

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**Trade name : Instru Plus
UFI : DMF0-703V-G003-9AWT**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.2.1. Relevant identified uses**Use of the substance/mixture : disinfectants
Medical device
IIb**1.2.2. Uses advised against**

No additional information available

1.3. Details of the supplier of the safety data sheet**Supplier**Laboratorium Dr. Deppe GmbH
Hooghe Weg 35
D-47906 Kempen
T +49 21 52 55 65 0 - F +49 21 52 50 84 9
sdb@dr-deppe.de - www.dr-deppe.de**Email competent person**sdb@dr-deppe.de**1.4. Emergency telephone number**

Emergency number : Giftinformationszentrum-Nord Robert-Koch-Straße 40 37075 Göttingen +49 551 19240

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Acute toxicity (oral), Category 4	H302
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Respiratory sensitisation, Category 1	H334
Skin sensitisation, Category 1	H317
Carcinogenicity, Category 1B	H350
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause cancer. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. Harmful to aquatic life with long lasting effects. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes skin irritation. Harmful if inhaled.

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS05



GHS07



GHS08

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Signal word (CLP)	: Danger
Contains	: glutaral; (ethylenedioxy)dimethanol; Formaldehyde; Alcohols, C9-11-iso-, C10-rich, ethoxylated; (R)-p-Mentha-1,8-diene
Hazard statements (CLP)	: H302+H332 - Harmful if swallowed or if inhaled. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H318 - Causes serious eye damage. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 - May cause respiratory irritation. H350 - May cause cancer. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P201 - Obtain special instructions before use. P261 - Avoid breathing gas, mist, vapours, spray. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P302+P352 - IF ON SKIN: Wash with plenty of water. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER, a doctor.
Extra phrases	: Restricted to professional users.

2.3. Other hazards

PBT: not relevant – no registration required

vPvB: not relevant – no registration required

Component	
glutaral (111-30-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Alcohols, C9-11-iso-, C10-rich, ethoxylated (78330-20-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Formaldehyde (50-00-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
methanol (67-56-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
ethanediol (107-21-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
(R)-p-Mentha-1,8-diene (5989-27-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Component	
glutaral(111-30-8)	The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
(ethylenedioxy)dimethanol	(CAS-No.) 3586-55-8 (EC-No.) 222-720-6	≥ 10 – < 20	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Skin Irrit. 2, H315 Eye Dam. 1, H318
glutaral substance listed as REACH Candidate substance with national workplace exposure limit(s) (GB)	(CAS-No.) 111-30-8 (EC-No.) 203-856-5 (EC Index-No.) 605-022-00-X (REACH-no) 01-2119455549-26-xxxx	≥ 2.5 – < 5	Acute Tox. 3 (Oral), H301 (ATE=77 mg/kg bodyweight) Acute Tox. 2 (Inhalation:dust,mist), H330 (ATE=0.28 mg/l/4h) Skin Corr. 1B, H314 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Alcohols, C9-11-iso-, C10-rich, ethoxylated	(CAS-No.) 78330-20-8	≥ 1 – < 2.5	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Eye Dam. 1, H318
Formaldehyde substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	(CAS-No.) 50-00-0 (EC-No.) 200-001-8 (EC Index-No.) 605-001-00-5 (REACH-no) 01-2119488953-20-xxxx	≥ 0.25 – < 1	Acute Tox. 3 (Oral), H301 (ATE=100 mg/kg bodyweight) Acute Tox. 3 (Dermal), H311 (ATE=300 mg/kg bodyweight) Acute Tox. 2 (Inhalation:vapour), H330 (ATE=0.5 mg/l/4h) Skin Corr. 1B, H314 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 STOT SE 3, H335
methanol substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44-xxxx	≥ 0.1 – < 0.25	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 (ATE=100 mg/kg bodyweight) Acute Tox. 3 (Dermal), H311 (ATE=300 mg/kg bodyweight) Acute Tox. 3 (Inhalation:vapour), H331 (ATE=128.2 mg/l/4h) STOT SE 1, H370
ethanediol substance with national workplace exposure limit(s) (GB); substance with a Community workplace exposure limit	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1 (REACH-no) 01-2119456816-28-xxxx	≥ 0.1 – < 0.25	Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) STOT RE 2, H373
(R)-p-Mentha-1,8-diene	(CAS-No.) 5989-27-5 (EC-No.) 227-813-5 (EC Index-No.) 601-029-00-7 (REACH-no) 01-2119529223-47-xxxx	≥ 0.1 – < 0.25	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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Specific concentration limits:		
Name	Product identifier	Specific concentration limits
glutaral	(CAS-No.) 111-30-8 (EC-No.) 203-856-5 (EC Index-No.) 605-022-00-X (REACH-no) 01-2119455549-26-xxxx	(0.5 ≤C < 5) STOT SE 3, H335 (5 ≤C < 100) EUH071
Formaldehyde	(CAS-No.) 50-00-0 (EC-No.) 200-001-8 (EC Index-No.) 605-001-00-5 (REACH-no) 01-2119488953-20-xxxx	(0.02 ≤C < 0.2) EUH208 (0.2 ≤C < 100) Skin Sens. 1, H317 (5 ≤C < 25) Skin Irrit. 2, H315 (5 ≤C < 25) Eye Irrit. 2, H319 (5 ≤C < 100) STOT SE 3, H335 (25 ≤C < 100) Skin Corr. 1B, H314
methanol	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44-xxxx	(3 ≤C < 10) STOT SE 2, H371 (10 ≤C < 100) STOT SE 1, H370

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a physician immediately.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a physician immediately.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do not induce vomiting. Call a physician immediately.

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

Symptoms/effects after inhalation	: May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. Carbon dioxide. Carbon monoxide. Beware, risk of formation of toxic and corrosive gases.
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5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	: Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe gas, mist, vapours, spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Notify authorities if product enters sewers or public waters. Avoid sub-soil penetration. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Notify authorities if product enters sewers or public waters.

Other information : Disposal must be done according to official regulations.

6.4. Reference to other sections

Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Avoid contact with skin and eyes. Do not breathe gas, mist, vapours, spray.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.

Information about storage in one common storage facility : Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

glutaryl (111-30-8)	
United Kingdom - Occupational Exposure Limits	
Local name	Glutaraldehyde

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glutaral (111-30-8)	
WEL TWA (OEL TWA) [1]	0.2 mg/m ³
WEL TWA (OEL TWA) [2]	0.05 ppm
WEL STEL (OEL STEL)	0.2 mg/m ³
WEL STEL (OEL STEL) [ppm]	0.05 ppm
Remark (WEL)	Sen (Capable of causing occupational asthma)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

ethanediol (107-21-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Ethylene glycol
IOEL TWA	52 mg/m ³
IOEL TWA [ppm]	20 ppm
IOEL STEL	104 mg/m ³
IOEL STEL [ppm]	40 ppm
Notes	Skin
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC
United Kingdom - Occupational Exposure Limits	
Local name	Ethane-1,2-diol
WEL TWA (OEL TWA) [1]	10 mg/m ³ particulate 52 mg/m ³ vapour
WEL TWA (OEL TWA) [2]	20 ppm vapour
WEL STEL (OEL STEL)	104 mg/m ³ vapour
WEL STEL (OEL STEL) [ppm]	40 ppm vapour
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

methanol (67-56-1)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Methanol
IOEL TWA	260 mg/m ³
IOEL TWA [ppm]	200 ppm
Notes	Skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
United Kingdom - Occupational Exposure Limits	
Local name	Methanol
WEL TWA (OEL TWA) [1]	266 mg/m ³
WEL TWA (OEL TWA) [2]	200 ppm
WEL STEL (OEL STEL)	333 mg/m ³
WEL STEL (OEL STEL) [ppm]	250 ppm

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methanol (67-56-1)	
Remark (WEL)	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Formaldehyde (50-00-0)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Formaldehyde
IOEL TWA	0.62 mg/m ³ (Limit value for the health care, funeral and embalming sectors until 11 July 2024) 0.37 mg/m ³ (BOEL)
IOEL TWA [ppm]	0.3 ppm (BOEL) 0.5 ppm (Limit value for the health care, funeral and embalming sectors until 11 July 2024)
IOEL STEL	0.74 mg/m ³ (BOEL)
IOEL STEL [ppm]	0.6 ppm (BOEL)
Notes	Dermal sensitisation
Regulatory reference	DIRECTIVE (EU) 2019/983 (amending Directive 2004/37/EC)
United Kingdom - Occupational Exposure Limits	
Local name	Formaldehyde
WEL TWA (OEL TWA) [1]	2.5 mg/m ³
WEL TWA (OEL TWA) [2]	2 ppm
WEL STEL (OEL STEL)	2.5 mg/m ³
WEL STEL (OEL STEL) [ppm]	2 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

glutaral (111-30-8)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	0.42 mg/m ³
Long-term - systemic effects, dermal	6.25 mg/kg bodyweight/day
Long-term - local effects, inhalation	0.21 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	0.07 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.003 mg/l
PNEC aqua (marine water)	0.00025 mg/l
PNEC aqua (intermittent, freshwater)	0.006 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.091 mg/kg dwt
PNEC sediment (marine water)	0.009 mg/kg dwt

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PNEC (Soil)	
PNEC soil	0.21 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.8 mg/l

(ethylenedioxy)dimethanol (3586-55-8)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	0.82 mg/kg bodyweight/day
Acute - systemic effects, inhalation	1.45 mg/m ³
Acute - local effects, inhalation	0.12 mg/m ³
Long-term - systemic effects, dermal	0.82 mg/kg bodyweight/day
Long-term - local effects, dermal	0.12 mg/cm ²
Long-term - systemic effects, inhalation	1.45 mg/m ³
Long-term - local effects, inhalation	0.12 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0.82 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.82 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1.45 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.49 mg/l
PNEC aqua (marine water)	0.049 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	2.54 mg/kg dwt
PNEC sediment (marine water)	0.254 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.22 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	1.7 mg/l

ethanediol (107-21-1)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	106 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	35 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, dermal	53 mg/kg bodyweight/day
Long-term - local effects, inhalation	7 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	10 mg/l
PNEC aqua (marine water)	1 mg/l
PNEC aqua (intermittent, freshwater)	10 mg/l
PNEC aqua (intermittent, marine water)	10 mg/l

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PNEC (Sediment)	
PNEC sediment (freshwater)	37 mg/kg dwt
PNEC sediment (marine water)	3.7 mg/kg dwt
PNEC (Soil)	
PNEC soil	1.53 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	199.5 mg/l

(R)-p-Mentha-1,8-diene (5989-27-5)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	9.5 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	66.7 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	4.8 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	16.6 mg/m ³
Long-term - systemic effects, dermal	4.8 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	14 µg/L
PNEC aqua (marine water)	1.4 µg/L
PNEC (Sediment)	
PNEC sediment (freshwater)	3.85 mg/kg dwt
PNEC sediment (marine water)	0.385 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.763 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	133 mg/kg
PNEC (STP)	
PNEC sewage treatment plant	1.8 mg/l

methanol (67-56-1)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	130 mg/m ³
Acute - local effects, dermal	20 mg/m ³
Acute - local effects, inhalation	130 mg/m ³
Long-term - systemic effects, dermal	20 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	130 mg/m ³
Long-term - local effects, inhalation	130 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	4 mg/kg bodyweight
Acute - systemic effects, inhalation	26 mg/m ³
Acute - systemic effects, oral	4 mg/kg bodyweight
Acute - local effects, inhalation	26 mg/m ³

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Long-term - systemic effects, oral	4 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	26 mg/m ³
Long-term - systemic effects, dermal	4 mg/kg bodyweight/day
Long-term - local effects, inhalation	26 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	20.8 mg/l
PNEC aqua (marine water)	2.08 mg/l
PNEC aqua (intermittent, freshwater)	1540 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	77 mg/kg dwt
PNEC sediment (marine water)	7.7 mg/kg dwt
PNEC (Soil)	
PNEC soil	100 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	100 mg/l

Formaldehyde (50-00-0)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	0.75 mg/m ³
Long-term - systemic effects, dermal	240 mg/kg bodyweight/day
Long-term - local effects, dermal	0.037 mg/cm ²
Long-term - systemic effects, inhalation	9 mg/m ³
Long-term - local effects, inhalation	0.375 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	4.1 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3.2 mg/m ³
Long-term - systemic effects, dermal	102 mg/kg bodyweight/day
Long-term - local effects, dermal	0.012 mg/cm ²
Long-term - local effects, inhalation	0.1 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.44 mg/l
PNEC aqua (marine water)	0.44 mg/l
PNEC aqua (intermittent, freshwater)	4.44 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	2.3 mg/kg dwt
PNEC sediment (marine water)	2.3 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.2 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	0.19 mg/l

8.1.5. Control banding

No additional information available

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:

Wear closed safety glasses. EN 166. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing. EN 340. EN 13034

Hand protection:

Chemically resistant protective gloves. EN 374. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear. In case of repeated or prolonged contact wear gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Chemically resistant protective gloves	Nitrile rubber	6 (> 480 minutes)	> 0,4	No additional information available	EN ISO 374
Chemically resistant protective gloves	Butyl rubber	6 (> 480 minutes)	> 0,7	No additional information available	EN ISO 374

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Breathing apparatus with filter. Filter: A/P1. EN 143. . Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. Always wash hands after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Green.
Odour	: characteristic.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: ≈ 107 °C
Flammability	: Not applicable

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Explosive properties	: Product is not explosive. Explosive vapour/air mixtures may be formed.
Oxidising properties	: Non oxidizing.
Explosive limits	: Not available
Lower explosive limit (LEL)	: Not available
Upper explosive limit (UEL)	: Not available
Flash point	: > 100 °C (1013 hPa)
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: 4.8
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 23 hPa (20 °C)
Vapour pressure at 50 °C	: Not available
Density	: Not available
Relative density	: 1.0441
Relative vapour density at 20 °C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Oxidizing agent. acids and bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Harmful if swallowed.

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according to Regulation (EC) No. 1907/2006 (REACH)

Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Harmful if inhaled.

Instru Plus	
ATE CLP (oral)	934 mg/kg bodyweight
ATE CLP (dermal)	27049
ATE CLP (dust,mist)	2.8 mg/l/4h

glutaral (111-30-8)	
LD50 oral rat	77 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	0.28 mg/l/4h

(ethylenedioxy)dimethanol (3586-55-8)	
LD50 oral rat	200 – 2000 mg/kg bodyweight (OECD 423 method)
LD50 dermal rat	> 2 ml/kg (OECD 402 method)

ethanediol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight
LD50 oral	≈ 1600 mg/kg bodyweight (human (estimated value))
LD50 dermal	> 3500 mg/kg bodyweight (mouse)
LC50 Inhalation - Rat	> 2.5 mg/l (6 h)

Alcohols, C9-11-iso-, C10-rich, ethoxylated (78330-20-8)	
LD50 oral rat	300 – 2000 mg/kg bodyweight
LD50 dermal rat	> 5000 mg/kg bodyweight

methanol (67-56-1)	
LD50 oral	1187 – 2769 mg/kg bodyweight
LD50 dermal rabbit	17100 mg/kg bodyweight
LC50 Inhalation - Rat (Vapours)	128.2 mg/l/4h

Formaldehyde (50-00-0)	
LD50 oral rat	460 mg/kg bodyweight (OECD 401 method)
LC50 Inhalation - Rat [ppm]	< 463 ppm/4h (OECD 403 method)
LC50 Inhalation - Rat (Vapours)	< 463 ppm (OECD 403 method)

Skin corrosion/irritation : Causes skin irritation.
pH: 4.8
Serious eye damage/irritation : Causes serious eye damage.
pH: 4.8
Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : May cause cancer.
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure : May cause respiratory irritation.

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glutaral (111-30-8)	
STOT-single exposure	May cause respiratory irritation.

methanol (67-56-1)	
STOT-single exposure	Causes damage to organs (central nervous system, eyes).

Formaldehyde (50-00-0)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

ethanediol (107-21-1)	
STOT-repeated exposure	May cause damage to organs (kidneys) through prolonged or repeated exposure (if swallowed).

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

glutaral (111-30-8)	
LC50 - Fish [1]	13 mg/l (96 h; EPA; Lepomis macrochirus; U.S. EPA)
LC50 - Fish [2]	10 mg/l (96 h; Oncorhynchus mykiss; U.S. EPA)
EC50 - Crustacea [1]	0.35 mg/l (48 h; Daphnia magna)
EC50 72h algae	0.6 mg/l (72 h; Scenedesmus subspicatus; EU Method C.3)
NOEC (chronic)	0.021 mg/l (21 d; Daphnia magna; OECD 211)
NOEC chronic fish	0.032 mg/l (34 d; Danio rerio; OECD 210)
NOEC chronic crustacea	0.021 mg/l (21 d; Daphnia magna; OECD 211)

(R)-p-Mentha-1,8-diene (5989-27-5)	
LC50 - Fish [1]	702 µg/l (96 h; Pimephales promelas; (OECD 203 method))
EC50 - Crustacea [1]	0.307 mg/l (48 h; Daphnia magna; (OECD 202 method))
ErC50 algae	0.214 mg/l (72 h; Pseudokirchneriella subcapitata; (OECD 201 method))
LOEC (chronic)	0.188 mg/l
NOEC (chronic)	0.08 mg/l (21 d; Daphnia magna; (OECD 211 method))
NOEC chronic fish	0.059 mg/l (8 d; Pimephales promelas; (OECD 212 method))
NOEC chronic crustacea	80 µg/L (21 d; Daphnia magna; (OECD 211 method))

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according to Regulation (EC) No. 1907/2006 (REACH)

12.2. Persistence and degradability

glutaral (111-30-8)

Persistence and degradability	Readily biodegradable.
Biodegradation	> 90 % (OECD 301A method)

(ethylenedioxy)dimethanol (3586-55-8)

Persistence and degradability	Readily biodegradable.
Biodegradation	100 % (5d; (OECD 301A method))

ethanediol (107-21-1)

Persistence and degradability	Readily biodegradable.
Biodegradation	90 – 100 % (10 d; (OECD 301A method))

(R)-p-Mentha-1,8-diene (5989-27-5)

Persistence and degradability	Readily biodegradable.
Biodegradation	80 % (28 d; (OECD 301D method))

methanol (67-56-1)

Persistence and degradability	Readily biodegradable.
Biodegradation	95 % (20 d)

Formaldehyde (50-00-0)

Persistence and degradability	Readily biodegradable.
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12.3. Bioaccumulative potential

glutaral (111-30-8)

Partition coefficient n-octanol/water (Log Pow)	-0.36
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ethanediol (107-21-1)

Partition coefficient n-octanol/water (Log Pow)	-1.36 (Quantitative structure-activity relationship (QSAR))
Bioaccumulative potential	Bioaccumulation unlikely.

(R)-p-Mentha-1,8-diene (5989-27-5)

Partition coefficient n-octanol/water (Log Pow)	4.38 (37 °C; pH 7.2; (OECD 117 method))
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methanol (67-56-1)

BCF - Fish [1]	1
Partition coefficient n-octanol/water (Log Pow)	-0.77
Bioaccumulative potential	Bioaccumulation unlikely.

Formaldehyde (50-00-0)

Partition coefficient n-octanol/water (Log Pow)	0.35
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according to Regulation (EC) No. 1907/2006 (REACH)

12.4. Mobility in soil

ethanediol (107-21-1)

Partition coefficient n-octanol/water (Log Koc)	0 (Quantitative structure-activity relationship (QSAR))
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12.5. Results of PBT and vPvB assessment

Instru Plus

PBT: not relevant – no registration required

vPvB: not relevant – no registration required

Component

glutaral (111-30-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Alcohols, C9-11-iso-, C10-rich, ethoxylated (78330-20-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Formaldehyde (50-00-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
methanol (67-56-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
ethanediol (107-21-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
(R)-p-Mentha-1,8-diene (5989-27-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Disposal must be done according to official regulations. European waste catalogue. Do not discharge into drains or the environment. Do not dispose of with domestic waste.
Product/Packaging disposal recommendations	: Recycle or dispose of in compliance with current legislation.
HP Code	: HP4 - "Irritant — skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye. HP5 - "Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:" waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration. HP6 - "Acute Toxicity:" waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure. HP7 - "Carcinogenic:" waste which induces cancer or increases its incidence HP13 - "Sensitising:" waste which contains one or more substances known to cause sensitising effects to the skin or the respiratory organs. HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Reference code	Applicable on
The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:	
28.	Formaldehyde
3(a)	(R)-p-Mentha-1,8-diene ; methanol
3(b)	Instru Plus ; glutaral ; (ethylenedioxy)dimethanol ; ethanediol ; Formaldehyde ; Alcohols, C9-11-iso-, C10-rich, ethoxylated ; (R)-p-Mentha-1,8-diene ; methanol
3(c)	Instru Plus ; glutaral ; (R)-p-Mentha-1,8-diene
40.	(R)-p-Mentha-1,8-diene ; methanol
69.	methanol
72.	Formaldehyde

Contains a substance on the REACH candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: glutaral (EC 203-856-5, CAS 111-30-8)

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

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according to Regulation (EC) No. 1907/2006 (REACH)

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Other information, restriction and prohibition regulations

: Take note of Directive 94/33/EC on the protection of young people at work. Take note of Directive 92/85/EC on the safety and health of pregnant workers at work. Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC. This safety data sheet is for informational purposes only and does not comply with national legal requirements without reference to a national distributor. The national distributor is responsible for a legally compliant safety data sheet.

Directive 2012/18/EU (SEVESO III)

Seveso III Part II (Named dangerous substances)	Qualifying quantity (tonnes)	
	Lower-tier	Upper-tier
22. Methanol	500	5000

15.1.2. National regulations

United Kingdom

National regulations

: Take note of Directive 92/85/EC on the safety and health of pregnant workers at work. This safety data sheet is for informational purposes only and does not comply with national legal requirements without reference to a national distributor. The national distributor is responsible for a legally compliant safety data sheet.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:			
General revision.			
Section	Changed item	Change	Comments
15	On REACH Candidate list	Added	

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level

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according to Regulation (EC) No. 1907/2006 (REACH)

NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Data sources : Information provided by the manufacturer. MSDSs of the suppliers. ECHA (European Chemicals Agency).
Department issuing data : KFT Chemieservice GmbH
specification sheet: Im Leuschnerpark 3
D-64347 Griesheim

Phone: +49 6155-8981-400
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SDS Service: +49 6155 8981-522

Contact person : Barbara Stark

Full text of H- and EUH-statements:	
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 2 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 2
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
EUH071	
EUH208	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Muta. 2	Germ cell mutagenicity, Category 2

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Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 1	Specific target organ toxicity — single exposure, Category 1
STOT SE 2	Specific target organ toxicity — Single exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H370	Causes damage to organs.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Acute Tox. 4 (Oral)	H302	Calculation method
Acute Tox. 4 (Inhalation:dust,mist)	H332	Calculation method
Skin Irrit. 2	H315	Calculation method
Eye Dam. 1	H318	Calculation method

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Resp. Sens. 1	H334	Calculation method
Skin Sens. 1	H317	Calculation method
Carc. 1B	H350	Calculation method
STOT SE 3	H335	Calculation method
Aquatic Chronic 3	H412	Calculation method

KFT SDS EU 01

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.