Safety data sheet
according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

2K-Foam 400 ml
Art.: 9076939

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

Relevant identified uses of the substance or mixture:
Adhesive sealant
Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet

GB
BTI Befestigungstechnik GmbH & Co. KG, Salzstr. 51, 74653 Ingelfingen, Germany
Phone: +49 7940 141 256, Fax: +49 7940 141 9256
Stefan.Haug@bti.de, www.bti.de

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:
+49 (0) 700 / 24 112 112 (BRC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Acute Tox.	4	H332-Harmful if inhaled.
Eye Irrit.	2	H319-Causes serious eye irritation.
STOT SE	3	H335-May cause respiratory irritation.
Skin Irrit.	2	H315-Causes skin irritation.
Resp. Sens.	1	H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Sens.	1	H317-May cause an allergic skin reaction.
STOT RE	2	H373-May cause damage to organs through prolonged or repeated exposure.
Carc.	2	H351-Suspected of causing cancer.
Aerosol	1	H222-Extremely flammable aerosol.
Aerosol	1	H229-Pressurised container: May burst if heated.

2.2 Label elements
Labeling according to Regulation (EC) 1272/2008 (CLP)

Danger

H332-Harmful if inhaled. H319-Causes serious eye irritation. H335-May cause respiratory irritation. H315-Causes skin irritation. H334-May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317-May cause an allergic skin reaction. H373-May cause damage to organs through prolonged or repeated exposure. H351-Suspected of causing cancer. H222-Extremely flammable aerosol. H229-Pressurised container: May burst if heated.

P201-Obtain special instructions before use. P210-Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211-Do not spray on an open flame or other ignition source. P251-Do not pierce or burn, even after use. P260-Do not breathe vapours or spray. P280-Wear protective gloves / protective clothing and eye protection / face protection. P284-Wear respiratory protection.
P304+P340-IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308+P313-IF exposed or concerned: Get medical advice / attention.
P410+P412-Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

EUH204-Contains isocyanates. May produce an allergic reaction.

Without adequate ventilation, formation of explosive mixtures may be possible.
Diphenylmethanediisocyanate, isomeres and homologues

2.3 Other hazards
The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

SECTION 3: Composition/information on ingredients

PU-foam
3.1 Substance
n.a.
3.2 Mixture

Diphenylmethanediisocyanate, isomeres and homologues	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP	---
CAS	9016-87-9

content %	25-50
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H332 Eye Irrit. 2, H319 STOT SE 3, H335 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT RE 2, H373

Tris(2-chlorisopropyl)phosphate	
Registration number (REACH)	01-2119447716-31-XXXX
Index	---
EINECS, ELINCS, NLP	237-158-7
CAS	13674-84-5
content %	10-<25
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302

Dimethyl ether	**Substance for which an EU exposure limit value applies.**
Registration number (REACH)	01-2119472128-37-XXXX
Index	603-019-00-8
EINECS, ELINCS, NLP	204-065-8
CAS	115-10-6
content %	1-10
Classification according to Regulation (EC) 1272/2008 (CLP)	Flam. Gas 1, H220

Reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and Phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and Phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester	
Registration number (REACH)	01-2119486772-26-XXXX
Index	---
EINECS, ELINCS, NLP	911-815-4 (REACH-IT List-No.)
CAS	(13674-84-5)
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302

Impurities, test data and additional information may have been taken into account in classifying and labelling the product.
For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!
Inhalation
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.
Skin contact
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.
Eye contact
Remove contact lenses.
Wash thoroughly for several minutes using copious water. Seek medical help if necessary.
Ingestion
Rinse the mouth thoroughly with water.
Do not induce vomiting - give copious water to drink. Consult doctor immediately.
4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
The following may occur:
In case of sensitivity, concentrations below the limit value may already result in asthmatic symptoms.
Watering eyes
Coughing
Irritation of the respiratory tract
Irritant to mucosa of the nose and throat
Respiratory distress
Oedema of the lungs
Dizziness
Headaches
Drying of the skin.
Dermatitis (skin inflammation)
Discoloration of the skin
Other dangerous properties cannot be ruled out.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.
4.3 Indication of any immediate medical attention and special treatment needed
n.c.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
CO2
Foam
Extinction powder
Water jet spray
Unsuitable extinguishing media
None known
5.2 Special hazards arising from the substance or mixture
In case of fire the following can develop:
Oxides of carbon

Oxides of nitrogen
Oxides of phosphorus
Hydrocyanic acid (hydrogen cyanide)
Hydrogen chloride
Danger of bursting (explosion) when heated
Explosive vapour/air mixture
Dangerous vapours heavier than air.
In case of spreading near the ground, flashback to distance sources of ignition is possible.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
According to size of fire
Full protection, if necessary.
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove possible causes of ignition - do not smoke.
Ensure sufficient supply of air.
Avoid inhalation, and contact with eyes or skin.

6.2 Environmental precautions

Prevent from entering drainage system.
Prevent surface and ground-water infiltration, as well as ground penetration.

6.3 Methods and material for containment and cleaning up

If spray or gas escapes, ensure ample fresh air is available.
Active substance:
Allow product to harden.
Pick up mechanically and dispose of according to Section 13.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
Avoid inhalation of the vapours.
Keep away from sources of ignition - Do not smoke.
Take measures against electrostatic charging, if appropriate.
Do not use on hot surfaces.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
No contact with products of this type in case of allergies, asthma und chronic respiratory tract disorders.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Observe special regulations for aerosols!
Do not store with oxidizing agents.
Do not store with alkalis.
Do not store with acids.
Observe special storage conditions.
Keep protected from direct sunlight and temperatures over 50°C.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

GB	**Chemical Name**	Diphenylmethanediisocyanate, isomeres and homologues		Content %:25-50
WEL-TWA: 0,02 mg/m3 (Isocyanates, all (as -NCO))		WEL-STEL: 0,07 mg/m3 (Isocyanates, all (as -NCO))		---
Monitoring procedures: ---				
BMGV: 1 µmol urinary diamine/mol creatinine in urine (Isocyanate, post task)			Other information: Sen (Isocyanates, all (as -NCO))	

GB	**Chemical Name**	Dimethyl ether		Content %:1-10
WEL-TWA: 400 ppm (766 mg/m3) (WEL), 1000 ppm (1920 mg/m3) (EU)		WEL-STEL: 500 ppm (958 mg/m3) (WEL)		---
Monitoring procedures: - Compur - KITA-123 S (549 129)				
BMGV: ---			Other information: ---	

GB	**Chemical Name**	Isobutane		Content %:
WEL-TWA: 1000 ppm (EX) (ACGIH)		WEL-STEL: ---		---
Monitoring procedures: - Compur - KITA-113 SB(C) (549 368)				
BMGV: ---			Other information: ---	

GB	**Chemical Name**	Propane		Content %:
WEL-TWA: 1000 ppm (ACGIH)		WEL-STEL: ---		---
Monitoring procedures: - Compur - KITA-125 SA (549 954)				
BMGV: ---			Other information: ---	

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
(8) = Inhalable fraction (2017/164/EU). (9) = Respirable fraction (2017/164/EU). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
(8) = Inhalable fraction (2017/164/EU). (9) = Respirable fraction (2017/164/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information:

Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

8.2 Exposure controls

Diphenylmethanediisocyanate, isomeres and homologues						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	1	mg/l	
	Environment - marine		PNEC	0,1	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	10	mg/l	
	Environment - sewage treatment plant		PNEC	1	mg/l	
	Environment - soil		PNEC	1	mg/kg	
Consumer	Human - oral	Short term, local effects	DNEL	20	mg/kg bw/d	
Consumer	Human - inhalation	Short term, local effects	DNEL	0,05	mg/m3	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	0,05	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	0,025	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,025	mg/m3	
Consumer	Human - dermal	Short term, local effects	DNEL	17,2	mg/cm2	
Consumer	Human - dermal	Short term, systemic effects	DNEL	25	mg/kg bw/d	
Workers / employees	Human - inhalation	Short term, local effects	DNEL	0,1	mg/m3	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	0,1	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	0,05	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,05	mg/m3	
Workers / employees	Human - dermal	Short term, local effects	DNEL	28,7	mg/cm2	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	50	mg/kg bw/d	

Dimethyl ether

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,155	mg/l	
	Environment - sediment, freshwater		PNEC	0,681	mg/kg	
	Environment - soil		PNEC	0,045	mg/kg	
	Environment - sewage treatment plant		PNEC	160	mg/l	
	Environment - marine		PNEC	0,016	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	1,549	mg/l	
	Environment - sediment, marine		PNEC	0,069	mg/kg	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	471	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	1894	mg/m3	

Reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and Phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and Phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - sediment, marine		PNEC	1,34	mg/kg dw	
	Environment - freshwater		PNEC	0,64	mg/l	
	Environment - soil		PNEC	1,7	mg/kg dw	
	Environment - sediment		PNEC	13,4	mg/kg dw	
	Environment - sewage treatment plant		PNEC	7,84	mg/l	
	Environment - marine		PNEC	0,064	mg/l	
	Environment - sediment, marine		PNEC	1,34	mg/kg	
Industrial	Human - dermal	Long term, systemic effects	DNEL	2,08	mg/kg bw/day	
Industrial	Human - inhalation	Short term, systemic effects	DNEL	22,4	mg/m3	
Industrial	Human - inhalation	Long term, systemic effects	DNEL	5,28	mg/m3	
Industrial	Human - dermal	Short term, systemic effects	DNEL	8	mg/kg bw/day	

Consumer	Human - inhalation	Long term, systemic effects	DNEL	1,46	mg/m3	
Consumer	Human - inhalation	Short term, systemic effects	DNEL	11,2	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	1,04	mg/kg bw/d	
Consumer	Human - dermal	Short term, systemic effects	DNEL	4	mg/kg bw/d	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,52	mg/kg bw/d	

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. BS EN 14042.
BS EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).

Skin protection - Hand protection:
Chemical resistant protective gloves (EN 374).
Recommended
Polyethylene
(LDPE)
Minimum layer thickness in mm:
0,025
Permeation time (penetration time) in minutes:
10
Protective hand cream recommended.
The breakthrough times determined in accordance with EN 374 Part 3 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
If OES or MEL is exceeded.

Filter A2 P2 (EN 14387), code colour brown, white
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls
No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Aerosol. Active substance: liquid.
Colour:	According to specification
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	n.a.
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	>1 (Vapours heavier than air.)
Density:	n.a.
Bulk density:	n.a.
Solubility(ies):	Organic solvents, Yes
Water solubility:	Insoluble
Partition coefficient (n-octanol/water):	n.a.
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	n.a.
Explosive properties:	Product is not explosive. Possible build up of explosive/highly flammable vapour/air mixture.
Oxidising properties:	No

9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity
The product has not been tested.
10.2 Chemical stability
Stable with proper storage and handling.
10.3 Possibility of hazardous reactions
Polymerisation possible
10.4 Conditions to avoid
See also section 7.
Heating, open flame, ignition sources
Pressure increase will result in danger of bursting.
10.5 Incompatible materials
Amines
Bases
Acids
10.6 Hazardous decomposition products
See also section 5.2
No decomposition when used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Possibly more information on health effects, see Section 2.1 (classification).

2K-Foam 400 ml Art.: 9076939						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:	ATE	3,8	mg/l/4h			calculated value, Aerosol
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.

Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Diphenylmethanediisocyanate, isomeres and homologues						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	>10000	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>9400	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	0,49	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Aerosol, Does not conform with EU classification .
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Mild irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	Sensitising (skin contact)
Germ cell mutagenicity:					OECD 474 (Mammalian Erythrocyte Micronucleus Test)	Negative
Carcinogenicity:		1	mg/m3	Rat	OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	Positive
Reproductive toxicity:	NOAEL	12	mg/m3	Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative, Aerosol

Reproductive toxicity (Developmental toxicity):		4		Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Reproductive toxicity (Effects on fertility):				Rat	OECD 414 (Prenatal Developmental Toxicity Study)	Negative
Specific target organ toxicity - single exposure (STOT-SE):						Irritation of the respiratory tract
Specific target organ toxicity - repeated exposure (STOT-RE):	NOEC	0,2	mg/kg		OECD 453 (Combined Chronic Toxicity/Carcinogenicity Studies)	
Aspiration hazard:						No
Symptoms:						fever, coughing, headaches, nausea and vomiting., dizziness, breathing difficulties, laryngeal oedema, oedema of the lungs, chemical pneumonitis (condition similar to pneumonia), abdominal pain, diarrhoea
Specific target organ toxicity - single exposure (STOT-SE), inhalative:						Target organ(s): respiratory organs, May cause respiratory irritation.

Tris(2-chlorisopropyl)phosphate						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	1150-1750	mg/kg	Rat		

Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	4,6	mg/l/4h	Rat		Aerosol
Acute toxicity, by inhalation:	LC50	>7,19	mg/l/4h	Rat		Vapours
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Germ cell mutagenicity:					(Ames-Test)	Negative
Reproductive toxicity:				Rat		Negative
Symptoms:						respiratory distress, loss of hair, cramps, watering eyes

Dimethyl ether						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by inhalation:	LC50	164	mg/l/4h	Rat		
Acute toxicity, by inhalation:	LC50	308	mg/l/4h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Germ cell mutagenicity:					OECD 473 (In Vitro Mammalian Chromosome Aberration Test)	Negative
Germ cell mutagenicity:					OECD 477 (Genetic Toxicology - Sex-Linked Recessive Lethal Test in Drosophilia melanogaster)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:						Negative
Specific target organ toxicity - repeated exposure (STOT-RE):	NOAEC	47106		Rat	OECD 452 (Chronic Toxicity Studies)	Negative(2 a)

Symptoms:						unconsciousness, headaches, mucous membrane irritation, dizziness, nausea and vomiting., frostbite, gastrointestinal disturbances, respiratory distress, circulatory collapse

Reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and Phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and Phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	632	mg/kg	Rat		
Acute toxicity, by oral route:	LD50	>500-<2000	mg/kg	Rat	Regulation (EC) 440/2008 B.1 (ACUTE ORAL TOXICITY)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rabbit	OECD 402 (Acute Dermal Toxicity)	
Acute toxicity, by inhalation:	LC50	>7	mg/l/4h	Rat	OECD 403 (Acute Inhalation Toxicity)	Dust, Mist
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Not irritant
Respiratory or skin sensitisation:				Guinea pig	OECD 429 (Skin Sensitisation - Local Lymph Node Assay)	Not sensitizising
Germ cell mutagenicity:					(Ames-Test)	Negative
Germ cell mutagenicity:				Mouse	in vivo	Negative
Carcinogenicity:	LOAEL	52	mg/kg bw/d			

Carcinogenicity:						No indications of such an effect.
Reproductive toxicity:	LOAEL	99	mg/kg/d			
Reproductive toxicity (Developmental toxicity):	NOEL	571	mg/kg bw/d	Rat		
Specific target organ toxicity - single exposure (STOT-SE):						No
Specific target organ toxicity - repeated exposure (STOT-RE):	NOEL	>20	ppm	Rat		13w
Aspiration hazard:						Not to be expected
Symptoms:						ataxia, cramps

Isobutane						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Serious eye damage/irritation:				Rabbit		Not irritant
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Symptoms:						unconsciousness, frostbite, headaches, cramps, dizziness, nausea and vomiting.

Propane						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by inhalation:	LC50	658	mg/l/4h	Rat		
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative

Reproductive toxicity (Developmental toxicity):	NOAEC	21,641	mg/l		OECD 422 (Combined Repeated Dose Tox. Study with the Reproduction/Developm. Tox. Screening Test)	
Symptoms:						breathing difficulties, unconsciousness, frostbite, headaches, cramps, mucous membrane irritation, dizziness, nausea and vomiting.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

2K-Foam 400 ml Art.: 9076939							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Other adverse effects:							n.d.a.

Diphenylmethanediisocyanate, isomeres and homologues							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**

12.1. Toxicity to fish:	LC50	96h	>1000	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	>10	mg/l	Daphnia magna	OECD 211 (Daphnia magna Reproduction Test)	
12.1. Toxicity to daphnia:	EC50	24h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	>1640	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	0	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	Not biodegradable
12.3. Bioaccumulative potential:	BCF	42d	<14		Cyprinus caprio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance
Toxicity to bacteria:	EC50	3h	>100	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Other organisms:	NOEC/NOEL	14d	>1000	mg/kg	Eisenia foetida	OECD 207 (Earthworm, Acute Toxicity Tests)	

Other information:	BOD	28d	<10	%		OECD 302 C (Inherent Biodegradability - Modified MITI Test (II))	
Other information:							Does not contain any organically bound halogens which can contribute to the AOX value in waste water.

Tris(2-chlorisopropyl)phosphate							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.1. Toxicity to fish:	LC50	96h	56,2	mg/l	Brachydanio rerio		
12.1. Toxicity to fish:	LC50	96h	98	mg/l	Pimephales promelas		
12.1. Toxicity to daphnia:	LC50	48h	65-335	mg/l			
12.1. Toxicity to algae:	NOEC/NOEL	96h	6	mg/l	Selenastrum capricornutum		
12.2. Persistence and degradability:							Not readily biodegradable
12.3. Bioaccumulative potential:	BCF		0,8-4,6		Cyprinus caprio		
12.3. Bioaccumulative potential:	Log Pow		2,59				

Dimethyl ether							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.1. Toxicity to fish:	LC0	96h	2695	mg/l	Pimephales promelas		
12.1. Toxicity to fish:	LC50	96h	3082	mg/l	Salmo gairdneri		
12.1. Toxicity to fish:	LC50	96h	>4000	mg/l	Poecilia reticulata		
12.1. Toxicity to daphnia:	EC50	48h	>4000	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC0	96h	154,9	mg/l	Chlorella vulgaris	QSAR	

12.2. Persistence and degradability:		28d	5	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Not readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		-0,07				Bioaccumulation is unlikely (LogPow < 1).25°C (pH 7)
12.4. Mobility in soil:	H (Henry)		518,6	Pa*m3/mol			No adsorption in soil.
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC10		>1600	mg/l	Pseudomonas putida		
Other information:							Does not contain any organically bound halogens which can contribute to the AOX value in waste water.DIN EN 1485
Water solubility:			45,60	mg/l			25°C

Reaction mass of tris(2-chloropropyl) phosphate and tris(2-chloro-1-methylethyl) phosphate and Phosphoric acid, bis(2-chloro-1-methylethyl) 2-chloropropyl ester and Phosphoric acid, 2-chloro-1-methylethyl bis(2-chloropropyl) ester

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	56,2	mg/l			
12.1. Toxicity to fish:	LC50	96h	51	mg/l	Pimephales promelas		
12.1. Toxicity to fish:	LC50	96h	54,2	mg/l	Brachydanio rerio		
12.1. Toxicity to fish:	LC50	96h	56,2	mg/l			
12.1. Toxicity to daphnia:	EC50	48h	131	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL		32	mg/l	Daphnia magna		

12.1. Toxicity to daphnia:	NOEC/NOEL	21d	32	mg/l	Daphnia magna		
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	32	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:		72h	82	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	EC50	72h	82	mg/l	Pseudokirchneriella subcapitata	OECD 221 (Lemna sp. Growth Inhibition Test)	freshwater
12.2. Persistence and degradability:		28d	13	%	activated sludge	Regulation (EC) 440/2008 C.6 (DEGRADATION - CHEMICAL OXYGEN DEMAND)	Not readily biodegradable
12.2. Persistence and degradability:							Not readily biodegradable
12.2. Persistence and degradability:		28d	14	%			Not readily biodegradable
12.3. Bioaccumulative potential:	BCF	42d	0,8-2,8		Cyprinus caprio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	
12.3. Bioaccumulative potential:	BCF		0,8-<14				
12.3. Bioaccumulative potential:	Log Pow		-2,68				
12.3. Bioaccumulative potential:	BCF	42d	0,8-4,6		Cyprinus caprio		A notable biological accumulation potential is not to be expected (LogPow 1-3).

12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Toxicity to bacteria:	EC50	3h	784	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	

Propane							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.3. Bioaccumulative potential:	Log Pow		2,28				A notable biological accumulation potential is not to be expected (LogPow 1-3).
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

SECTION 13: Disposal considerations

13.1 Waste treatment methods
For the substance / mixture / residual amounts
EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
08 04 09 waste adhesives and sealants containing organic solvents or other hazardous substances
08 05 01 waste isocyanates
16 05 04 gases in pressure containers (including halons) containing hazardous substances
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
Take full aerosol cans to problem waste collection.
Take emptied aerosol cans to valuable material collection.
For contaminated packing material
Pay attention to local and national official regulations.
Do not perforate, cut up or weld uncleaned container.
Residues may present a risk of explosion.
15 01 10 packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

General statements

14.1. UN number: 1950

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:
UN 1950 AEROSOLS

14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Classification code: 5F
LQ: 1 L
14.5. Environmental hazards: Not applicable
Tunnel restriction code: D

Transport by sea (IMDG-code)

14.2. UN proper shipping name:
AEROSOLS

14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
EmS: F-D, S-U
Marine Pollutant: n.a
14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:
Aerosols, flammable

14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.
All persons involved in transporting must observe safety regulations.
Precautions must be taken to prevent damage.

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

Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account.
Danger code and packing code on request.
Comply with special provisions.

SECTION 15: Regulatory information

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

Observe restrictions:
Comply with national regulations/laws governing maternity protection (national implementation of the Directive 92/85/EEC)!
Regulation (EC) No 1907/2006, Annex XVII
Diphenylmethanediisocyanate, isomeres and homologues
Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

Hazard categories	Notes to Annex I	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements
P3a	11.1	150 (netto)	500 (netto)

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 2 - This product contains the substances listed below:

Entry Nr	Dangerous substances	Notes to Annex I	Qualifying quantity (tonnes) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) for the application of - Upper-tier requirements
18	Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas	19	50	200

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2010/75/EU (VOC): 22 %

REGULATION (EC) No 648/2004

n.a.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 3, 4, 11, 12, 15

Employee training in handling dangerous goods is required.
These details refer to the product as it is delivered.
Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Acute Tox. 4, H332	Classification according to calculation procedure.
Eye Irrit. 2, H319	Classification according to calculation procedure.
STOT SE 3, H335	Classification according to calculation procedure.

Skin Irrit. 2, H315	Classification according to calculation procedure.
Resp. Sens. 1, H334	Classification according to calculation procedure.
Skin Sens. 1, H317	Classification according to calculation procedure.
STOT RE 2, H373	Classification according to calculation procedure.
Carc. 2, H351	Classification according to calculation procedure.
Aerosol 1, H222	Classification according to calculation procedure.
Aerosol 1, H229	Classification based on the form or physical state.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).
H302 Harmful if swallowed.
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.
H220 Extremely flammable gas.

Acute Tox. — Acute toxicity - inhalation
Eye Irrit. — Eye irritation
STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
Skin Irrit. — Skin irritation
Resp. Sens. — Respiratory sensitization
Skin Sens. — Skin sensitization
STOT RE — Specific target organ toxicity - repeated exposure
Carc. — Carcinogenicity
Aerosol — Aerosols
Acute Tox. — Acute toxicity - oral
Flam. Gas — Flammable gases (including chemically unstable gases)

Any abbreviations and acronyms used in this document:

AC Article Categories
acc., acc. to according, according to
ACGIH American Conference of Governmental Industrial Hygienists
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOEL Acceptable Operator Exposure Level
AOX Adsorbable organic halogen compounds
approx. approximately
Art., Art. no. Article number
ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)
BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor
BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)
BHT Butylhydroxytoluol (= 2,6-Di-t-butyl-4-methyl-phenol)
BMGV Biological monitoring guidance value (EH40, UK)
BOD Biochemical oxygen demand
BSEF Bromine Science and Environmental Forum
bw body weight
CAS Chemical Abstracts Service
CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids
CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques
CIPAC Collaborative International Pesticides Analytical Council
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
COD Chemical oxygen demand
CTFA Cosmetic, Toiletry, and Fragrance Association
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
DOC Dissolved organic carbon
DT50 Dwell Time - 50% reduction of start concentration
DVS Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)
dw dry weight
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EC European Community
ECHA European Chemicals Agency
EEA European Economic Area
EEC European Economic Community
EINECS European Inventory of Existing Commercial Chemical Substances
ELINCS European List of Notified Chemical Substances
EN European Norms
EPA United States Environmental Protection Agency (United States of America)
ERC Environmental Release Categories
ES Exposure scenario
etc. et cetera
EU European Union
EWC European Waste Catalogue
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
HET-CAM Hen's Egg Test - Chorionallantoic Membrane
HGWP Halocarbon Global Warming Potential
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC Intermediate Bulk Container
IBC (Code) International Bulk Chemical (Code)
IC Inhibitory concentration
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive

IUCLID International Uniform ChemicaL Information Database
LC lethal concentration
LC50 lethal concentration 50 percent kill
LCLo lowest published lethal concentration
LD Lethal Dose of a chemical
LD50 Lethal Dose, 50% kill
LDLo Lethal Dose Low
LOAEL Lowest Observed Adverse Effect Level
LOEC Lowest Observed Effect Concentration
LOEL Lowest Observed Effect Level
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute of Occupational Safety and Health (United States of America)
NOAEC No Observed Adverse Effective Concentration
NOAEL No Observed Adverse Effect Level
NOEC No Observed Effect Concentration
NOEL No Observed Effect Level
ODP Ozone Depletion Potential
OECD Organisation for Economic Co-operation and Development
org. organic
PAH polycyclic aromatic hydrocarbon
PBT persistent, bioaccumulative and toxic
PC Chemical product category
PE Polyethylene
PNEC Predicted No Effect Concentration
POCP Photochemical ozone creation potential
ppm parts per million
PROC Process category
PTFE Polytetrafluorethylene
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SADT Self-Accelerating Decomposition Temperature
SAR Structure Activity Relationship
SU Sector of use
SVHC Substances of Very High Concern
Tel. Telephone
ThOD Theoretical oxygen demand
TOC Total organic carbon
TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))
VOC Volatile organic compounds

vPvB very persistent and very bioaccumulative
WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).
WHO World Health Organization
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.