxidizing properties:

Not relevant (due to the chemical structure)

9.2. Other data:

Solubility in other solvents:

Soluble in most organic solvents

Enthalpy:

Polymerization enthalpy: -77,8 KJ/kg

Molecular weight: 100,12 g/mol
Refractive index: 1,407 (at 20 °C)

10. STABILITY AND REACTIVITY

10.1. & 10.2. Reactivity & Chemical stability:

Presence of a polymerization inhibitor: p-Methoxyphenol (Hydroquinone monomethyl Ether) or hydroquinone
The product is stable if inhibitor concentration is maintained at : 15 mg/kg
Control free oxygen level : free oxygen is essential to stabilize the product.

10.3. Possibility of hazardous reactions:

Polymerization is exothermic and can degenerate into an uncontrolled reaction.

10.4. Conditions to avoid:

Protect from light. Keep away from heat and sources of ignition.
Temperatures above 30 °C

10.5. Incompatible materials to avoid:

Combustible material, Free radical generators, Peroxides, Strong oxidizing agents, Strong acids and strong bases,, Activated carbons (explosive reaction)

10.6. Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products:, Carbon oxides

11. TOXICOLOGICAL INFORMATION

All available data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

11.1. Information on toxicological effects:

Acute toxicity:

Inhalation: <ul style="list-style-type: none">• In man :• In animals :	Toxic by inhalation. At high vapour/mist concentrations, Nausea, Vomiting LC50/4 h/Rat: < 9,14 mg/l (Method: OECD Test Guideline 403) (vapour) LC50/1 h/Rat: 25,8 mg/l (Method: OECD Test Guideline 403) (vapour)
Ingestion: <ul style="list-style-type: none">• In man :• In animals :	Harmful if swallowed. Ingestion could cause nausea, vomiting, sore throat, stomach-ache LD50/Rat: 1.120 mg/kg (Method: OECD Test Guideline 401)
Dermal: <ul style="list-style-type: none">• In animals :	Slightly harmful in contact with skin LD50/Rat: 3.049 - 5.000 mg/kg (Method: OECD Test Guideline 402)

Local effects (Corrosion / Irritation / Serious eye damage):

Skin contact: <ul style="list-style-type: none">• In animals :	Irritating to skin. Irritating to skin. (OECD Test Guideline 404, Rabbit)
Eye contact: <ul style="list-style-type: none">• In animals :	Irritating to eyes. Irritating to eyes. (Draize Test, Rabbit)

Respiratory or skin sensitisation:

Inhalation:	No data available.
Skin contact: <ul style="list-style-type: none">• In man :• In animals :	Weak skin sensitizer Skin allergy was observed., Possible cross sensitization with other acrylates and methacrylates Weak sensitizing effects by skin contact. (Method : OECD Test Guideline 429 LLNA: Local Lymph Node Assay, Mouse)

CMR effects :

Mutagenicity: Results from in vitro and in vivo tests do not lead to considering the product as genotoxic

In vitro

Ames test: Inactive (Method: OECD Test Guideline 471)
In vitro gene mutations test on mammalian cells: Inconclusive results (Method: OECD Test Guideline 476)
Tests for chromosome aberrations in vitro on mammalian cells: Inactive (Method: OECD Test Guideline 473)

In vivo

Micronucleus test in vivo mouse: Inactive (Method: OECD Test Guideline 474)

Carcinogenicity:

Available experimental data indicates no particular problems for man. (in the usual conditions of use)

- In man : Absence of causal relationship between incidence of cancer and exposure to product in epidemiological studies
- In animals : Absence of carcinogenic effects (rat, mouse, lifetime, By inhalation)
Absence of carcinogenic effects (Mouse, lifetime, dermal route)
Following repeated force-feeding with the product, stomach tumours have been found in rats due to local irritation of the gastric mucous membrane (rat, mouse, 2 years, By oral route)

Reproductive toxicity:

Fertility:

Based on the available data, the substance is not suspected of having reprotoxic potential.
Through analogy with a comparable product :, Absence of toxic effects on fertility

METHYL ACRYLATE :

- In animals : Two-generation study: No toxic effects for reproduction
NOAEL (Parental toxicity): 18 mg/m³
NOAEL (Fertility): 269 mg/m³
(Method: OECD Test Guideline 416, Rat, By inhalation)

Foetal development:

- In animals : **Absence of toxic effects for foetal development (at non toxic concentrations for the mothers)**
Exposure during pregnancy: Absence of toxic effects for foetal development at non toxic maternal doses
NOAEL (Developmental Toxicity): 0,82 mg/l
NOAEL (Maternal Toxicity): 0,41 mg/l
(Method: OECD Test Guideline 414, Rat, By inhalation)

Specific target organ toxicity :

Single exposure :

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Exposure routes : Inhalation
Target Organs : respiratory tract

Inhalation:

- In animals : Irritating to respiratory system.
Decrease of respiratory frequency by 50 % , Rat (vapour, 1,3 mg/l)

Repeated exposure:

- In man : **The substance or mixture is not classified as specific target organ toxicant, repeated exposure.**
By inhalation: Effects of excessive exposure may include :

Risk of irritation of respiratory system, Olfactory problems
- In animals : By inhalation: (rat, mouse, Chronic)

Atrophy of nasal epithelium, Target organs: At high dose :, Upper respiratory tract, NOAEL= 0,02 mg/l
Maximum concentration with no systemic toxic effect
NOAEL= 0,1 mg/l
By oral route: (Rat, 90 Days)
Local effects due to an irritant effect, Target organs: Target organs at high doses:, Stomach, NOAEL= 55mg/kg/d

Aspiration hazard:

Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicology Assessment: All available and relevant data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

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

12.1. Acute toxicity :

Fish: **Toxic to fish.**
LC50, 96 h (Oncorhynchus mykiss) : 4,6 mg/l (Method: US EPA)

Aquatic invertebrates: **Toxic to daphnia.**
EC50, 48 h (Daphnia magna (Water flea)) : 7,9 mg/l (Method: OECD Test Guideline 202)

Aquatic plants: **Toxic to algae.**
EC50, 72 h (Pseudokirchneriella subcapitata) : 4,5 mg/l (Method: OECD Test Guideline 201, Growth inhibition)

Microorganisms:
EC10, 72 h (Activated sludge) : > 100 mg/l

Aquatic toxicity / Long term toxicity:

Aquatic invertebrates: NOEC, 21 d (Daphnia magna (Water flea)) : 0,19 mg/l (Method: OECD Test Guideline 211, reproduction)

12.2. Persistence and degradability :

Stability in water:
: Half-life: 1.500 Days at 25 °C and pH 7

Biodegradation (In water): **Readily biodegradable**
Readily biodegradable: 80 - 90 % after 28 d (Method: OECD Test Guideline 310)

Photodegradation (In air):
Degradation by radicals: Direct photolysis (Half-life) : 35,4 h, Method: calculated

12.3. Bioaccumulative potential :

Bioaccumulation: **Practically not bioaccumulable**
Partition coefficient: n-octanol/water: log Kow : 1,18 , at 25 °C (Method: OECD Test Guideline 107)

12.4. Mobility in soil - Distribution among environmental compartments:

Distribution among environmental compartments :
Water: 12,4 %
Air: 87,5 %
Soil: 0,01 %
sediment: 0,02 %
(Method: Calculation according Mackay, Level I)

Vapor pressure:
40 hPa, 20,9 °C
100 hPa, 39 °C
200 hPa, 54,5 °C

Absorption / desorption: **Slight adsorption**
log Koc: 0,59 - 1,93 (Method: measured)

12.5. Results of PBT and vPvB assessment :

According to REACH regulation, annex XIII, the substance does not meet PBT and vPvB criteria.

12.6. Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment:

- Disposal of product:**
Destroy the product by incineration (in accordance with local and national regulations).
- Disposal of packaging:**
Destroy packaging by incineration at an approved waste disposal site. In accordance with local and national regulations.

14. TRANSPORT INFORMATION

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Product Name: Ethyl acrylate
Ship type: 2
Pollution category: Y

Regulation	UN number	Proper shipping name	Class	Label	PG	Environmentally hazardous	Other information
ADR	1917	ETHYL ACRYLATE, STABILIZED	3	3	II	no	
ADN	1917	ETHYL ACRYLATE, STABILIZED	3	3	II	no	
RID	1917	ETHYL ACRYLATE, STABILIZED	3	3	II	no	
IATA Cargo	1917	Ethyl acrylate, stabilized	3	3	II	no	
IATA Passenger	1917	Ethyl acrylate, stabilized	3	3	II	no	
IMDG	1917	ETHYL ACRYLATE, STABILIZED	3	3	II	no	EmS Number: F-E, S-D

15. REGULATORY INFORMATION

Safety data sheets: according to Regulation (EC) No. 1907/2006

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

15.2. Chemical Safety Assessment:

A Chemical Safety Assessment has been carried out for this substance.

INVENTORIES:

- EINECS:
This substance has been registered according to Regulation (EC) No. 1907/2006 (REACH).
- TSCA:
Conforms to
- DSL:
All components of this product are on the Canadian DSL.
- IECSC (CN):
Conforms to
- ENCS (JP):
Conforms to
- ISHL (JP):
Conforms to
- KECI (KR):
Conforms to
- PICCS (PH):
Conforms to
- AICS:
Conforms to
- NZIOC:
Conforms to

16. OTHER INFORMATION

Full text of R, H, EUH-phrases referred to under sections 2 and 3

- R11
Highly flammable.
- R20/21/22
Harmful by inhalation, in contact with skin and if swallowed.
- R36/37/38
Irritating to eyes, respiratory system and skin.
- R43
May cause sensitisation by skin contact.
- H225
Highly flammable liquid and vapour.
- H302
Harmful if swallowed.
- H312
Harmful in contact with skin.
- H315
Causes skin irritation.
- H317
May cause an allergic skin reaction.
- H319
Causes serious eye irritation.
- H331
Toxic if inhaled.
- H335
May cause respiratory irritation.
- H412
Harmful to aquatic life with long lasting effects.

Further information When used in formulations, contact us for labelling.

Update:

Safety datasheet sections which have been updated:		Type:
1	Use of the Substance, E-mail address, Emergency telephone number	Additions
2	Classification and labelling, Potential health effects, Physical and chemical hazards, Environmental Effects	Additions, Revisions
3	Classification and labelling, Amended according to REGULATION (UE) N°286/2011	Additions, Revisions
4	Inhalation, Protection of first-aiders	Revisions
5	Special hazards arising from the substance or mixture	Revisions, Additions
6	Personal precautions, protective equipment and emergency procedures	Additions, Revisions
7	Technical measures/Precautions, Storage, Incompatible products, Safe handling advice	Additions, Revisions, Deletions
8	Exposure Limit Values, Predicted No Effect Concentration, Respiratory protection	Revisions, Additions
9	Flash point, Henry constant	Deletions
10	Incompatible products	Additions
11	Inhalation, Sensitisation, mutagenic effects, Reproductive toxicity, Specific Target Organ Toxicant	Additions, Deletions, Revisions
12	Ecotoxicology Assessment, Stability in water, Persistence and degradability	Additions, Revisions
14	Transport information	Additions
15	Inventories	Additions, Revisions

Thesaurus:

NOAEL : No Observed Adverse Effect Level (NOAEL)
LOAEL : Lowest Observed Adverse Effect Level (LOAEL)
bw : Body weight
food : oral feed
dw : Dry weight
vPvB : very Persistent and very Bioaccumulative
PBT : Persistent, Bioaccumulative and Toxic

This information applies to the PRODUCT AS SUCH and conforming to specifications of ARKEMA. In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear. The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes. The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive. It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product. It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

NB: In this document the numerical separator of the thousands is the "." (point), the decimal separator is "," (comma).