H2FOAM LITE V24 002

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

1.1 Product identifier

Trade name : H2FOAM LITE V24 002

Unique Formula Identifier (UFI) : 4QCT-V02M-200X-1JDG

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

Use of the Substance/Mixture : Component of a Polyurethane System.

Recommended restrictions on use : For industrial use only.

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Building Solutions (Europe) BV
Address : Grijpenlaan 18
3078 Tienen
Belgium
Telephone : +3228806233

E-mail address of person responsible for the SDS : dsmrz@huntsmanbuilds.com

1.4 Emergency telephone

Emergency telephone : +420 770 102 479
National Poisons Information Centre (NPIC): + 353 (01) 8092166 (8am-10pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Hazardous ingredients which must be listed on the label:

Reaction products of phosphoryl trichloride and 2-methyloxirane
N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine
2-[2-(dimethylamino)ethoxy]ethanol

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.

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 ingredients

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Reaction products of phosphoryl trichloride and 2-methyloxirane	1244733-77-4 - 01-2119486772-26	Acute Tox. 4; H302 Carc. 2; H351 Aquatic Chronic 3; H412	>= 30 - < 50

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine	6711-48-4 229-761-9 01-2119964469-20	Acute Tox. 4; H302 Acute Tox. 3; H311 Skin Corr. 1C; H314 Eye Dam. 1; H318 Acute toxicity estimate Acute oral toxicity: 500 mg/kg Acute dermal toxicity: 370 mg/kg	>= 5 - < 10
2-[2-(dimethylamino)ethoxy]ethanol	1704-62-7 216-940-1	Acute Tox. 4; H312 Skin Corr. 1C; H314 Eye Dam. 1; H318	>= 1 - < 3

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Treat symptomatically.
Get medical attention if symptoms occur.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
No action shall be taken involving any personal risk or without suitable training.

If inhaled : If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : Wash with water and soap as a precaution.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.
Causes serious eye damage.
Suspected of causing cancer.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides
Oxides of phosphorus
Hydrogen chloride

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
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 : Neutralize with acid.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labeled containers.

Advice on common storage : Do not store near acids.

Further information on storage stability : Stable under normal conditions.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
2,2'-Oxydiethanol, propoxylated	Workers	Inhalation	Long-term systemic effects	98 mg/m3
	Workers	Dermal	Long-term systemic effects	13,9 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	29 mg/m3
	Consumers	Dermal	Long-term systemic effects	8,3 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	8,3 mg/kg bw/day
Sucrose. propoxylated	Workers	Inhalation	Long-term systemic effects	98 mg/m3
	Workers	Dermal	Long-term systemic effects	13,9 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	29 mg/m3
	Consumers	Dermal	Long-term systemic effects	8,3 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	8,3 mg/kg bw/day
2-[2-(dimethylamino)ethoxy]ethanol	Workers	Inhalation	Long-term systemic effects	24,7 mg/m3
	Workers	Dermal	Long-term systemic effects	4,9 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1,25 mg/kg bw/day
N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine	Workers	Inhalation	Long-term systemic effects	1,47 mg/m3
	Workers	Dermal	Long-term systemic effects	0,17 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,36 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,08 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,08 mg/kg bw/day
Reaction products of phosphoryl trichloride and 2-methyloxirane	Workers	Inhalation	Long-term systemic effects	8,2 mg/m3
	Workers	Inhalation	Acute systemic	22,6 mg/m3

			effects	
	Workers	Dermal	Long-term systemic effects	2,91 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1,45 mg/m3
	Consumers	Inhalation	Acute systemic effects	5,6 mg/m3
	Consumers	Dermal	Long-term systemic effects	1,041 mg/kg bw/day
	Consumers	Oral	Acute systemic effects	2 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,52 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
2,2'-Oxydiethanol, propoxylated	Fresh water	0,2 mg/l
	Sea water	0,02 mg/l
	Freshwater - intermittent	1 mg/l
	Fresh water sediment	0,52 mg/kg dry weight (d.w.)
	Sea sediment	0,052 mg/kg dry weight (d.w.)
	Soil	0,067 mg/kg dry weight (d.w.)
	Sewage treatment plant	100 mg/l
Sucrose. propoxylated	Fresh water	0,2 mg/l
	Sea water	0,02 mg/l
	Freshwater - intermittent	1 mg/l
	Fresh water sediment	0,543 mg/kg dry weight (d.w.)
	Sea sediment	0,054 mg/kg dry weight (d.w.)
	Soil	0,074 mg/kg dry weight (d.w.)
	Sewage treatment plant	1000 mg/l
2-[2-(dimethylamino)ethoxy]ethanol	Fresh water	0,1 mg/l
	Freshwater - intermittent	1 mg/l
	Sea water	0,01 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	0,75 mg/kg dry weight (d.w.)
	Sea sediment	0,075 mg/kg dry weight (d.w.)
	Soil	0,091 mg/kg dry weight (d.w.)
N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine	Fresh water	0,008 mg/l
	Freshwater - intermittent	0,079 mg/l
	Sea water	0,001 mg/l
	Fresh water sediment	0,164 mg/kg dry weight (d.w.)

	Sea sediment	0,016 mg/kg dry weight (d.w.)
	Sewage treatment plant	10 mg/l
	Soil	0,028 mg/kg dry weight (d.w.)
Reaction products of phosphoryl trichloride and 2-methyloxirane	Fresh water	0,32 mg/l
	Remarks:Assessment Factors	
	Sea water	0,032 mg/l
	Remarks:Assessment Factors	
	Sewage treatment plant	19,1 mg/l
	Remarks:Assessment Factors	
	Fresh water sediment	11,5 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Sea sediment	1,15 mg/kg dry weight (d.w.)
	Remarks:Equilibrium method	
	Soil	0,34 mg/kg
	Remarks:Assessment Factors	
	Oral	11,6 mg/kg
	Remarks:Assessment Factors	

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
Equipment should conform to EN 14387

Filter type : Combined particulates, acidic gas/vapor and organic vapor type (AE-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Form : No data is available on the product itself.

Color : white

Odor	:	No data is available on the product itself.
Odor Threshold	:	No data is available on the product itself.
Melting point/freezing point	:	No data is available on the product itself.
Boiling point	:	No data is available on the product itself.
Flammability	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Flash point	:	> 100 °C
Autoignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.
pH	:	11
Viscosity		
Viscosity, dynamic	:	1 000 mPa.s
Solubility(ies)		
Water solubility	:	No data is available on the product itself.
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Vapor pressure	:	No data is available on the product itself.
Density	:	1,116 g/cm3
Relative density	:	No data is available on the product itself.
Relative vapor density	:	No data is available on the product itself.
Particle characteristics	:	No data is available on the product itself.

9.2 Other information

No data is available on the product itself.

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No hazards to be specially mentioned.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 1 042 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2 000 mg/kg
Method: Calculation method

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Acute oral toxicity : LD50 (Rat, male and female): 500 - 632 mg/kg
GLP: yes
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 7,19 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2 000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Acute oral toxicity : LD50 (Rat): > 1 250 - < 1 600 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit, male): 370 mg/kg
Method: OECD Test Guideline 402

2-[2-(dimethylamino)ethoxy]ethanol:

Acute oral toxicity : LD50 (Rat, male and female): 2 150 - 3 830 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is low toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 392.2 mg/m3
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): 1 663 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Assessment : No skin irritation
Method : In Vitro Membrane Barrier Test Method for Skin Corrosion - CORROSITEX
Result : No skin irritation
GLP : no

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Species : in vitro membrane barrier
Method : OECD Test Guideline 435
Result : Corrosive after 1 to 4 hours of exposure

2-[2-(dimethylamino)ethoxy]ethanol:

Species : Rabbit
Assessment : Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up

to 14 days.
Method : OECD Test Guideline 404
Result : Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Species : Rabbit
Assessment : No eye irritation
Method : OECD Test Guideline 405
Result : No eye irritation
GLP : yes

2-[2-(dimethylamino)ethoxy]ethanol:

Species : Rabbit
Assessment : Risk of serious damage to eyes.
Method : OECD Test Guideline 405
Result : Irreversible effects on the eye
GLP : yes

Respiratory or skin sensitisation

Skin sensitisation

Not classified due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin
Species : Mouse
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 429
Result : Did not cause sensitisation on laboratory animals.
GLP : yes

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Exposure routes : Skin
Species : Guinea pig
Method : Directive 67/548/EEC, Annex V, B.6.
Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: Metabolic activation
Method: OECD Test Guideline 476
Result: positive
GLP: yes

Test Type: reverse mutation assay
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: comet assay
Species: Rat (male)
Application Route: Oral
Exposure time: 3h00 or 24h00
Dose: 750 and 1500 mg/kg bw/day
Result: negative
GLP: yes

Germ cell mutagenicity-Assessment : Did not show mutagenic effects in animal experiments.

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: mouse lymphoma cells
Concentration: 30 - 1022 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: reverse mutation assay
Test system: Salmonella tryphimurium and E. coli
Concentration: 0 - 6000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

2-[2-(dimethylamino)ethoxy]ethanol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Carcinogenicity

Suspected of causing cancer.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Carcinogenicity - Assessment : Limited evidence of a carcinogenic effect.

Reproductive toxicity

Not classified due to lack of data.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: LOAEL: 99 mg/kg body weight
General Toxicity F1: LOAEL: ca. 99 mg/kg body weight
Method: OECD Test Guideline 416
Result: Animal testing did not show any effects on fertility.

Effects on fetal development : Test Type: Pre-natal
Species: Rabbit, female
Application Route: Oral
Dose: 75/200/500 milligram per kilogram
Duration of Single Treatment: 23 d
General Toxicity Maternal: NOEL: 500 mg/kg body weight
Developmental Toxicity: NOAEL: 500 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects
GLP: yes

Test Type: Pre-natal
Species: Rat, female
Application Route: Oral
Dose: 0/162.5/325/650 milligram per kilogram
Duration of Single Treatment: 15 d
General Toxicity Maternal: NOEL: >= 650 mg/kg body weight
Developmental Toxicity: NOAEL: >= 650 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

GLP: yes

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Effects on fertility : Test Type: Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
Dose: 0, 10, 50 and 200 mg/kg
General Toxicity Parent: NOAEL: 200 mg/kg body weight
General Toxicity F1: NOAEL: 200 mg/kg body weight
Method: OECD Test Guideline 421
Result: negative

Effects on fetal development : Test Type: Pre-natal
Species: Rabbit
Application Route: Oral
Dose: 15, 50, 130 mg/kg
General Toxicity Maternal: NOAEL: 130 mg/kg body weight
Embryo-fetal toxicity.: NOAEL: 130 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

2-[2-(dimethylamino)ethoxy]ethanol:

Effects on fertility : Test Type: Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOAEL: 250 mg/kg body weight
General Toxicity F1: NOAEL: 750 mg/kg body weight
Method: OECD Test Guideline 422

Effects on fetal development : Test Type: Pre-natal
Species: Rat, female
Dose: 100/300/1000 milligram per kilogram
Duration of Single Treatment: 14 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 1 000 mg/kg body weight
Method: OECD Test Guideline 414

Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Dose: 80/250/750 milligram per kilogram
Duration of Single Treatment: 30 - 61 d
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: 250 mg/kg body weight
Developmental Toxicity: NOAEL: 750 mg/kg body weight
Method: OECD Test Guideline 422

STOT-single exposure

Not classified due to lack of data.

STOT-repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Species	:	Rat, male and female
NOAEL	:	ca. 2500 ppm
Application Route	:	oral (feed)
Exposure time	:	13 weeks
Number of exposures	:	7 days/week
Dose	:	0/800/2500/7500/20000 ppm
Target Organs	:	Liver, Thyroid

Species	:	Rat, male and female
NOAEL	:	100 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	28 d
Number of exposures	:	7 days/week
Dose	:	10, 100 or 1000 mg/kg
Method	:	Regulation (EC) No. 440/2008, Annex, B.7
GLP	:	yes

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Species	:	Rat, male and female
NOAEL	:	50 mg/kg/d
Application Route	:	Ingestion
Exposure time	:	672 h
Number of exposures	:	7 d
Method	:	Subacute toxicity

2-[2-(dimethylamino)ethoxy]ethanol:

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Oral
Dose	:	80/250/750 mg/kg bw/day
Method	:	OECD Test Guideline 422
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Oral
Exposure time	:	90 d
Dose	:	80/250/750 mg/kg bw/d
Method	:	OECD Test Guideline 408
GLP	:	yes

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Not classified due to lack of data.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

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

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 56,2 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
GLP: yes

LC50 (Pimephales promelas (fathead minnow)): 51 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
GLP: no

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 131 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic : ErC50 (Selenastrum capricornutum (green algae)): 82 mg/l

plants		Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 201 GLP: yes NOECr (Selenastrum capricornutum (green algae)): 13 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 201 GLP: yes ErC10 (Selenastrum capricornutum (green algae)): 42 mg/l Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 201 GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): 784 mg/l Exposure time: 3 h Test Type: static test Analytical monitoring: no Test substance: Fresh water Method: ISO 8192 GLP: yes EC10 (activated sludge): 191 mg/l Exposure time: 3 h Test Type: static test Analytical monitoring: no Test substance: Fresh water Method: ISO 8192 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 32 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Analytical monitoring: yes Test substance: Fresh water Method: OECD Test Guideline 202 GLP: yes
Toxicity to soil dwelling organisms	:	NOEC: 53 mg/kg Exposure time: 56 d Species: Eisenia fetida (earthworms) Test substance: Synthetic Method: OECD Test Guideline 222 GLP:yes

Plant toxicity	:	NOEC: 17 mg/kg Exposure time: 21 d Test substance: Natural Analytical monitoring: yes Method: OECD Test Guideline 208 GLP:yes

Ecotoxicology Assessment

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

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): 21,4 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 50,3 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 7,9 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (activated sludge): > 1 000 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 3,64 mg/l Exposure time: 22 d Species: Daphnia Test Type: semi-static test Method: Daphnia magna Reproduction Test GLP: yes

Ecotoxicology Assessment

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

2-[2-(dimethylamino)ethoxy]ethanol:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 320 mg/l End point: mortality Exposure time: 96 h Test Type: static test

Test substance: Fresh water
Method: DIN 38412

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 160 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1 000 mg/l
Exposure time: 3 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Biodegradability : Test Type: aerobic
Inoculum: Sewage (STP effluent)
Result: Inherently biodegradable.
Biodegradation: 95 %
Exposure time: 64 d
Method: OECD Test Guideline 302A
Test substance: Fresh water
GLP: yes

Test Type: aerobic
Inoculum: Sewage (STP effluent)
Concentration: 20 mg/l
Result: Not biodegradable
Biodegradation: 14 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 301E
Test substance: Fresh water
GLP: yes

Test Type: aerobic
Inoculum: activated sludge
Concentration: 4 mg/l
Result: Inherently biodegradable.
Biodegradation: 13 %
Exposure time: 28 d
Method: Directive 67/548/EEC, Annex V, C.6.

Test substance: Fresh water
GLP: no

Stability in water : Degradation half life (DT50): > 1 yr (25 °C)
pH: 6,5
Remarks: Fresh water

Photodegradation : Test Type: Air
Rate constant: < .00001
Degradation (direct photolysis): 50 %

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

2-[2-(dimethylamino)ethoxy]ethanol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge, non-adapted
Concentration: 400 mg/l
Result: Readily biodegradable.
Biodegradation: 10 - 20 %
Related to: Dissolved organic carbon (DOC)
Exposure time: 28 d
Method: OECD Test Guideline 302B

Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: 2 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Exposure time: 42 d
Bioconcentration factor (BCF): 0,8 - 14
Test substance: Fresh water
Method: OECD Test Guideline 305C

Partition coefficient: n-octanol/water : log Pow: 2,68 (30 °C)
pH: 7,1
Method: Partition coefficient
GLP: yes

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Partition coefficient: n-octanol/water	:	log Pow: 0,214 (21,7 °C) pH: 12,8 Method: OECD Test Guideline 107

2-[2-(dimethylamino)ethoxy]ethanol:

Partition coefficient: n-octanol/water	:	log Pow: -0,778 (20 °C) Method: OECD Test Guideline 107

12.4 Mobility in soil

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Distribution among environmental compartments	:	Koc: 576 Method: Directive 67/548/EEC, Annex V, C.19
		Koc: 780 Method: OECD Test Guideline 106

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Distribution among environmental compartments	:	Koc: 172

2-[2-(dimethylamino)ethoxy]ethanol:

Mobility	:	Medium: Water Content: 99,9 % Method: Calculation, Mackay Level I Fugacity Model
	:	Medium: Air Content: 0,05 % Method: Calculation, Mackay Level I Fugacity Model

12.5 Results of PBT and vPvB assessment

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

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.

12.6 Endocrine disrupting properties

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

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

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

Components:

Reaction products of phosphoryl trichloride and 2-methyloxirane:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

N'-[3-(dimethylamino)propyl]-N,N-dimethylpropane-1,3-diamine:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

2-[2-(dimethylamino)ethoxy]ethanol:

Assessment : Not persistent, mobile, and toxic (PMT).
Not very persistent and very mobile (vPvM).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : Not regulated as dangerous goods

RID : Not regulated as dangerous goods

IMDG : Not regulated as dangerous goods

IATA : Not regulated as dangerous goods

14.2 UN proper shipping name

ADR : Not regulated as dangerous goods

RID	:	Not regulated as dangerous goods
IMDG	:	Not regulated as dangerous goods
IATA	:	Not regulated as dangerous goods

14.3 Transport hazard class(es)

ADR	:	Not regulated as dangerous goods
RID	:	Not regulated as dangerous goods
IMDG	:	Not regulated as dangerous goods
IATA	:	Not regulated as dangerous goods

14.4 Packing group

ADR	:	Not regulated as dangerous goods
RID	:	Not regulated as dangerous goods
IMDG	:	Not regulated as dangerous goods
IATA (Cargo)	:	Not regulated as dangerous goods
IATA (Passenger)	:	Not regulated as dangerous goods

14.5 Environmental hazards

Not regulated as dangerous goods

14.6 Special precautions for user

Remarks	:	Not classified as dangerous in the meaning of transport 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

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59).	:	This product does not contain substances of very high concern.
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3 Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving		Not applicable

dangerous substances.

Other regulations:

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
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

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H311	:	Toxic in contact with skin.
H312	:	Harmful in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H351	:	Suspected of causing cancer.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Carc.	:	Carcinogenicity
Eye Dam.	:	Serious eye damage
Skin Corr.	:	Skin corrosion

Further information

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H302	Calculation method
Eye Dam. 1	H318	Calculation method
Carc. 2	H351	Calculation method
Aquatic Chronic 3	H412	Calculation method

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

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