

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Glutaraldehyde (para)formaldehyde fixatives

Revision date: 26.02.2020

Product code: 11401_collect

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

1.1. Product identifier

Glutaraldehyde (para)formaldehyde fixatives

Further trade names

This MSDS covers the following products in all container sizes:

- REF 11401.xxxxx – SCHAFFER-Lösung (Glutaraldehyd - Formol)
- REF 12743.xxxxx – Paraformaldehyd (PFA) 4 % Glutaraldehyd 0,5 % PBS pH 7,4
- REF 13090.xxxxx – Freiburger Lösung
- REF 14913.xxxxx – Fixierlösung für Augen nach YANOFF
- REF 14919.xxxxx – Formaldehyd-Fixierlösung für Bulbi

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

Use of the substance/mixture

Use as laboratory reagent.

The product is intended for research, analysis and scientific education.

Uses advised against

Any non-intended use.

1.3. Details of the supplier of the safety data sheet

Company name:	MORPHISTO GmbH	
Street:	Weismüllerstr. 45	
Place:	D-60314 Frankfurt am Main	
Telephone:	+49 (0) 69 / 400 3019-60	Telefax: +49 (0) 69 / 400 3019-64
e-mail:	info@morphisto.de	
Internet:	http://www.morphisto.de	

1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

- Skin corrosion/irritation: Skin Irrit. 2
- Serious eye damage/eye irritation: Eye Dam. 1
- Respiratory or skin sensitisation: Resp. Sens. 1
- Respiratory or skin sensitisation: Skin Sens. 1A
- Germ cell mutagenicity: Muta. 2
- Carcinogenicity: Carc. 1B
- Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

- Causes skin irritation.
- Causes serious eye damage.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause an allergic skin reaction.
- Suspected of causing genetic defects.
- May cause cancer.
- May cause respiratory irritation.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Paraformaldehyde DAC, pure
1,5-pentanedial, glutaral, glutaraldehyde

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Signal word: Danger

Pictograms:

Hazard statements

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.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

Precautionary statements

P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P310	Immediately call a POISON CENTER/doctor.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Special labelling of certain mixtures

Restricted to professional users.

2.3. Other hazards

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition/information on ingredients
3.2. Mixtures
Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	GHS Classification	
30525-89-4	Paraformaldehyde DAC, pure	1 - < 5 %
	608-494-5	
	Flam. Sol. 2, Carc. 1B, Muta. 2, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H228 H350 H341 H332 H302 H315 H318 H317 H335	
111-30-8	1,5-pentanedial, glutaral, glutaraldehyde	1 - < 5 %
	203-856-5	605-022-00-X
	Acute Tox. 2, Acute Tox. 3, Skin Corr. 1B, Resp. Sens. 1, Skin Sens. 1A, STOT SE 3, Aquatic Acute 1, Aquatic Chronic 2; H330 H301 H314 H334 H317 H335 H400 H411 EUH071	

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

Further Information

Product does not contain listed SVHC substances > 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

SECTION 4: First aid measures

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4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Remove contaminated, saturated clothing immediately.

First aider: Pay attention to self-protection!

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary. @1501.B015819 If breathing is irregular or stopped, administer artificial respiration. Where appropriate artificial ventilation. Call a physician immediately. As soon as possible glucocorticoid dose aerosol can breathe repeated deep inhalation.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary. Take off immediately all contaminated clothing. @0403.B004101 Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Rinse immediately carefully and thoroughly with eye-bath or water.

Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist.

After ingestion

Observe risk of aspiration if vomiting occurs. Call a physician immediately. Rinse mouth thoroughly with water. Let water be drunk in little sips (dilution effect). Do NOT induce vomiting.

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

No information available.

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

Treat symptomatically. First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings. Carbon dioxide (CO₂). Dry extinguishing powder. alcohol resistant foam. Atomized water.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Non-flammable. Vapours can form explosive mixtures with air. Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂). Formaldehyde

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. In case of fire: Wear self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and

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clothes. Use personal protection equipment. @1501.B150087 Ventilate affected area.
Avoid contact with skin, eyes and clothes. @1501.B015718
Wear personal protection equipment. (See section 8.)
Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into surface water or drains. Eliminate leaks immediately. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Treat the recovered material as prescribed in the section on waste disposal.
Clean contaminated objects and areas thoroughly observing environmental regulations.
The contaminated area should be cleaned up immediately with: a concentrated aqueous sodium bisulfite solution. Rinse with water.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13 Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Technical ventilation of workplace. Use extractor hood (laboratory).
Wear suitable protective clothing. (See section 8.)
Avoid exposure - obtain special instructions before use.
Avoid contact with skin, eyes and clothes. @1501.B015718

Advice on protection against fire and explosion

Usual measures for fire prevention.

Further information on handling

General protection and hygiene measures: See section 8.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Keep container tightly closed and in a well-ventilated place.

Keep/Store only in original container. Keep locked up.

Unsuitable materials for Container: @0102.B010400

Ensure adequate ventilation of the storage area.

Hints on joint storage

Do not store together with: Explosives. Gas.. Oxidizing liquids. Oxidizing solids. Self-reactive substances and mixtures. Organic peroxides. Ammonium nitrate. Combustible toxic substances. Non-combustible toxic substances. Radioactive substances. Infectious substances.

Further information on storage conditions

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.
Recommended storage temperature: 20°C

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Protect against: frost. UV-radiation/sunlight. heat. Humidity
 Store small packages in a suitable, robust cabinet.

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
111-30-8	Glutaraldehyde	0.05	0.2		TWA (8 h)	WEL
		0.05	0.2		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Technical ventilation of workplace. Use extractor hood (laboratory). Process within closed systems.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Remove contaminated clothing immediately and dispose off safely. Wash contaminated clothing prior to re-use. Used working clothes should not be worn outside the work area. Street clothing should be stored separately from work clothing.

Eye/face protection

Suitable eye protection: goggles. Suitable eye protection: Tightly sealed safety glasses. DIN EN 166

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Pull-over gloves of rubber. EN ISO 374

Suitable material:

(penetration time (maximum wearing period): \geq 8 Stunden):

CR (polychloroprenes, Chloroprene rubber). (0,5 mm)

NBR (Nitrile rubber). (0,35 mm)

FKM (fluororubber). (0,4 mm)

PVC (Polyvinyl chloride). (0,5 mm)

Butyl rubber. (0,5 mm)

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Before using check leak tightness / impermeability. In the case of wanting to use the gloves again, clean them before taking off and air them well.

Skin protection

Use of protective clothing. Suitable protective clothing: Protective clothing.

Minimum standard for preventive measures while handling with working materials are specified in the TRGS

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500 (D).

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Respiratory protection necessary at:

Insufficient ventilation.

insufficient absorption.

exceeding exposure limit values

Release of: product

Suitable respiratory protective equipment:

Self-contained respirator (breathing apparatus) (DIN EN 133)

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.

Environmental exposure controls

@1501.B015774

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

Physical state:	liquid	
Colour:	colourless	
Odour:	characteristic	
pH-Value (at 20 °C):		not determined

Changes in the physical state

Melting point:		not determined
Initial boiling point and boiling range:		100 °C
Sublimation point:		not determined
Softening point:		not determined
Pour point:		not determined
Flash point:		not determined
Sustaining combustion:	Not sustaining combustion	

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

The product is not: Explosive. none

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Ignition temperature:	not determined

Auto-ignition temperature

Solid:	not applicable
Gas:	not determined
Decomposition temperature:	not determined

Oxidizing properties

none

Vapour pressure:	not determined
Density:	not determined
Water solubility:	completely miscible

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Solubility in other solvents

not determined

Partition coefficient:

not determined

Viscosity / dynamic:

not determined

Viscosity / kinematic:

not determined

Flow time:

not determined

Vapour density:

not determined

Evaporation rate:

not determined

Solvent separation test:

not determined

Solvent content:

not determined

9.2. Other information

Solid content:

not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3. Possibility of hazardous reactions

No information available.

10.4. Conditions to avoid

Keep away from heat.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, strong. Strong acid. Nitrogen oxides (NO_x). Nitric acid. Hydrogenium peroxide. Aniline. Performic acid, perchloric acid

10.6. Hazardous decomposition products

Can be released in case of fire: Carbon monoxide. Carbon dioxide (CO₂). Formaldehyde

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution

No information available.

Acute toxicity

Based on available data, the classification criteria are not met.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
30525-89-4	Paraformaldehyde DAC, pure				
	oral	LD50 800 mg/kg			
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) aerosol	LC50 1,1 mg/l			
111-30-8	1,5-pentanedial, glutaral, glutaraldehyde				
	oral	LD50 200 mg/kg	Rat	ECHA Dossier	
	dermal	LD50 > 2000 mg/kg	Rabbit	ECHA Dossier	
	inhalation (4 h) vapour	LC50 1,12 mg/l	estimated		
	inhalation (4 h) aerosol	LC50 0,28 mg/l	Rat	ECHA Dossier	

Irritation and corrosivity

Causes skin irritation.

Causes serious eye damage.

Sensitising effects

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (1,5-pentanedial, glutaral, glutaraldehyde)

May cause an allergic skin reaction. (Paraformaldehyde DAC, pure; 1,5-pentanedial, glutaral, glutaraldehyde)

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

Carcinogenic/mutagenic/toxic effects for reproduction

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Suspected of causing genetic defects. (Paraformaldehyde DAC, pure)
May cause cancer. (Paraformaldehyde DAC, pure)
Reproductive toxicity: Based on available data, the classification criteria are not met.
glutaral; glutaraldehyde; 1,5-pentanedial (CAS No. 111-30-8):
In vitro mutagenicity/genotoxicity:
Method: bacterial reverse mutation assay (e.g. Ames test) (EPA OPP 84-2)
Result: positive.
Method: mammalian cell gene mutation assay (EPA OPP 84-2)
Result: positive.
Method: OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Result: positive.
Method: OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Result: positive (without metabolic activation).
In vivo mutagenicity/genotoxicity:
No experimental indications of mutagenicity in-vivo exist.
Carcinogenicity::
Method: OECD Guideline 451 (Carcinogenicity Studies)
Species: Rat
Exposure time: 2 years
Result: NOAEL = 100 ppm
Reproductive toxicity:
Method: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
Species: Rat
Exposure time: >30 weeks
Result: NOAEL = 2000 ppm
Developmental toxicity/teratogenicity
Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study)
Species: Rat
Exposure time: 21d
Result: NOAEL = 750 ppm
Literature information: ECHA Dossier

STOT-single exposure

May cause respiratory irritation. (1,5-pentanedial, glutaral, glutaraldehyde)

STOT-repeated exposure

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Based on available data, the classification criteria are not met.

glutaral; glutaraldehyde; 1,5-pentanedial (CAS No. 111-30-8):

Chronic oral toxicity

Method: OECD Guideline 452 (Chronic Toxicity Studies)

Species: Rat

Exposure time: 2 years

Result: NOAEL = 500 ppm

Chronic inhalation toxicity:

Method: other guideline: OECD 451

Species: Rat

Exposure time: 2 years

Result: NOAEC = 0,062 ppm

Subchronic dermal toxicity:

Method: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

Species: Rat

Exposure time: 90 d

Result: NOAEL = 150 mg/kg(bw)/day

Literature information: ECHA Dossier

formaldehyde ... % (CAS-No.: 50-00-0):

Chronic oral toxicity

Exposure time: 105 weeks

Species: Wistar Rat.

Method: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Result: NOAEL = 150 mg/kg bw/day

Literature information: ECHA Dossier

Aspiration hazard

Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal

No information available.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP]. Special hazards arising from the substance or mixture!

SECTION 12: Ecological information

12.1. Toxicity

The product has not been tested.

CAS No	Chemical name						
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method	
30525-89-4	Paraformaldehyde DAC, pure						
	Acute fish toxicity	LC50 46 mg/l	96 h				
111-30-8	1,5-pentanedial, glutaral, glutaraldehyde						
	Acute fish toxicity	LC50 3,5 mg/l	96 h	Oncorhynchus mykiss	MSDS external		
	Acute algae toxicity	ErC50 0,6 - 1,2 mg/l	72 h	@1201.B120239	ECHA Dossier		
	Acute crustacea toxicity	EC50 5,5 mg/l	48 h	Daphnia magna	ECHA Dossier		
	Fish toxicity	NOEC 1,6 mg/l	97 d	Oncorhynchus mykiss	ECHA Dossier		
	Crustacea toxicity	NOEC 5 mg/l	21 d	Daphnia magna	MSDS external		

12.2. Persistence and degradability

The product has not been tested.

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
111-30-8	1,5-pentanedial, glutaral, glutaraldehyde			
	OECD 301A / ISO 7827 / EEC 92/69 annex V, C.4-A	90-100 %	28	MSDS external
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
111-30-8	1,5-pentanedial, glutaral, glutaraldehyde	-0,36

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Do not allow uncontrolled discharge of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to (EWC) European Waste Catalogue, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/ waste marking according to (EWC) European Waste Catalogue:

List of Wastes Code - residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself. Handle contaminated packages in the same way as the substance itself.

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SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Inland waterways transport (ADN)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Marine transport (IMDG)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	Not restricted
14.2. UN proper shipping name:	Not restricted
14.3. Transport hazard class(es):	Not restricted
14.4. Packing group:	Not restricted

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Not restricted

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

Not restricted

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

2010/75/EU (VOC):	1,5 %
2004/42/EC (VOC):	1,5 %
Information according to 2012/18/EU (SEVESO III):	Not subject to 2012/18/EU (SEVESO III)

Additional information

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].
REACH 1907/2006 Appendix XVII, No: 3, 28/29/30

National regulatory information

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Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	2 - obviously hazardous to water
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information**Changes**

Rev. 1.0; 30.01.2017, Initial release

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route

CAS Chemical Abstracts Service

DNEL: Derived No Effect Level

IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

LOAEL: Lowest observed adverse effect level

LOAEC: Lowest observed adverse effect concentration

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

NOAEL: No observed adverse effect level

NOAEC: No observed adverse effect level

NTP: National Toxicology Program

N/A: not applicable

OSHA: Occupational Safety and Health Administration

PNEC: predicted no effect concentration

PBT: Persistent bioaccumulative toxic

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

SARA: Superfund Amendments and Reauthorization Act

SVHC: substance of very high concern

TRGS Technische Regeln fuerGefahrstoffe

TSCA: Toxic Substances Control Act

VOC: Volatile Organic Compounds

VwVwS: Verwaltungsvorschrift wassergefaehrdender Stoffe

WGK: Wassergefaehrungsklasse

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

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ATE: Acute toxicity estimate
 LL50: Lethal loading, 50%
 EL50: Effect loading, 50%
 EC50: Effective Concentration 50%
 ErC50: Effective Concentration 50%, growth rate
 NOEC: No Observed Effect Concentration
 BCF: Bio-concentration factor
 PBT: persistent, bioaccumulative, toxic
 vPvB: very persistent, very bioaccumulative
 ADR: Accord européen sur le transport des marchandises dangereuses par Route
 (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Regulations concerning the international carriage of dangerous goods by rail
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation
 intérieures)
 EmS: Emergency Schedules
 MFAG: Medical First Aid Guide
 MARPOL: International Convention for the Prevention of Marine Pollution from Ships
 IBC: Intermediate Bulk Container
 For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
Resp. Sens. 1; H334	Calculation method
Skin Sens. 1A; H317	Calculation method
Muta. 2; H341	Calculation method
Carc. 1B; H350	Calculation method
STOT SE 3; H335	Calculation method

Relevant H and EUH statements (number and full text)

H228	Flammable solid.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal 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.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. Classification according EC regulation 1272/2008 (CLP): -

Classification procedure:

Health hazards: Calculation method.

Environmental hazards: Calculation method.

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Physical hazards: On basis of test data and / or calculated and / or estimated.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)