Wisapur®-MS Kombischaum W

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

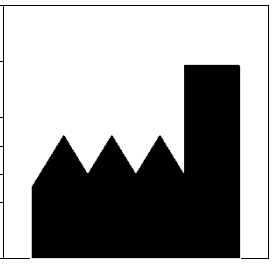
Trade Name	**Wisapur-MS Kombischaum W**
Item number	MS 906.750.12
BAG-Register number (CH)	CPID: 601933-51 UFI: MX80-T0K2-N00R-MXNC

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

Relevant identified uses	Assembly foam
Uses advised against	All applications that are not explained in this technical data sheet.
Field for application [SU]	SU22 – Commercial use: Public domain (administration, education, entertainment, services, trade)

1.3 Details of the supplier of the safety data sheet

Supplier	**Wisabax AG** Kleb- und Dichtstoffe
Address	Grossmatte 21 / Postfach CH-6014 Luzern-Littau
Phone	+41 (0)41 250 18 18
Email	info@wisabax.ch
URL	www.wisabax.ch
Information contact	Technical Dept. - Mr B. Wicki Environment Dept. - Mrs E. Svets



1.4 Emergency telephone number

24h emergency number (just possible in switzerland)	**Tel. 145**
Tox Info Suisse (ancient swiss toxicological infomations centre) **For emergencies from all the countries** 24h accessible in german, french, italian oder english. For not urgent cases see www.toxinfo.ch.	**Tel. +41 (0)44 251 51 51**

2. Hazards identification

2.1 Classification of the substance or mixture according to (EC) Nr. 1272/2008 (CLP).

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

2.2 Labelling according to Regulation (EC) Nr. 1272/2008 (CLP)

Pictograms(e)	
Signal word(s)	**Danger**
Hazard warning(s) [H-statements]	H222 Extremely flammable aerosol. H229 Pressurized container: may burst if heated. 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 May probably cause cancer. H373 May cause damage to organs through prolonged or repeated exposure.
Safety instruction(s) [P-statements]	P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. 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 vapour / aerosol. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves and eye / face protection. P 302 + P352 IF ON SKIN: Wash with plenty of water /… P304 + P340 IF INHALED: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER / doctor / … P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P405 Store locked up. P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C / 22 °F. P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Special marking(s) [EUH-Phrases]	Persons already sensitisied to diisocyanates may develop allergic reactions when using this product. Persons suffering from asthma, eczema or skin problems should avoid contact, inclouding contact, with this product. This product should not be used under conditions of poor ventilation unless a protective mask with an appropriate gas filter (Typ A1 nach EN 14387). In the EU applies: As from 24 August 2023 adequate training is required before industrial or professional use.
Contains	diphenylmethane diisocyanates, isomers and homologues, reaction products of phosphoryl trichloride and 2-methyloxirane

2.3 Other hazards

During transportation by car the cans have to stand upright in the boot or cargo space.
When foaming the propellants are highly flammable. Without adequate ventilation, formation of explosive mixtures may be possible. The mentioned hazards are valid for the non-reacted content of the can or of the fresh foam.

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.
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.

3. Composition/information on ingredients

3.1 Substances
This product is a mixture, for more see section 3.2.

3.2 Description of the mixture
Mixture of the following dangerous substances in quantities to be declared/relevant.

Content: 40 % - < 80 %

CAS No.: 9016-87-9 EG No.: 618-498-9 Index No.: - Reg. No. (REACH): 01-2119457024-46-XXXX	**diphenylmethane diisocyanates, isomers and homologues** Further name(s): diphenylmethane diisocyanates, (polymer) SCL Skin Irrit. 2, H315: C>=5% SCL Eye Irrit. 2, H319: C>=5% SCL Resp. Sens. 1, H334: C>=0.1% SCL STOT SE 3, H335: C>=5%	Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335

Content: 10 % - < 20 %

CAS No.: 1244733-77-4 EG No.: 807-935-0 Index No.: - Reg. No. (REACH): 01-2119486772-26-XXXX	**reaction products of phosphoryl trichloride and 2-methyloxirane**	Acute Tox. 4, H302; Aquatic Chronic 3, H412

Content: 5 % - < 10 %

CAS No.: 115-10-6 EG No.: 204-065-8 Index No.: 603-019-00-8 Reg. No. (REACH): 01-2119472128-37-XXXX	**dimethyl ether**	Flam. Gas 1, H220; Press. Gas, H280

Content: 5 % - < 10 %

CAS No.: 75-28-5 EG No.: 200-857-2 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119485395-27-XXXX	**isobutane**	Flam. Gas 1, H220; Press. Gas H280

Content: 0.1 % - < 0.3 %

CAS No.: 106-97-8 EG No.: 203-448-7 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119474691-32-XXXX	**n-butane**	Flam. Gas 1, H220; Press. Gas, H280

Note: H-phrases and abbreviations are detailed in section 16.

4. First aid measures

4.1 Description of first aid measures

General information	Observe the general rules of first aid measures. Refresh occasionally your knowledge. If medical advice is required, have this safety data sheet, the packaging or the label ready.
Following inhalation	Remove affected person from the danger area. Supply fresh air. Loosen restrictive clothing. Place in a resting position. Consult a doctor depending on the symptoms. If not breathing provide immediately artificial respiration and obtain medical treatment. In case of unconsciousness bring person in recovery position and take medical advice.
Following skin contact	Remove contaminated clothing immediately. Wash skin with much water and soap. Consult a doctor depending ond the symptoms, if possible, show this container or label.
Following eye contact	Remove contact lenses, if possible. Rinse open eyes for several minutes under running water. Depending on the symptoms (e.g. redness), consult an ophthalmologist.
Following ingestion	Rinse mouth thoroughly with water. Keep airways free. Telephone the emergency number or consult a doctor. If it is possible, present this safety data sheet or product label. Do not induce vomiting! Drink plenty of water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
It may, in particular trough prolonged or repeated exposure the following symptoms may occur.
Headaches, dizziness, nausea, vomiting, cough, shortness of breath, redness, sensitization or allergic reaction.
In certain cases, symptoms of intoxication may only appear after a longer period of time/after several hours.

4.3 Indication of any immediate medical attention and special treatment needed
Symptomatic treatment (Decontamination, vital bodily function)

5. Firefighting measures

5.1 Extinguishing media
Always adapt firefighting measures to the surroundings and the size of the fire.

Suitable extinguishing media: Water spray jet, Dry powder fire extinguishers, Alcohol-resistant foam, Carbon dioxide
Unsuitable extinguishing media: Full water jet

5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire:
Carbon oxide (Carbon monoxide, ..), Nitrogen oxide (NOx), Hydrogen chloride, Hydrocyanic acid (Hydrogen cyanide).
Risk of bursting when heated.

5.3 Advice for fire-fighters
Do not inhale combustion gases.
Wear breathing apparatus with own air supply. Wear full protection depending on fire class.
Use water spray to cool endangered containers.
Dispose contaminated fire extinguishing water according to official directives.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Arrange for sufficient air supply. Keep away from sources of ignition. No smoking. Avoid eye and skin contact as well as inhalation. Keep away unnecessary people from the scene of an accident; ideally contrary to the wind direction. Wear protective clothing (see Section 8).

6.2 Environmental precautions
Avoid further leakage or release, if it's possible without risk. Do not empty into drains. Prevent surface and ground-water infiltration, as well as ground penetration.

6.3 Methods and material for containment and cleaning up
Absorb bigger quantities with fluid-binding material (e.g. universal binder, sand, diatomaceous earth, sawdust) and dispose of according to section 13.

6.4 Reference to other sections
Personal protective equipment see section 8. Waste disposal see section 13.

7. Handling and storage

7.1 Precautions for safe handling
Keep away from sources of ignition – No smoking Ensure good ventilation. Avoid inhaling the vapors. Take measures against electrostatic charge. Open and handle receptacle with care. Avoid eye and skin contact. Eating, drinking, smoking, as well as food-storage, is prohibited in workspace. Notes note on the packaging and current technical data sheet. Use working methods according to operating instructions. Avoid release into the environment. Put on appropriate protective equipment (see section 8). Wash contaminated clothing before reuse. General hygiene measures for the handling of chemicals are applicable. Wash hands before breaks and after work. Take off contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities
Protect them from direct sunlight and heat. Keep container tightly closed and in a well-ventilated place. Do not keep the container sealed. To avoid the unauthorized and children and kept in a safe place. Do not store warnings in corridors and stairwells. Store only in original container and keep locked up. Store this material from incompatible materials. Keep away from food, drink and animal feedingstuffs. Store in a dry place.

7.3 Specific end uses
See section 1.2. - See technical data sheet and the product imprint.

8. Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace:

Isocyanate limit values General limit values for diisocyanates, polymeric isocyanate and reaction masses with isocyanates	CH: MAC: 0.005 ppm (0.02 mg/m^3) (measured as total NCO) CH: STEL: 0.005 ppm (0.02 mg/m^3) (measured as total NCO) CH: 10 µg/g (5 nmol/mmol) Kreatinin (4,4'-Diaminodiphenylmethan, U, b) DE: TWA: 0.05 mg/m^3 (up to 31.12.2028) (calculated as MDI) EU: TWA: 10 µg/m^3 (up to 31.12.2028) (measured as NCO, diisocyanates) (EU) EU: TWA: 6 µg/m^3 (from the 01.01.2029) (measured as NCO, diisocyanates) (EU) Peak Limitation – Exceedance Factor: 1,=2=(I) (calculated as MDI) BLV: 10 µg/g Kreatinin (4,4'-Diaminodiphenylmethan, U, b), (4,4'-MDI) Other information: DFG, H, Y (calculated as MDI) (AGW) / (diisocyanates) (EU) AT: MAC-TWA / TRC-TWA: 0.005 ppm (0.05 mg/m^3) (4,4'-MDI) AT: MAC-TWA: 10 µg/m^3 (up to 31.12.2028) (measured as NCO, diisocyanates) (EU) AT: MAC-TWA: 6 µg/m^3 (from the 01.01.2029) (measured as NCO, diisocyanates) (EU) AT: MAC-STV / TRC-ST: 0.01 ppm (0.1 mg/m^3) [8 x 5min. (Mow)] (4,4'-MDI) The specific measurement methods must be agreed with the provider carrying out the measurements.

CAS No.: 9016-87-9 EG No.: 618-498-9 Index No.: - Reg. No. (REACH): 01-2119457024-46-XXXX	**diphenylmethane diisocyanates, isomers and homologues** CH: MAC: 0.02 mg/m^3 CH: STEL: 0.02 mg/m^3 DE: TWA: 0.05 E mg/m^3 (calculated as MDI) Mehr Informationen siehe **Isocyanat-Grenzwerte** unter Abschnitt 8.1

CAS No.: 115-10-6 EG No.: 204-065-8 Index No.: 603-019-00-8	**dimethyl ether** CH: MAC: 1000 ppm (1910 mg/m^3)

Reg. No. (REACH): 01-2119472128-37-XXXX	EU: TWA: 1920 mg/m³ [25/Q1/1]

CAS No.: 75-28-5 EG No.: 200-857-2 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119485395-27-XXXX	**isobutane** CH: MAC: 800 ppm (1900 mg/m³) DE: TWA: 1000 ppm (2400 mg/m³) [25/Q1/1]

CAS No.: 106-97-8 EG No.: 203-448-7 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119474691-32-XXXX	**n-butane** CH: MAC: 800 ppm (1900 mg/m³) DE: TWA: 1000 ppm (2400 mg/m³) [25/Q1/4]

MAK = Maximum Workplace Concentration (TLV = Threshold Limit Value)
CH It's a swiss limit, edited by SUVA. If there is no limit from SUVA it's a work place limit (AGW) from Germany or another European state.

CAS No.: 9016-87-9 EG No.: 618-498-9 Index No.: - Reg. No. (REACH): 01-2119457024-46-XXXX	**diphenylmethane diisocyanates, isomers and homologues** consumer: DNEL: 20 mg/kg [oral, short-term, local effects]; consumer: DNEL: 0.05 mg/m³ [inhalative, short-term, local effects]; consumer: DNEL: 0.05 mg/m³ [inhalative, short-term, systemic effects]; consumer: DNEL: 0.025 mg/m³ [inhalative, long-term, local effects]; consumer: DNEL: 0.025 mg/m³ [inhalative, long-term, systemic effects]; consumer: DNEL: 17.2 mg/cm² [dermal exposure route, long-term, systemic effects]; consumer: DNEL: 25 mg/kg [dermal exposure route, short-term, systemic effects]; employee: DNEL: 0.1 mg/m³ [inhalative, short-term, local effects]; employee: DNEL: 0.1 mg/m³ [inhalative, short-term, systemic effects]; employee: DNEL: 0.05 mg/m³ [inhalative, long-term, local effects]; employee: DNEL: 0.05 mg/m³ [inhalative, long-term, systemic effects]; employee: DNEL: 28.7 mg/cm² [dermal exposure route, long-term, systemic effects]; employee: DNEL: 50 mg/kg [dermal exposure route, short-term, systemic effects]; environment: PNEC: 1 mg/l [sediment, fresh water]; environment: PNEC: 0.1 mg/l [sediment, seawater]; environment: PNEC: 10 mg/l [water, sporadic release]; environment: PNEC: 1 mg/l [microorganisms in wastewater treatment plants]; environment: PNEC: 1 mg/kg [soil]

CAS No.: 1244733-77-4 EG No.: 807-935-0 Index No.: - Reg. No. (REACH): 01-2119486772-26-XXXX	**reaction products of phosphoryl trichloride and 2-methyloxirane** employee: DNEL: 8.2 mg/m³ [inhalative, long-term, systemic effects]; employee: DNEL: 22.6 mg/m³ [inhalative, short-term, systemic effects]; employee: DNEL: 2.91 mg/kg bw [dermal exposure route, long-term, systemic effects]; consumer: DNEL: 1.45 mg/m³ [inhalative, long-term, systemic effects]; consumer: DNEL: 5.6 mg/m³ [inhalative, short-term, systemic effects]; consumer: DNEL: 1.04 mg/kg bw [dermal exposure route, long-term, systemic effects]; consumer: DNEL: 0.52 mg/kg bw [oral, long-term, systemic effects]; consumer: DNEL: 2 mg/kg bw/d [oral, short-term, systemic effects]; environment: PNEC: 0.32 mg/l [fresh water]; environment: PNEC: 0.032 mg/l [sea water]; environment: PNEC: 11.5 mg/kg dw [sediment, fresh water]; environment: PNEC: 1.15 mg/kg dw [sediment, seawater]; environment: PNEC: 19.1 mg/l [microorganisms in wastewater treatment plants]; environment: PNEC: 0.34 mg/kg dw [soil]; environment: PNEC: 0.51 mg/l [freshwater (intermittent release)] [25/Q1/4]

CAS No.: 115-10-6 EG No.: 204-065-8	**dimethyl ether** employee: DNEL: 1894 mg/m³ [inhalative, long-term, systemic effects];

Index No.: 603-019-00-8 Reg. No. (REACH): 01-2119472128-37-XXXX	consumer: DNEL: 471 mg/m³ [inhalative, long-term, systemic effects]; environment: PNEC: 0.155 mg/l [fresh water]; environment: PNEC: 0.016 mg/l [sea water]; environment: PNEC: 0.681 mg/kg dw [sediment, fresh water]; environment: PNEC: 160 mg/l [microorganisms in wastewater treatment plants]; environment: PNEC: 0.45 mg/kg dw [soil] [25/Q1/1]

8.2 Exposure controls

8.2.1 Appropriate engineering controls
Ensure good ventilation, e.g. by local suction, general exhaust air.
Minimize the risk of inhalations of vapours.
If possible, work with completely self-contained equipment.
Comply with the workplace exposure limits.
If limits can't be adhered to, use appropriate respiratory protection.

8.2.2 Personal protective equipment

General data	Select personal protective equipment according to the CEN standards; discuss protective equipment with the supplier.
Eye/face protection	Safety glasses with side protection shield (EN 166).
Hand-/Body protection	Use chemical-resistant protective gloves according to EN 374.
Protective clothing	Wear suitable protective clothing, e.g long-sleeved clothes and safety shoes according to EN ISO 20345.
Respiratory protection	Normally not needed. Comply with the workplace exposure limits. Use self-contained breathing apparatus. Filter A2 P2 according to EN 14387 (Colour code brown, white). Follow the wear time limits for breathing apparatus.
Hygiene measures	General hygiene measures for the handling of chemicals are applicable. Do not eat, drink or smoke while at work. Wash hands before breaks and after work.
Thermal hazards	Not applicable.

On the basis of the contents and our experience the following non-binding recommendations for the selection of the material of the protective gloves (minimum layer thickness: 0.4 mm):

Recommended glove material:	Nitrile rubber/Nitrile latex (NBR)
Inappropriate glove material:	Textile Materials

The selection of suitable depends upon the material, and also upon the quality of the gloves. The degree of protection will vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the materials used for gloves cannot be predetermined; it is therefore necessary to check this before using the product.
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

8.2.3 Environmental exposure controls
More information that is detailed is not available yet.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid, Aerosol
Colour	greenish
Density	ca. 20-27 kg/m³
Viscosity	Not determined
Odour	Characteristic, Weak
pH-level	Not determined
Melting point/freezing point	Not determined
Initial boiling point/boiling range	Not determined

Decomposition temperature	Not determined
Rate of evaporation	Not determined
Flashpoint	Not determined
Auto-ignition temperature	Not determined
Upper explosive limits	18.6 Vol.-%
Lower explosive limits	1.7 Vol.-%
Vapour pressure	6.5 bar (23 °C)
Vapour density (Air = 1)	Not determined
Auto-ignition temperature	235 °C
Explosive properties	The product is not explosive. In use, may form flammable/explosive vapour-air mixture.
Oxidising properties	No

9.2 Other information

Solubility in / Miscibility with water.	Immiscible with water
Solubility in / Miscibility in	Not determined
Partition coefficient n-Octanol/Water	Not determined
Conductivity	Not determined
VOC-content (EU)	164.4 g/l
VOC-content (CH)	164.4 g/l

10. Stability and reactivity

10.1 Reactivity
The product is not reactive under normal conditions.

10.2 Chemical stability
The product is stable when properly stored and handled.
Not sensitive to mechanical impact.
Sensitive to static discharge.

10.3 Possibility of hazardous reactions
Heating leads to pressure increase and risk of bursting.

10.4 Conditions to avoid
Product hardens with moisture. Protect from moisture. Prolonged contact with air or moisture. Do not freeze. Keep away from naked flames, hot surfaces and sources of ignition.
All heat sources, including direct sunlight.

10.5 Incompatible materials
Acids, Alkalis, Bases, Oxidizer, Water, Alcohols, Amines.

10.6 Hazardous decomposition products
No decomposition if used according to specifications.
In case of fire or very high heat can i.a. the following hazardous decomposition products are formed:
Carbon oxide (Carbon monoxide, ..), Hydrogen chloride, Hydrocyanic acid (Hydrogen cyanide).

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral)	4’400 mg/kg
Acute toxicity (dermal)	> 5’000 mg/kg
Acute toxicity (inhalativ), gas	> 20’000 ppm
Acute toxicity (inhalativ), dust/fog	> 3.4 mg/l
Acute toxicity (inhalativ), vapours	> 20 mg/l

11.2. Toxicological information of hazardous ingredients

CAS No.: 9016-87-9 EG No.: 618-498-9 Index No.: -	**diphenylmethane diisocyanates, isomers and homologues** acute toxicity: LD50: >5000 mg/kg [oral, rat, OECD 401]; acute toxicity: LD50: >5000 mg/kg [dermal exposure route, rabbit, OECD 402];

Reg. No. (REACH): 01-2119457024-46-XXXX	acute toxicity: LD50: 0.31-0.49 mg/l/4h [inhalative, rat, OECD 403, aerosol, the EU classification may vary depending on the source or the variant of the substance]; acute toxicity: ATE: 11 mg/l/4h [inhalative, vapours]; acute toxicity: ATE: 1.5 mg/l/4h [inhalative, dust/fog]; corrosive/irritant effect on the skin: slightly irritant [rabbit, OECD 404, Skin Irrit. 2]; serious eye damage/irritation: Ja [rabbit, OECD 405, Eye Irrit. 2]; respiratory/skin sensitization: Ja (skin contact) [mouse, OECD 429, analogy reasoning]; respiratory/skin sensitization: slightly irritant (skin contact) [Guinea pig, OECD 406]; respiratory/skin sensitization: Ja (inhalation) [rat, OECD 406]; germ cell mutagenicity: negative [rat, OECD 474 (Mammalian Erythrocyte Micronucleus Test, analogy reasoning]; germ cell mutagenicity: negative [Salmonella typhimurium, OECD 471]; reproductive toxicity: NOAEL: 4 mg/m^3, negative [rat, OECD 414, aerosol]; carcinogenicity: suspected carcinogenic effect [rat, OECD 453, aerosol]; specific target organ toxicity - single exposure (STOT SE): [inhalative, target organ(s): respiratory system, may irritate the respiratory tract]; specific target organ toxicity - repeated exposure (STOT RE): [inhalative, target organ(s): respiratory system]; specific target organ toxicity - repeated exposure (STOT RE): LOAEL: 1 mg/m^3 [inhalative, rat, OECD 453, aerosol, analogy reasoning]; specific target organ toxicity - repeated exposure (STOT RE): NOAEL: 0.2 mg/m^3 [inhalative, rat, OECD 453, aerosol, analogy reasoning]; symptoms: breathing difficulties [25/Q2/4]

CAS No.: 1244733-77-4 EG No.: 807-935-0 Index No.: - Reg. No. (REACH): 01-2119486772-26-XXXX	**reaction products of phosphoryl trichloride and 2-methyloxirane** acute toxicity: LD50: >500-1000 mg/kg [oral, rat, males]; acute toxicity: LD50: 632 mg/kg [oral, rat, female]; acute toxicity: LD50: >2000 mg/kg [dermal exposure route, rat, OECD 402]; acute toxicity: LD50: >7 mg/L/4h [inhalative, rat, OECD 403]; corrosive/irritant effect on the skin: non-irritant [dermal exposure route, rabbit, OECD 404]; serious eye damage/irritation: non-irritant [rabbit, OECD 405] [25/Q1/4]

CAS No.: 115-10-6 EG No.: 204-065-8 Index No.: 603-019-00-8 Reg. No. (REACH): 01-2119472128-37-XXXX	**dimethyl ether** acute toxicity: LC50: 164’000 ppm/4h [inhalative, rat] [25/Q1/1]

CAS No.: 75-28-5 EG No.: 200-857-2 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119485395-27-XXXX	**isobutane** acute toxicity: LC50: 658 mg/l/4h [inhalative, rat]; symptoms: uneven heart activity, depression of the central nervous system [25/Q1/4]

CAS No.: 106-97-8 EG No.: 203-448-7 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119474691-32-XXXX	**n-butane** acute toxicity: LC50: 658 g/m^3/4h [inhalative, rat] [25/Q1/4]

12. Ecological information

12.1 Toxicity

Aquatic toxicity Germany (Self-classification)	WGK 2 Clearly hazardous to water
The product is not classified as dangerous for the environment.	

12.2 Persistence and degradability
The product is not biodegradable.

12.3 Bioaccumulative potential
No information is available.

12.4 Mobility in soil
No information is available.

12.5 Results of PBT and vPvB assessment
See section 2.3.

12.6 Other adverse effects
Do not allow product to reach ground water, water course or sewag system.

12.7 Additional ecotoxicological information

CAS No.: 9016-87-9 EG No.: 618-498-9 Index No.: - Reg. No. (REACH): 01-2119457024-46-XXXX	**diphenylmethane diisocyanates, isomers and homologues** acute toxicity, fish: LC50: >1000 mg/l/96h [Brachydanio rerio, OECD203]; acute toxicity, daphnia: NOEC/NOEL: >10 mg/l/21d [OECD 202, Daphnia magna]; acute toxicity, crustaceans: EC50: >1000 mg/l/24h [OECD 202, Daphnia magna]; acute toxicity, algae: ErC50: >1640 mg/l/72h [Scenedesmus subspicatus, OECD 201]; persistence and degradability: 0%/28 d [OECD 302 C (Inherent Biodegradability – Modified MITI Test (II)), non-biodegradable]; bioaccumulative potential: BCF: <14/42d, is not to be expected [Cyprinus carpio, OECD 305 (Bioconcentration - Flow-Through Fish Test)]; water solubility: insoluble 15 °C; results of PBT and vPvB assessment: no PBT substance, no vPvB substance; acute bacteriotoxicity: EC50: >100 mg/l/3h [activated sludge, OECD 209]; other organisms: NOECL/NOEL: >1000 mg/kg/14d [Lactuca sativa, OECD 208] ; annelid worm toxicity: NOECL/NOEL: >1000 mg/kg [Lumbricus terrestris, OECD 207] [25/Q2,1/1]

CAS No.: 1244733-77-4 EG No.: 807-935-0 Index No.: - Reg. No. (REACH): 01-2119486772-26-XXXX	**reaction products of phosphoryl trichloride and 2-methyloxirane** acute toxicity, algae: EC50: 82 mg/l/72h [Pseudokirchneriella subcapitata, OECD 201]; acute toxicity, fish: LC50: 51 mg/l/72h [(Pimephales promelas) Static]; acute toxicity, crustaceans: LC50: 131 mg/l/72h [Daphnia magna]; bioaccumulative potential: partition coefficient: 2.68 [25/Q1/4]

CAS No.: 115-10-6 EG No.: 204-065-8 Index No.: 603-019-00-8 Reg. No. (REACH): 01-2119472128-37-XXXX	**dimethyl ether** acute toxicity, fish: LC50: >4.1 g/l/96h [Poecilia reticulata]; acute toxicity, crustaceans: LC50: >4400 mg/l/96h [Daphnia magna, NEN 6501]]; bioaccumulative potential: partition coefficient: -0.18 [25/Q1/1]

CAS No.: 75-28-5 EG No.: 200-857-2 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119485395-27-XXXX	**isobutane** acute toxicity, fish: LC50: 27.98 mg/l/96h; acute toxicity, daphnia: LC50: 16.33 mg/l/48h [Daphnia magna]; acute toxicity, algae: EC50: 8.57 mg/l/96h; persistence and degradability: half-life, 6.9d (indirect photolysis); bioaccumulative potential: partition coefficient: 2.8 [25/Q1/4]

CAS No.: 106-97-8 EG No.: 203-448-7 Index No.: 601-004-00-0 Reg. No. (REACH): 01-2119474691-32-XXXX	**n-butane** bioaccumulative potential: partition coefficient: 2.31 [25/Q1/4]

13. Disposal considerations

13.1 Waste treatment methods

Waste disposal according to official state regulations.

Waste treatment options: 08 05 01 – waste isocyanates 16 05 04 – gases in pressure containers (including halons) containing dangerous substances
Contaminated packages: Disposal must be made according to official regulations. If possible empty packaging completely. CH: After complete hardening, product can be disposed of with domestic waste. Packagings that cannot be cleaned are to be disposed off in the same manner as the product. Alternatively, it can be used if necessary following waste code: 15 01 10 – Packing that contains the residues of hazardous materials or is contaminated through hazardous materials.
• The waste code numbers mentioned are recommendations based on the probable use of the product. The particular application and local disposal situation obtaining for the user may lead to other waste codes being assigned as well. • Switzerland: Following regulation in the latest valid constitution must be observed: Technical regulation on waste (TVA, SR 814.600), regulation for waste processing (VeVa, SR 814.610) and in the regulation of UVEK concerning lists for handling waste (LVA, SR 814.610.1).

14. Transport information

14.1 UN-Number:
ADR, RID, ADN, IMDG, IATA: **UN 1950**

14.2 UN proper shipping name
ADR, RID: UN 1950 PRESSURE GAS PACKS, AEROSOLS
IMDG, IATA: AEROSOLS, flammable

14.3 Transport hazard class(es):

ADR, RID: 2 (Classification code: 5F) IMDG, IATA: 2.1 Aerosols or receptacle, small, with flammable gas	

14.4 Packing group:
ADR, RID, ADN, IMDG, IATA: omitted

14.5 Enviromental hazards: Dangerous to the environment: No Marine pollutant: No	

14.6 Special precautions for user:

Kemmler number:	n.a.
Special provisions:	ADR, RID:190, 327, 344, 625 IMDG: 63, 190, 277, 327, 344, 381, 959 IATA: A145, A167, A802
EMS number:	IMDG: F-D, S-U

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable, because of general cargo and not bulk cargo.

14.8 Additional information:

ADR / RID: LQ – Limited Quantities:	ADR, RID: 1 L IMDG: see special provisions (SP) 277 IATA: 30 kg/G ERG Code:: 10 L
ADR / RID: Tunnel restriction code:	D
UN „Model Regulation“:	UN1950, DRUCKGASPACKUNGEN, 2.1

15. Regulatory information

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

Classification and labelling see section 2.
The classification is based on the calculation method, unless otherwise stated.

Further national and further regulations, limitations and legal requirements

VOC content according to swiss VOC regulation (VOCV) see section 9.2.
Water hazard class (WGK) see section 12.1.
Observe employment restrictions for young people (CH: SR 822.115).
Observe Mutterschutzgesetz (DE) bzw. Mutterschutzverordnung (CH: SR 822.111.52).
Chemicals regulation (ChemV), ordinance on chemicals risk reduction (ChemRRV), Luftreinhalte-Verordnung (LRV), Ordinance on protection against major accidents (StFV), professional association principles/industrial medicine regulations

15.2 Chemical Safety Assessment
A chemical safety assessment is not provided for mixtures.

16. Other information

Hazards used in the document (H-phrases):

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
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 May probably cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Other recommended sources for more information:
- Federal Office of Public Health (Switzerland): www.bag.admin.ch (German/French/Italian/English)

List of relevant abbreviations that may be used in the document:

Abbreviation	Full text / Meaning
ADR	Accord européen realtif au transport international des marchandises Dangereuses par Route (= European agreement concerning the international carriage of dangerouse goods by road)
AGW, Spb.-Üf.	AGW = Arbeitsplatzgrenzwert (occupational limit value), Spb.-Üf. = Spitzenbegrenzung (peak limit) – Überschreitungsfaktor (exceedance factor) (1 bis 8) and category (I, II) for short-term values (TRGS 900, germany)
AOEL	Acceptable Operator Exposure Level
Aquatic Acute	Hazardous to the aquatic environment - Acute
Aquatic Chronic	Hazardous to the aquatic environment – Chronic
Asp. Tox.	Aspiration hazard (Danger when inhaling)
ATE	Acute Toxicity Estimates
BAG	Office for health (Bundesamt für Gesundheit, Schweiz)
BAT	Biological tolerance values at the workplace (Biologische Arbeitsstofftoleranzwerte, Schweiz)
BG	Trade association (Berufsgenossenschaft)
BGR	Trade association regulations (Berufsgenossenschaftliche Regeln)
BGV	Trade association regulations (Berufsgenossenschaftliche Vorschrift)
Carz.	Carcinogenic substance
CAS-Nr.	Chemical Abstracts Service
CH	Swiss confederation (from the latin Confoederatio Helvetica)
CH: MAK:	Swiss limit of maximum allowable concentration, issued by the swiss accident insurance fund. (Schweizerischen Unfallversicherungsanstalt (SUVA)
CLP	Classification, Labelling and Packaing (REGULATION (EG) Nr. 1272/2008)
CPID	Chemical Product IDentification.
DMEL	Derived Minimum Effect Level
DNEL	Derived No Effect Level
EG-Nr.	Substances of the EC material inventory, consisting of 7 digits (Syntax: XXX-XXX-X). Comprises waste materials (EINECS), new substances (ELINCS) as well as the No-Longer-Polymers-Liste (NLP-Liste).
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
Eye Irrit.	Eye irritant, depending on the category Eye irritation possible to serious eye damage.

Flam. Gas	Flammable gas
Flam. Liq.	Flammable liquid
Flam. Sol.	Flammable solid
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
IMDG-Code	International Maritime Code for Dangerous Goods
Index-Nr.	Indexation of dangerous substances of appendix 5 in the VO(EG)1272/2008 (or annex I of directive 67/548/EWG) with the following syntax: XXX-XXX-XX-X
LC	Lethal concentration
LD	Lethal (fatal) dose
LD50	Lethal dose, 50%
Met. Corr.	On metal corrosive acting substance or mixture
Muta.	Substance with germ cell mutagenicity
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
Ozone	Hazardous for the ozone layer
PBT	Persistent, bioaccumulative, and toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Verordnung (EG) Nr. 1907/2006 zur Registrierung, Bewertung, Zulassung und Beschränkung chemischer Stoffe)
Repr.	Reproductive toxicity
Resp. Sens.	Sensitising for respiratory tract
SCL	Specific concentration limits
Skin Irrit.	Skin irritant – corrosive/irritant to skin
Skin Sens.	Sensitising for the skin
STOT RE	Specific target organ toxicity – repeated exposure
STOT SE	Specific target organ toxicity – single exposure
TRGS	Technical rules on hazardous substances
VOC	Volatile organic compounds
VOCV	VOC-regulation (Swiss)
vPvB	Very persistent and very bioaccumulative

Department issuing data specification sheet: See section 1.3.
This safety data sheet replaces all previous versions.

Disclaimer: The specifications rest on the today's stand of our knowledge. It does not constitute a legally binding assurance of specific product properties.