

Page 1 of 11 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II Revision date / version: 23.07.2019 / 0012 Replacing version dated / version: 22.02.2019 / 0011 Valid from: 23.07.2019 PDF print date: 24.07.2019 Kuehlerfrostschutz KFS 12 + 5 L Art.: 21146

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

Kuehlerfrostschutz KFS 12 + 5 L

Art.: 21146

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

Anti-freeze

STOT RE

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Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany Phone:(+49) 0731-1420-0, Fax:(+49) 0731-1420-88

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 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixtureClassification according to Regulation (EC) 1272/2008 (CLP)Hazard classHazard categoryHazard statementAcute Tox.4H302-Harmful if swalRepr.2H361d-Suspected of

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Hazard statement H302-Harmful if swallowed. H361d-Suspected of damaging the unborn child. H373-May cause damage to organs through prolonged or repeated exposure if swallowed (kidneys).

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





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H302-Harmful if swallowed. H361d-Suspected of damaging the unborn child. H373-May cause damage to organs through prolonged or repeated exposure if swallowed (kidneys).

P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children. P201-Obtain special instructions before use. P280-Wear protective gloves / protective clothing / eye protection / face protection. P308+P313-IF exposed or concerned: Get medical advice / attention. P405-Store locked up. P501-Dispose of contents / container to an approved waste disposal facility.

Sodium-2-ethylhexanoate Ethanediol

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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

3.1 Substance

n.a. 3.2 Mixture

Ethanediol	Substance for which an EU exposure limit value applies.
Registration number (REACH)	01-2119456816-28-XXXX
Index	603-027-00-1
EINECS, ELINCS, NLP	203-473-3
CAS	107-21-1
content %	80-98
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302
	STOT RE 2, H373 (kidneys) (oral)

Sodium-2-ethylhexanoate	
Registration number (REACH)	
Index	
EINECS, ELINCS, NLP	243-283-8
CAS	19766-89-3
content %	3-<5
Classification according to Regulation (EC) 1272/2008 (CLP)	Repr. 2, H361d

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.

Skin contact



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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

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Rinse the mouth thoroughly with water. Do not induce vomiting - give copious water to drink. Consult doctor immediately. In case of vomiting, keep head low so that the stomach content does not reach the lungs.

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. In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours. cramps drowsiness nausea vomiting lower abdominal pain liver and kidney damage heart/circulatory disorders Effects/damages the central nervous system Lung damage oedema of the lungs **4.3 Indication of any immediate medical attention and special treatment needed**

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water jet spray / alcohol resistant foam / CO2 / dry extinguisher.

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop: Oxides of carbon Aldehydes Ketones Explosive vapour/air or gas/air mixtures.

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

Keep unprotected persons away. Ensure sufficient supply of air. Remove possible causes of ignition - do not smoke. Avoid contact with eyes or skin. If applicable, caution - risk of slipping.

6.2 Environmental precautions

If leakage occurs, dam up. Resolve leaks if this possible without risk. Prevent from entering drainage system.



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Prevent surface and ground-water infiltration, as well as ground penetration.

If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

Flush residue using copious water. Never return product to the original container for reuse.

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.

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Avoid contact with eyes or skin.

Pregnant women should avoid contact with this product.

Do not heat to temperatures close to flash point.

Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.

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. Store product closed and only in original packing. Not to be stored in gangways or stair wells. Store in a dry place. Store cool.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Chemical Name Ethane	diol	Content %:80-98				
WEL-TWA: 10 mg/m3 (particulate), 52 mg/	n3 WEL-STEL: 104 mg/m3 (vapour) (WEL), 40 ppm					
(vapour) (WEL), 20 ppm (52 mg/m3) (EU)	(104 mg/m3) (EU)					
Monitoring procedures:	 Compur - KITA-232 SA (502 342) 					
	 Compur - KITA-232 SB (550 267) 					
	 Draeger - Ethylene Glycol 10 (5) (81 01 351) 	- Draeger - Ethylene Glycol 10 (5) (81 01 351)				
	- NIOSH 5523 (Glycols) - 1996					
	OSHA PV2024 (Ethylene glycol) - 1999 - EU project BC/CEN/ENTR/	/000/2002-16 card				
	- 11-2 (2004)					
BMGV:	Other information: Sk (particu	late, vapour)				

Ethanediol									
Area of application	Exposure route /	Effect on health	Descriptor	Value	Unit	Note			
	Environmental								
	compartment								
	Environment - freshwater		PNEC	10	mg/l				
	Environment - marine		PNEC	1	mg/l				
	Environment - sediment		PNEC	20,9	mg/kg				



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	Environment - soil		PNEC	1,53	mg/kg
	Environment - sewage treatment plant		PNEC	199,5	mg/l
	Environment - water, sporadic (intermittent) release		PNEC	10	mg/l
	Environment - sediment, freshwater		PNEC	37	mg/kg dry weight
	Environment - sediment, marine		PNEC	3,7	mg/kg dry weight
Consumer	Human - inhalation	Long term, local effects	DNEL	7	mg/m3
Consumer	Human - dermal	Long term, systemic effects	DNEL	53	mg/kg
Workers / employees	Human - inhalation	Long term, local effects	DNEL	35	mg/m3
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	106	mg/kg

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, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).

(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/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 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 Protective Viton® / fluoroelastomer gloves (EN 374) Protective Neoprene® / polychloroprene gloves (EN 374). Protective gloves in butyl rubber (EN 374). Protective gloves in butyl rubber (EN 374). Minimum layer thickness in mm: 0,38 Permeation time (penetration time) in minutes: 480 The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions. The recommended maximum wearing time is 50% of breakthrough time. Protective hand cream recommended.



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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

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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

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Physical state:	Liquid
Colour:	Red, Clear
Odour:	Slightly
Odour threshold:	Not determined
pH-value:	8,65 (20°C)
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	>=175 °C
Flash point:	~122 °C (Pensky-Martens, closed cup)
Evaporation rate:	Not determined
Flammability (solid, gas):	n.a.
Lower explosive limit:	Not determined
Upper explosive limit:	Not determined
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined
Density:	1,113 kg/l (20°C)
Bulk density:	n.a.
Solubility(ies):	Mixable
Water solubility:	Not determined
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined
Explosive properties:	Product is not explosive.
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.



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10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid Strong heat

Protect from humidity. Product is hygroscopic.

10.5 Incompatible materials

Oxidizing agents Acids Chlorates Nitrates Peroxides

10.6 Hazardous decomposition products

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).

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	1720	mg/kg			calculated value
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin						n.d.a.
sensitisation:						
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity -						n.d.a.
single exposure (STOT-SE):						
Specific target organ toxicity -						n.d.a.
repeated exposure (STOT-RE):						
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	1600	mg/kg	Human being		
Acute toxicity, by dermal route:	LD50	9530	mg/kg	Rabbit		
Acute toxicity, by dermal route:	LD50	>3500	mg/kg	Mouse		
Skin corrosion/irritation:				Rabbit		Slightly irritant
Serious eye damage/irritation:				Rabbit		Slightly irritant
Respiratory or skin				Human being	(Patch-Test)	Negative
sensitisation:				_		_
Germ cell mutagenicity:				Salmonella	OECD 471 (Bacterial	Negative
				typhimurium	Reverse Mutation Test)	_
Germ cell mutagenicity:				Rat	in vivo	Negative
Reproductive toxicity:	NOAEL	1000	mg/kg bw/d	Rat		
Symptoms:						ataxia, breathing difficulties, unconsciousness , cramps, fatigue



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Endpoint	Value	Unit	Organism	Test method	Notes
					gastrointestinal
					disturbances,
					mucous
					membrane
					irritation

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification). Kuehlerfrostschutz KFS 12 + 5 L

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							n.d.a.
degradability:							
12.3. Bioaccumulative							n.d.a.
potential:							
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT							n.d.a.
and vPvB assessment							
12.6. Other adverse							n.d.a.
effects:							

Ethanediol Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
Toxicity to bacteria:	EC20	30min	>1995	mg/l	activated sludge	OECD 209 (Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation))	
Other information:	BOD5		0,78	g/g			IUCLID
12.1. Toxicity to fish:	LC50	96h	>10000	mg/l	Pimephales promelas	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to fish:	NOEC/NOEL	7d	15380	mg/l	Pimephales promelas	U.S. EPA ECOTOX Database	
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL		8590	mg/l	Daphnia magna	U.S. EPA ECOTOX Database	
12.1. Toxicity to algae:	EC50	96h	6500- 7500	mg/l	Pseudokirchneriell a subcapitata		
12.2. Persistence and degradability:		28d	56	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	
12.2. Persistence and degradability:		10h	90-100	%		OECD 301 A (Ready Biodegradability - DOC Die-Away Test)	Readily biodegradable



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12.3. Bioaccumulative	Log Pow		-1,36				Not to be
potential:							expected
Toxicity to bacteria:	EC50	16h	>10000	mg/l	Pseudomonas	IUCLID Chem.	
				-	putida	Data Sheet (ESIS)	

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) 16 01 14 antifreeze fluids containing hazardous substances

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

E.g. dispose at suitable refuse site.

For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

Do not perforate, cut up or weld uncleaned container.

Residues may present a risk of explosion.

SECTION 14: Transport information

General statements 14.1. UN number:	n.a.
Transport by road/by rail (ADR/RID)	
14.2. UN proper shipping name: 14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.
Classification code:	n.a.
LQ:	n.a.
14.5. Environmental hazards:	Not applicable
Tunnel restriction code:	
Transport by sea (IMDG-code)	
14.2. UN proper shipping name:	
14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.
Marine Pollutant:	n.a
14.5. Environmental hazards:	Not applicable
Transport by air (IATA)	
14.2. UN proper shipping name:	
14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.
14.5. Environmental hazards:	Not applicable
14.6. Special precautions for user	
Unless specified otherwise, general measures for safe transp	ort must be followed.
14.7. Transport in bulk according to Annex	x II of MARPOL and th

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

Non-dangerous material according to Transport Regulations.

SECTION 15: Regulatory information



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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)! Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)! Comply with trade association/occupational health regulations.

Directive 2010/75/EU (VOC):

0%

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

SECTION 16: Other information

3, 4, 6, 7, 8, 9, 11, 12

Revised sections:

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, H302	Classification based on toxicological analyses.
Repr. 2, H361d	Classification according to calculation procedure.
STOT RE 2, H373	Classification according to calculation procedure.

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).

H361d Suspected of damaging the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure if swallowed. H302 Harmful if swallowed.

Acute Tox. — Acute toxicity - oral Repr. — Reproductive toxicity

STOT RE — Specific target organ toxicity - repeated exposure

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the ADR International Carriage of Dangerous Goods by Road) AOX Adsorbable organic halogen compounds approx. approximately Art., Art. no. Article number ASTM ASTM International (American Society for Testing and Materials) Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany) BAM BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany) BSEF The International Bromine Council bw body weight CAS **Chemical Abstracts Service** CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures) CMR carcinogenic, mutagenic, reproductive toxic DMEL Derived Minimum Effect Level DNEL Derived No Effect Level dw dry weight



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not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.

No responsibility. These statements were made by:

Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90

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