



Safety Data Sheet according to (EC) No 1907/2006

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Tangit FP 550 Fire Protection

SDS No. : 188383
V002.4

Revision: 21.05.2015

printing date: 02.11.2016

Replaces version from: 06.06.2014

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

1.1. Product identifier

Tangit FP 550 Fire Protection Part A

Contains:

Diphenylmethane diisocyanate, isomers and homologues
1,2-Ethanediamine, phosphate

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

Intended use:
Foam, 2-component without propellant gas

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA
Henkelstr. 67
40589 Düsseldorf

Germany

Phone: +49 (211) 797 0
Fax-no.: +49 (211) 798 4008

ua-productsafety.de@henkel.com

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

Further information is available at Poison Control Centers.

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (CLP):**

Carcinogenicity	Category 2
H351 Suspected of causing cancer.	
Acute toxicity	Category 4
H332 Harmful if inhaled.	
Route of Exposure: inhalation: vapour	
Respiratory sensitizer	Category 1
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Specific target organ toxicity - single exposure	Category 3
H335 May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Category 2
H373 May cause damage to organs through prolonged or repeated exposure.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	
Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	

2.2. Label elements**Label elements (CLP):****Hazard pictogram:****Signal word:**

Danger

Hazard statement:

H351 Suspected of causing cancer.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statement:

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P260 Do not breathe vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection.
P501 Dispose of contents/container in accordance with national regulation.

2.3. Other hazards

Information according to XVII. 56 REACH

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (i.e. type A1 according to standard EN 14387) is used.

Pregnant women should absolutely avoid inhalation and skin contact.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General chemical description:**

Hardening component of a 2-component PU adhesive

Base substances of preparation:

4,4'-Methylenediphenyl diisocyanate (MDI)

Inorganic fillers

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	202-966-0	> 50 %	Carc. 2 H351 Acute Tox. 4; Inhalation H332 STOT RE 2 H373 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Resp. Sens. 1 H334 Skin Sens. 1 H317
1,2-Ethanediamine, phosphate 14852-17-6	238-914-9	< 20 %	Skin Sens. 1 H317

For full text of the H - statements and other abbreviations see section 16 "Other information".**Substances without classification may have community workplace exposure limits available.****SECTION 4: First aid measures****4.1. Description of first aid measures**

General information:

In case of adverse health effects seek medical advice.

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Delayed effects possible after inhalation.

Skin contact:

Fresh foam : Wipe off affected skin area immediately with a soft cloth and then remove residues with vegetable oil; apply skin care product. Cured foam can be removed only mechanically.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remains (intensive smarting, sensivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:

Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice.

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

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

May cause an allergic skin reaction.

Causes serious eye irritation.

SKIN: Redness, inflammation.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of fire, isocyanate vapors may be formed.

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.

Ensure adequate ventilation.

Wear protective equipment.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove mechanically.

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure that workrooms are adequately ventilated.

Hygiene measures:

Do not eat, drink or smoke while working.

Wash hands before work breaks and after finishing work.

Remove any dirt that gets onto the skin with vegetable oil; skin care.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place.

Ensure that storage and workrooms are adequately ventilated.

Temperatures between 0 °C and + 30 °C

Do not store together with oxidants.

Do not store together with food or other consumables (coffee, tea, tobacco, etc.).

7.3. Specific end use(s)

Foam, 2-component without propellant gas

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational Exposure Limits**

Valid for
Germany

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
4,4'-Methylenediphenyl diisocyanate 101-68-8			Short Term Exposure Classification:	Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8		0,05	Exposure limit(s):	=2= If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see Number 2.7).	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			STEL (Short Term Exposure Limit) factor:	1 Substance listed with both Peak factor and STEL factor. The Peak factor is supplied with the AGW values.	TRGS 900
4,4'-Methylenediphenyl diisocyanate 101-68-8			Skin designation:	Can be absorbed through the skin.	TRGS 900

Biological Exposure Indices:

None

8.2. Exposure controls:

Respiratory protection:

Suitable breathing mask when there is inadequate ventilation.

Combination filter: ABEKP

This recommendation should be matched to local conditions.

Hand protection:

Recommended are gloves made from Nitril rubber (Material thickness >0,1 mm, Perforation time < 30s).Gloves should be replaced after each short time contact or contamination. Available at laboratory specialized trade or at pharmacies / chemist's shops.

In the case of longer contact protective gloves made from nitrile rubber are recommended according to EN 374.

Perforation time > 480 minutes

material thickness > 0.4 mm

In the case of longer and repeated contact please note that in practice the penetration times may be considerably shorter than those determined according to EN 374. The protective gloves must always be checked for their suitability for use at the specific workplace (e.g. mechanical and thermal stress, product compatibility, antistatic effects, etc.). The gloves must be replaced immediately at the first signs of wear and tear. The information provided by the manufacturers and given in the relevant trade association regulations for industrial safety must always be observed. We recommend that a hand care plan is drawn up in cooperation with a glove manufacturer and the trade association in accordance with the local operating conditions.

Eye protection:
Goggles which can be tightly sealed.

Skin protection:
Suitable protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid thixotropic beige
Odor	neutral
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density (23 °C (73.4 °F))	1,15 - 1,29 g/cm ³
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (23 °C (73.4 °F))	Reacts slowly with water to liberate carbon dioxide gas.
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reaction with water, formation of CO₂
Pressure build-up in closed containers.
Reaction with water, alcohols, amines.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Humidity

10.5. Incompatible materials

See section reactivity

10.6. Hazardous decomposition products

At higher temperatures isocyanate may be released.
Carbon dioxide is generated under contact with moisture, leading to pressure in the cans. Danger of cans bursting!

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Cross-reactions with other isocyanate compounds are possible.

Persons suffering from allergic reactions to isocyanates should avoid contact with the product.

May cause damage to organs through prolonged or repeated exposure.

Inhalative toxicity:

Harmful if inhaled.

May cause respiratory irritation.

Skin irritation:

Causes skin irritation.

Eye irritation:

Causes serious eye irritation.

Sensitizing:

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity:

Suspected of causing cancer

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 10.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
1,2-Ethanediamine, phosphate 14852-17-6	LD50	> 2.000 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LD50	> 9.400 mg/kg	dermal		rat	OECD Guideline 402 (Acute Dermal Toxicity)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	NOAEL=0,2 mg/m ³	inhalation: aerosol	2 y6 h per d, 5 d per week	rat	OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

SECTION 12: Ecological information

General ecological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Do not empty into drains, soil or bodies of water.

12.1. Toxicity

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	LC50	> 1.000 mg/l	Fish	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,2-Ethanediamine, phosphate 14852-17-6	LC50	115,7 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,2-Ethanediamine, phosphate 14852-17-6	EC50	17 mg/l	Daphnia	48 h	Daphnia magna	EU Method C.2 (Acute Toxicity for Daphnia)
1,2-Ethanediamine, phosphate 14852-17-6	EC50	645 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
	NOEC	3,2 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
1,2-Ethanediamine, phosphate 14852-17-6	readily biodegradable	aerobic	94 %	EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test)

12.3. Bioaccumulative potential / 12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Diphenylmethane diisocyanate, isomers and homologues 9016-87-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Empty PU foam canisters should be returned in the original carton to PDR GmbH, D-95449 Thurnau (free of charge collection service under tel.: 0800-783 6736, Fax: 0800-783 6737) for recycling. They can also be delivered to any general cargo collection point of the Deutsche Bahn AG. Individual containers should be disposed of at communal collection points.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information**14.1. UN number**

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packaging group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
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RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information

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

VOC content 0,00 %
(VOCV 814.018 VOC regulation
CH)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: 1, slightly water-endangering product. (German VwVwS of May 17, 1999)
Classification in conformity with the calculation method

BG regulations, rules, infos:

BG data sheet: BGI 524 Hazardous substances: polyurethane production
and processing / isocyanates (M 044)

BG regulation: BGV B 1 Handling hazardous substances

Storage class according to TRGS 510: 10

General remarks (DE): This product is in scope of the German regulation
"ChemikalienVerbotsVerordnung"

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.

Further information:

The product is intended for industrial use.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Label elements (DPD):

Xn - Harmful



Risk phrases:

- R20 Harmful by inhalation.
- R36/37/38 Irritating to eyes, respiratory system and skin.
- R40 Limited evidence of a carcinogenic effect.
- R42/43 May cause sensitization by inhalation and skin contact.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Safety phrases:

- S23 Do not breathe vapour.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S46 If swallowed, seek medical advice immediately and show this container or label.
- S51 Use only in well-ventilated areas.

Additional labeling:

Contains isocyanates. See information supplied by the manufacturer.

Contains:

- Diphenylmethane diisocyanate, isomers and homologues,
- 1,2-Ethanediamine, phosphate

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.



Safety Data Sheet according to (EC) No 1907/2006

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Tangit FP 550 Fire Protection

SDS No. : 188382
V002.4

Revision: 21.05.2015

printing date: 02.11.2016

Replaces version from: 05.12.2008

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

1.1. Product identifier

Tangit FP 550 Fire Protection Part B

Contains:

Ethylenediamine, ethoxylated and propoxylated MW <930

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

Intended use:

Foam, 2-component without propellant gas

1.3. Details of the supplier of the safety data sheet

Henkel AG & Co. KGaA

Henkelstr. 67

40589 Düsseldorf

Germany

Phone: +49 (211) 797 0

Fax-no.: +49 (211) 798 4008

ua-productsafety.de@henkel.com

1.4. Emergency telephone number

The Henkel information service also provides an around-the-clock telephone service on phone no.+49-(0)211-797-3350 for exceptional cases.

Further information is available at Poison Control Centers.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Skin irritation	Category 2
H315 Causes skin irritation.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Skin sensitizer	Category 1
H317 May cause an allergic skin reaction.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Signal word:**

Warning

Hazard statement:H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.**Precautionary statement:**P260 Do not breathe vapours.
P280 Wear protective gloves/eye protection.
P501 Dispose of contents/container in accordance with national regulation.**2.3. Other hazards**

None if used properly.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General chemical description:**

Resin of a 2-component PU adhesive

Base substances of preparation:Polyester/ether alcohols
Inorganic fillers**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	237-158-7 01-2119486772-26	< 20 %	Acute Tox. 4; Oral H302 Aquatic Chronic 3 H412
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	500-047-1 01-2119471488-26	>= 1- < 10 %	Eye Irrit. 2 H319 Skin Sens. 1 H317
a-methyl-1H-imidazole-1-ethanol 37788-55-9	253-668-2	< 2 %	Skin Corr. 1B H314
Phosphorus 7723-14-0	231-768-7 01-2119489913-23	< 2 %	Flam. Sol. 1 H228 Aquatic Chronic 3 H412
2,2'-dimorpholinyl-diethyl ether 6425-39-4	229-194-7 01-2119969278-20	< 2 %	Eye Irrit. 2 H319
Antimony trioxide 1309-64-4	215-175-0	< 1 %	Carc. 2 H351

For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of adverse health effects seek medical advice.

Inhalation:

Move to fresh air, consult doctor if complaint persists.

Skin contact:

Fresh foam : Wipe off affected skin area immediately with a soft cloth and then remove residues with vegetable oil; apply skin care product. Cured foam can be removed only mechanically.

Eye contact:

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remains (intensive smarting, sensivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

Ingestion:

Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice.

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

May cause an allergic skin reaction.

Causes serious eye irritation.

SKIN: Redness, inflammation.

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

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO) and carbon dioxide (CO₂) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Wear protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective equipment.

Avoid skin and eye contact.

Danger of slipping on spilled product.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Remove with liquid-absorbing material (sand, peat, sawdust).

Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid skin and eye contact.

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Store in sealed original container protected against moisture.

Frost-sensitive

Keep away from heat and direct sunlight.

Avoid strictly temperatures below + 2°C and above + 30 °C.

Do not store together with food or other consumables (coffee, tea, tobacco, etc.).

7.3. Specific end use(s)

Foam, 2-component without propellant gas

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Germany

None

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	aqua (freshwater)					0,64 mg/L	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	aqua (marine water)					0,064 mg/L	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	aqua (intermittent releases)					0,51 mg/L	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	sediment (freshwater)					13,4 mg/kg	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	sediment (marine water)					1,34 mg/kg	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	soil					1,7 mg/kg	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	STP					7,84 mg/L	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	oral					< 11,6 mg/kg food	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	aqua (freshwater)					0,085 mg/L	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	aqua (marine water)					0,0085 mg/L	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	aqua (intermittent releases)					1,03 mg/L	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	STP					1000 mg/L	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	sediment (freshwater)					0,211 mg/kg	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	sediment (marine water)					0,0211 mg/kg	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	soil					0,0569 mg/kg	
Phosphorus 7723-14-0	aqua (freshwater)					0,00105 mg/L	
Phosphorus 7723-14-0	aqua (intermittent releases)					0,0105 mg/L	
Phosphorus 7723-14-0	STP					10 mg/L	
Phosphorus 7723-14-0	sediment (freshwater)					100 mg/kg	
Phosphorus 7723-14-0	soil					12,5 mg/kg	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (freshwater)					0,1 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (marine water)					0,01 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	aqua (intermittent releases)					1 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	sediment (freshwater)					8,2 mg/kg	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	sediment (marine water)					0,82 mg/kg	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	STP					100 mg/L	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	soil					1,58 mg/kg	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	oral					10 mg/kg	

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	Workers	Dermal	Acute/short term exposure - systemic effects		8 mg/kg	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	Workers	Dermal	Long term exposure - systemic effects		2,08 mg/kg bw/day	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	Workers	Inhalation	Acute/short term exposure - systemic effects		22,4 mg/m ³	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	Workers	Inhalation	Long term exposure - systemic effects		5,82 mg/m ³	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	general population	Dermal	Acute/short term exposure - systemic effects		4 mg/kg	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	general population	Dermal	Long term exposure - systemic effects		1,04 mg/kg bw/day	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	general population	oral	Long term exposure - systemic effects		0,52 mg/kg bw/day	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	general population	Inhalation	Acute/short term exposure - systemic effects		11,2 mg/m ³	
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	general population	Inhalation	Long term exposure - systemic effects		1,46 mg/m ³	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	Workers	Dermal	Long term exposure - systemic effects		13,9 mg/kg	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	Workers	Inhalation	Long term exposure - systemic effects		98 mg/m ³	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	general population	Dermal	Long term exposure - systemic effects		8,3 mg/kg	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	general population	Inhalation	Long term exposure - systemic effects		29 mg/m ³	
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	general population	oral	Long term exposure - systemic effects		8,3 mg/kg	
Phosphorus 7723-14-0	Workers	Dermal	Long term exposure - systemic effects		30 mg/kg bw/day	
Phosphorus 7723-14-0	Workers	Inhalation	Long term exposure - systemic effects		4 mg/m ³	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	Workers	Inhalation	Long term exposure - systemic effects		7,28 mg/m ³	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	Workers	Dermal	Long term exposure - systemic effects		1 mg/kg bw/day	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	Inhalation	Long term exposure - systemic effects		1,8 mg/m ³	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	Dermal	Long term exposure - systemic effects		0,5 mg/kg bw/day	
2,2'-Dimorpholinyl-diethyl ether 6425-39-4	general population	oral	Long term exposure - systemic effects		0,5 mg/kg bw/day	

Biological Exposure Indices:

Ingredient [Regulated substance]	Parameters	Biological specimen	Sampling time	Conc.	Basis of biol. exposure index	Remark	Additional Information
Aluminium hydroxide 21645-51-2	Aluminum	Urine	Sampling time: End of shift.	200 µg/l	DE BAT		

8.2. Exposure controls:

Respiratory protection:

Suitable breathing mask when there is inadequate ventilation.

Combination filter: ABEKP

This recommendation should be matched to local conditions.

Hand protection:

Recommended are gloves made from Nitril rubber (Material thickness >0,1 mm, Perforation time < 30s).Gloves should be replaced after each short time contact or contamination. Available at laboratory specialized trade or at pharmacies / chemist's shops.

In the case of longer contact protective gloves made from nitrile rubber are recommended according to EN 374.

Perforation time > 480 minutes

material thickness > 0.4 mm

In the case of longer and repeated contact please note that in practice the penetration times may be considerably shorter than those determined according to EN 374. The protective gloves must always be checked for their suitability for use at the specific workplace (e.g. mechanical and thermal stress, product compatibility, antistatic effects, etc.). The gloves must be replaced immediately at the first signs of wear and tear. The information provided by the manufacturers and given in the relevant trade association regulations for industrial safety must always be observed. We recommend that a hand care plan is drawn up in cooperation with a glove manufacturer and the trade association in accordance with the local operating conditions.

Eye protection:

Goggles which can be tightly sealed.

Skin protection:

Suitable protective clothing

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance	liquid viscous dark red
Odor	slightly, of amine
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	No data available / Not applicable
Flash point	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density (20 °C (68 °F))	1,25 - 1,35 g/cm ³
Bulk density	No data available / Not applicable
Viscosity (Brookfield; 20 °C (68 °F))	35.000 - 50.000 mPa.s
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (23 °C (73.4 °F); Solvent: Water)	Insoluble
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable

Vapor density
Oxidising properties

No data available / Not applicable
No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

None if used for intended purpose.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

None if used for intended purpose.

10.5. Incompatible materials

None if used properly.

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Skin irritation:

Causes skin irritation.

Eye irritation:

Causes serious eye irritation.

Sensitizing:

May cause an allergic skin reaction.

Acute oral toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LD50	1.150 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	LD50	> 5.000 mg/kg	oral		rat	
Phosphorus 7723-14-0	LD50	> 15.000 mg/kg	oral		rat	OECD Guideline 401 (Acute Oral Toxicity)
2,2'-dimorpholinyldiethyl ether 6425-39-4	LD50	2.025 mg/kg	oral		rat	
Antimony trioxide 1309-64-4	LD50	> 20.000 mg/kg	oral		rat	

Acute inhalative toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LC50	> 7,19 mg/l		4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Acute dermal toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LD50	> 2.000 mg/kg	dermal		rat	OECD Guideline 402 (Acute Dermal Toxicity)
2,2'-dimorpholinyl-diethyl ether 6425-39-4	LD50	3.038 mg/kg	dermal		rabbit	

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	slightly irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2,2'-dimorpholinyl-diethyl ether 6425-39-4	not irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	slightly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2,2'-dimorpholinyl-diethyl ether 6425-39-4	irritating	24 h	rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	not sensitising	Guinea pig maximisation test	guinea pig	Magnusson and Kligman Method

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	negative	bacterial gene mutation assay	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	NOAEL=800 - 7500 ppm	oral: feed	90 daysad libitem	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

SECTION 12: Ecological information

General ecological information:

Do not empty into drains, soil or bodies of water.

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

12.1. Toxicity

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	LC50	56,2 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	EC50	131 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	EC50	73 mg/l	Algae	96 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	NOEC	32 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Phosphorus 7723-14-0	NOEC	0,7 µg/l	Fish	30 d	Pimephales promelas	
Phosphorus 7723-14-0	LC50 EC50	0,021 mg/l 30 µg/l	Fish Daphnia	96 h 48 h	Pimephales promelas Daphnia magna	
2,2'-dimorpholinyl diethyl ether 6425-39-4	LC50	> 2.150 mg/l	Fish	96 h		OECD Guideline 203 (Fish, Acute Toxicity Test)
Antimony trioxide 1309-64-4	LC50	> 1.000 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Antimony trioxide 1309-64-4	EC50	> 1.000 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Antimony trioxide 1309-64-4	EC50	67 mg/l	Algae	72 h	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)

12.2. Persistence and degradability

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	under test conditions no biodegradation observ	aerobic	0 %	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
2,2'-dimorpholinyl diethyl ether 6425-39-4	readily biodegradable	aerobic	> 60 %	OECD 301 A - F

12.3. Bioaccumulative potential / 12.4. Mobility in soil

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Tris(2-chloro-1-methylethyl) phosphate 13674-84-5	3,33				20 °C	EU Method A.8 (Partition Coefficient)
2,2'-dimorpholinyl diethyl ether 6425-39-4	-1,31					

12.5. Results of PBT and vPvB assessment

Hazardous components CAS-No.	PBT/vPvB
Ethylenediamine, ethoxylated and propoxylated MW <930 26316-40-5	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Phosphorus 7723-14-0	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
2,2'-dimorpholinyl-diethyl ether 6425-39-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Antimony trioxide 1309-64-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Dispose of waste and residues in accordance with local authority requirements.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

SECTION 14: Transport information**14.1. UN number**

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packaging group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC content 0,00 %
(VOCV 814.018 VOC regulation
CH)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

National regulations/information (Germany):

WGK: 2, water-endangering product. (German VwVwS of May 17, 1999)
Classification in conformity with the calculation method
Storage class according to TRGS 510: 10

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H228 Flammable solid.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

Further information:

The product is intended for industrial use.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Label elements (DPD):

Xi - Irritant



Risk phrases:

R43 May cause sensitisation by skin contact.

Safety phrases:

S51 Use only in well-ventilated areas.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

Contains:

Ethylenediamine, ethoxylated and propoxylated MW <930

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.