

Safety data sheet

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

1.1. Product identifier

Code: C810048
Product name: ZETA 7 SOLUTION

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

Intended use: For professional use only. Concentrated disinfectant liquid for dental impressions.

1.3. Details of the supplier of the safety data sheet

Name: Zhermack S.p.a
Full address: Via Bovazecchino 100
District and Country: 45021 Badia Polesine (RO)
Italy
Tel. +39 0425-597611
Fax +39 0425-597689

e-mail address of the competent person responsible for the Safety Data Sheet: msds@zhermack.com

1.4. Emergency telephone number

For urgent inquiries refer to: UK Emergency number: 844 892 0111 (24 hours)

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Acute toxicity, category 4	H302	Harmful if swallowed.
Skin corrosion, category 1B	H314	Causes severe skin burns and eye damage.
Serious eye damage, category 1	H318	Causes serious eye damage.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.
Hazardous to the aquatic environment, acute toxicity, category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment, chronic toxicity, category 2	H411	Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

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ZETA 7 SOLUTION



Signal words:

Danger

Hazard statements:

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
EUH208 Contains: D-LIMONENE, CITRAL. May produce an allergic reaction.

Precautionary statements:

P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves / clothing and eye / face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER / doctor if you feel unwell.
P304+P340 IF INHALED: remove person to fresh air and keep comfortable for breathing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Contains: ETHANOLAMINE
 DIDECYLDIMETHYLAMMONIUM CHLORIDE
 BUTANE-1,4 DIOL

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients

3.1. Substances

Information not relevant

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification 1272/2008 (CLP)
BUTANE-1,4 DIOL		
CAS 110-63-4	30 ≤ x < 40	Acute Tox. 4 H302, STOT SE 3 H336
EC 203-786-5		
INDEX -		
Reg. no. 01-2119471849-20-XXXX		
2-PHENOXYETHANOL		
CAS 122-99-6	10 ≤ x < 20	Acute Tox. 4 H302, Eye Irrit. 2 H319

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EC 204-589-7

INDEX 603-098-00-9

Reg. no. 01-2119488943-21-XXXX

ACETIC ACID

CAS 64-19-7

 $10 \leq x < 15$

Flam. Liq. 3 H226, Skin Corr. 1A H314, Note B

EC 200-580-7

INDEX 607-002-00-6

Reg. no. 01-2119475328-30-XXXX

ETHANOLAMINE

CAS 141-43-5

 $5 \leq x < 9$

Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1B H314, STOT SE 3 H335

EC 205-483-3

INDEX 603-030-00-8

Reg. no. 01-2119486455-28-XXXX

DIDECYLDIMETHYLAMMONIUM CHLORIDE

CAS 7173-51-5

 $5 \leq x < 9$

Acute Tox. 3 H301, Skin Corr. 1B H314, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1

EC 230-525-2

INDEX 612-131-00-6

POLYALKYLENEOXIDE MODIFIED**HEPTAMETHYLTRISILOXANE**

CAS 27306-78-1

 $1 \leq x < 3$

Acute Tox. 4 H332, Eye Irrit. 2 H319, Aquatic Chronic 2 H411

EC

INDEX -

PROPAN-2-OL

CAS 67-63-0

 $1 \leq x < 3$

Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336

EC 200-661-7

INDEX 603-117-00-0

Reg. no. 01-2119457558-25-XXXX

D-LIMONENE

CAS 5989-27-5

 $0 \leq x < 0,2$

Flam. Liq. 3 H226, Asp. Tox. 1 H304, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 1 H410 M=1

EC 227-813-5

INDEX 601-029-00-7

DIPHENYL ETHER

CAS 101-84-8

 $0 \leq x < 0,2$

Eye Irrit. 2 H319, Aquatic Chronic 2 H411

EC 202-981-2

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The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures**4.1. Description of first aid measures**

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.

INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.

Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

See section 1.2.

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory References:

CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
DNK	Danmark	Graensevaerdier per stoffer og materialer
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FIN	Suomi	HTP-arvot 2012. Haitallisiksi tunnetut pitoisuudet - Sosiaali- ja terveystieteiden tutkimuskeskus julkaisuja 2012:5
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
GRC	Ελλάδα	ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ -ΤΕΥΧΟΣ ΠΡΩΤΟ Αρ. Φύλλου 19 - 9 Φεβρουαρίου 2012
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
NLD	Nederland	Databank of the social and Economic Concil of Netherlands (SER) Values, AF 2011:18
NOR	Norge	Veiledning om Administrative normer for forurensning i arbeidsatmosfære
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
PRT	Portugal	Ministério da Economia e do Emprego Consolida as prescrições mínimas em matéria de protecção dos trabalhadores contra os riscos para a segurança e a saúde devido à exposição a agentes químicos no trabalho - Diaro da Republica I 26; 2012-02-06
SVN	Slovenija	Uradni list Republike Slovenije 15. 6. 2007
SWE	Sverige	Occupational Exposure Limit Values, AF 2011:18
EU	OEL EU	Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2016

BUTANE-1,4 DIOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		INHAL
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	200	50	800	200	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,813	mg/l
Normal value in marine water	0,0813	mg/l
Normal value for fresh water sediment	3,61	mg/kg
Normal value for marine water sediment	0,361	mg/kg
Normal value for water, intermittent release	8,13	mg/l
Normal value of STP microorganisms	1554	mg/l
Normal value for the terrestrial compartment	0,244	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Effects on
consumersEffects on
workers

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Route of exposure

Inhalation	VND	340 mg/m3	VND	136 mg/m3
Skin	VND	8 mg/kg	VND	19 mg/kg

2-PHENOXYETHANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	110	20	220	40	SKIN
MAK	DEU	110	20	220	40	SKIN
HTP	FIN	110	20	290	50	SKIN
NDS	POL	230				

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,943	mg/l
Normal value in marine water	0,0943	mg/l
Normal value for fresh water sediment	7,2366	mg/kg
Normal value for marine water sediment	0,7237	mg/kg
Normal value for water, intermittent release	3,44	mg/l
Normal value of STP microorganisms	24,8	mg/l
Normal value for the terrestrial compartment	1,26	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Effects on workers		
Oral	VND	17,43 mg/kg	VND	17,43 mg/kg	
Inhalation	2,5 mg/m3	VND	2,5 mg/m3	VND	8,07 mg/m3 8,07 mg/m3
Skin			20,83 mg/kg	VND	VND 34,72 mg/kg

ACETIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
TLV	CZE	25		35	
AGW	DEU	25	10	50	20
MAK	DEU	25	10	50	20
TLV	DNK	25	10		
VLA	ESP	25	10	37	15
HTP	FIN	13	5	25	10
VLEP	FRA			25	10
TLV	GRC	25	10	37	15
MAC	NLD		10		
TLV	NOR	25	10		
NDS	POL	15		30	
VLE	PRT	25	10		
MV	SVN	25	10		
MAK	SWE	13	5	25	10
OEL	EU	25	10	50	20

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TLV-ACGIH 25 10 37 15

Predicted no-effect concentration - PNEC

Normal value in fresh water	3,058	mg/l
Normal value in marine water	0,3058	mg/l
Normal value for fresh water sediment	11,36	mg/kg
Normal value for marine water sediment	1,136	mg/kg
Normal value for water, intermittent release	3,058	mg/l
Normal value of STP microorganisms	85	mg/l
Normal value for the terrestrial compartment	0,478	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Effects on workers	
	Route	Value	Route	Value
Inhalation	VND	25 mg/m3	VND	25 mg/m3
			VND	25 mg/m3

ETHANOLAMINE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	2,5		7,5		SKIN
AGW	DEU	5,1	2	10,2	4	SKIN
MAK	DEU	5,1	2	10,2	4	
TLV	DNK	2,5	1			SKIN
VLA	ESP	2,5	1	7,5	3	SKIN
HTP	FIN	2,5	1	7,6	3	SKIN
VLEP	FRA	2,5	1	7,6	3	SKIN
WEL	GBR	2,5	1	7,6	3	SKIN
TLV	GRC	2,5	1	7,6	3	
VLEP	ITA	2,5	1	7,6	3	SKIN
OEL	NLD	2,5		7,6		SKIN
TLV	NOR	2,5	1			SKIN
NDS	POL	2,5		7,5		
VLE	PRT	2,5	1	7,6	3	SKIN
MV	SVN	2,5	1			SKIN
MAK	SWE	8	3	15	6	SKIN
OEL	EU	2,5	1	7,6	3	SKIN
TLV-ACGIH		7,5	3	15	6	

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,85	mg/l
Normal value in marine water	0,085	mg/l
Normal value for fresh water sediment	0,425	mg/kg
Normal value for marine water sediment	0,0425	mg/kg
Normal value for water, intermittent release	0,025	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,035	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Effects on workers	
	Route	Value	Route	Value

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Route of exposure

Oral	VND	3,75 mg/kg/d		
Inhalation	2 mg/m3	VND	3,3 mg/m3	VND
Skin	VND	0,24 mg/kg/d	VND	1 mg/kg/d

PROPAN-2-OL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV	CZE	500		1000		SKIN
AGW	DEU	500	200	1000	400	
MAK	DEU	500	200	1000	400	
TLV	DNK	490	200			
VLA	ESP	500	200	1000	400	
VLEP	FRA			980	400	
WEL	GBR	999	400	1250	500	
TLV	GRC	980	400	1225	500	
OEL	NLD	650				
TLV	NOR	245	100			
NDS	POL	900		1200		
MV	SVN	500	200			
MAK	SWE	350	150	600	250	
TLV-ACGIH		492	200	983	400	

Predicted no-effect concentration - PNEC

Normal value in fresh water	140,9	mg/l
Normal value in marine water	140,9	mg/l
Normal value for fresh water sediment	552	mg/kg
Normal value for the terrestrial compartment	28	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers		Effects on workers	
Oral	VND	26 mg/kg		
Inhalation	VND	89 mg/m3	VND	500 mg/m3
Skin	VND	319 mg/kg	VND	888 mg/kg

D-LIMONENE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	28		110		INHAL

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,0054	mg/l
Normal value in marine water	0,00054	mg/l
Normal value for fresh water sediment	1,32	mg/kg
Normal value for marine water sediment	0,13	mg/kg
Normal value of STP microorganisms	1,8	mg/l

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Normal value for the terrestrial compartment 0,262 mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers	Effects on workers
Oral	VND	4,76 mg/kg/d
Inhalation	VND	8,33 mg/m3
Skin	0,111 mg/cm2 VND	0,222 mg/cm2 VND

DIPHENYL ETHER

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	7,1	1	7,1	1	INHAL
VLA	ESP	7,1	1	14,2	2	INHAL
VLEP	FRA	7	1			INHAL
WEL	GBR	7,1	1			INHAL
NDS	POL	7		14		INHAL
OEL	EU	7	1	14	2	

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

In the presence of risks of exposure to splashes or squirts during work, adequate mouth, nose and eye protection should be used to prevent accidental absorption.

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of

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various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required. Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	yellow
Odour	characteristic
Odour threshold	Not available
pH	4,5-6
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	> 100 °C
Evaporation Rate	Not available
Flammability of solids and gases	not applicable
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not applicable
Upper explosive limit	Not applicable
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not available
Solubility	soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not explosive
Oxidising properties	Not available

9.2. Other information

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

10.2. Chemical stability

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The vapours may also form explosive mixtures with the air.

ACETIC ACID

Risk of explosion on contact with: chromium (VI) oxide, potassium permanganate, sodium peroxide, perchloric acid, phosphorus chloride, hydrogen peroxide. May react dangerously with: alcohols, bromine pentafluoride, chlorosulphuric acid, dichromate-sulphuric acid, ethane diamine, ethylene glycol, potassium hydroxide, strong bases, sodium hydroxide, strong oxidising agents, nitric acid, ammonium nitrate, potassium tert-butoxide, oleum. Forms explosive mixtures with: air.

ETHANOLAMINE

May react dangerously with: acrylonitrile, chloroepoxypropane, chlorosulphuric acid, hydrogen chloride, iron-sulphur compounds, acetic acid, acetic anhydride, mesityl oxide, nitric acid, sulphuric acid, strong acids, vinyl acetate, cellulose nitrate.

10.4. Conditions to avoid

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ACETIC ACID

Avoid exposure to: sources of heat, naked flames.

ETHANOLAMINE

Avoid exposure to: air, sources of heat.

10.5. Incompatible materials

2-PHENOXYETHANOL

Incompatible with: strong oxidants.

ACETIC ACID

Incompatible with: carbonates, hydroxides, phosphates, oxidising substances, bases.

ETHANOLAMINE

Incompatible with: iron, strong acids, strong oxidants.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

ETHANOLAMINE

May develop: nitric oxide, carbon oxides.

SECTION 11. Toxicological information

**C810048
ZETA 7 SOLUTION****11.1. Information on toxicological effects**Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

LC50 (Inhalation) of the mixture: > 20 mg/l (calculated).

LD50 (Oral) of the mixture: 1521 mg/kg (calculated).

LD50 (Dermal) of the mixture: >2000 mg/kg (calculated).

SKIN CORROSION / IRRITATION

Corrosive for the skin

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

May produce an allergic reaction. Contains:

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

May cause respiratory irritation May cause drowsiness or dizziness

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

2-PHENOXYETHANOL

LD50 (Oral).1840 mg/kg (similar to OECD 401, rat, ECHA dossier).

LD50 (Dermal).5000 mg/kg (rabbit, MSDS supplier).

Acute toxicity:

Inhalation: No data available.

Irritation/Corrosion

Skin irritation: Not irritating (OECD 404, rabbit, MSDS supplier).

Eye irritation: Irritating (OECD 405, rabbit, MSDS supplier).

Skin Sensitization: Not sensitising (OECD 406, Guinea Pig Maximation Test, MSDS supplier).

STOT – Repeated/single exposure: No data available.

Genotoxicity in vitro: Negative (MSDS supplier).

Carcinogenicity: No data available.

Toxicity to reproduction: Negative (MSDS supplier).

ETHANOLAMINE

LD50 (Oral).1515 mg/kg (rat, SDS supplier).

LD50 (Dermal).2504 mg/kg (rat, SDS supplier).

LC50 (Inhalation).1,48 mg/l/4h (rat, SDS supplier).

Irritation/Corrosion

Skin irritation: Corrosive (MSDS supplier).

Eye irritation: Corrosive (MSDS supplier).

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Respiratory or skin Sensitization: Not sensitizing (OECD 416, GLP, Guinea pig, ECHA dossier).
STOT – Repeated exposure: Not toxic (OECD 416, GLP, oral, ECHA dossier).
STOT – Single exposure: inhalation can cause irritation of respiratory tract (harmonized classification).
Genotoxicity in vitro: No data available.
Genotoxicity in vivo: Negative (OECD 474, GLP, mouse, ECHA dossier).
Carcinogenicity: No data available.
Toxicity to reproduction: Negative (OECD 416, GLP, oral, ECHA dossier).
Aspiration toxicity: No data available.

PROPAN-2-OL

LD50 (Oral).> 2000 mg/kg (rat, MSDS supplier).
LD50 (Dermal).> 2000 mg/kg (rabbit, MSDS supplier).
LC50 (Inhalation).> 20 mg/l/4h (rat, MSDS supplier).
Irritation/Corrosion
Skin irritation: Not irritating (publication, in vivo, rabbit, ECHA dossier).
Eye irritation: Irritating (comparable to OECD 405, in vivo, rabbit, ECHA dossier).
Respiratory or skin Sensitization: Not sensitising (OECD 406, GLP, Guinea pig, ECHA dossier).
STOT – Repeated exposure: Clinical signs of toxicity on the central nervous system (including ataxia, narcosis, lack of a startle reflex, and/or hypoactivity) are acute effects and not relevant for limit value determination for repeated dose systemic effects. (OECD 413, inhalation, rat-mouse, ECHA dossier).
Genotoxicity in vitro: Negative (Ames test, ECHA dossier).
Genotoxicity in vivo: Negative (OECD 474, mouse, ECHA dossier).
Carcinogenicity: Negative (OECD 451, inhalation, rat, ECHA dossier)
Toxicity to reproduction: Possible adverse effects on fetal development (OECD 421, rat, ECHA dossier).
Aspiration toxicity: No data available.

ACETIC ACID

LD50 (Oral).3310 mg/kg Rat
LD50 (Dermal).1060 mg/kg Rabbit
LC50 (Inhalation).11,4 mg/l/4h Rat
Irritation/Corrosion
Skin irritation: Corrosive (MSDS supplier).
Eye irritation: Corrosive (MSDS supplier).
Skin Sensitization: No data available.
STOT – Repeated exposure: No data available.
Genotoxicity in vitro: No data available.
Genotoxicity in vivo: No data available.
Carcinogenicity: No data available.
Toxicity to reproduction: The administration of up to 1600 mg/kg (body weight) to pregnant rats for 10 consecutive days had no clearly discernible effect on nidation or on maternal or fetal survival. (EU Method B.31, ECHA dossier).

DIDECYLDIMETHYLAMMONIUM CHLORIDE

LD50 (Oral) 238 mg/kg (OECD TG 401, rat, MSDS supplier).
LD50 (Dermal) 3342 mg/kg (rabbit, MSDS supplier).
Acute toxicity:
Inhalation: No data available.
Irritation/Corrosion
Skin irritation: Irritating (OECD 404, in vivo, rabbit, MSDS supplier).
Eye irritation: No data available.
Skin Sensitization: Not sensitising (US-EPA, Buehler Test, Guinea pig, MSDS supplier).
STOT – Repeated/single exposure: No data available.
Genotoxicity in vitro: Negative (OECD 471, Test di ames, Salmonella typhimurium, MSDS supplier).
Genotoxicity in vivo: Negative (OECD 475, rat, oral, MSDS supplier).
Carcinogenicity: No data available.
Toxicity to reproduction: No data available.

POLYALKYLENEOXIDE MODIFIED HEPTAMETHYLTRISILOXANE

LD50 (Oral).> 2000 mg/l (rat, MSDS supplier).
LD50 (Dermal).> 2000 mg/l (rat, MSDS supplier)
LC50 (Inhalation).2 mg/l (rat, 4h, MSDS supplier)
Irritation/Corrosion
Skin irritation: Not irritating (Rat, MSDS supplier).
Eye irritation: Strongly irritating (Rabbit, MSDS supplier).
Sensitization: negative (Guinea Pig, MSDS supplier).
STOT- Repeated/ Single exposure: No data available.
Genotoxicity in vitro: No data available.

Genotoxicity in vivo: No data available.
Carcinogenicity: No data available.
Toxicity to reproduction: No data available.

BUTANE-1,4 DIOL

LD50 (Oral) 1500 mg/kg (study report, rat, ECHA dossier).

LD50 (Dermal) > 2000 mg/kg (study report, rat, ECHA dossier).

Acute toxicity:

Inhalation: No data available.

Irritation/Corrosion

Skin irritation: Not irritating (publication, in vivo, rabbit, ECHA dossier).

Eye irritation: Not irritating (publication, in vivo, rabbit, ECHA dossier).

Respiratory or skin Sensitization: Not sensitising (Guinea pig maximization test, ECHA dossier).

STOT – Repeated exposure: No data available.

Genotoxicity in vitro: Negative (OECD 476, GLP, ECHA dossier).

Genotoxicity in vivo: No data available.

Carcinogenicity: No data available.

Toxicity to reproduction: No data available.

Developmental toxicity: Negative (study report, GLP, mouse, oral, ECHA dossier).

Aspiration toxicity: No data available.

D-LIMONENE

Acute toxicity:

Oral: No data available.

Dermal: No data available.

Inhalation: No data available.

Irritation/Corrosion

Skin irritation: Irritating (comparable to OECD 404, in vivo, rabbit, ECHA dossier).

Eye irritation: Not irritating (comparable to OECD 405, in vivo, rabbit, ECHA dossier).

Respiratory or skin Sensitization: Sensitising (OECD 429, in vivo, Mouse local lymphnode assay, ECHA dossier).

STOT – Repeated exposure: NOAEL = 1650 mg/kg bw/day (GLP study performed similarly to OECD Guideline 407, subacute, oral, mouse, ECHA dossier).

Genotoxicity in vitro: Negative (OECD 476, 473, 479, ECHA dossier).

Genotoxicity in vivo: Negative (publication, rat, oral, ECHA dossier).

Carcinogenicity: clear evidence of carcinogenic activity of d-limonene for male rats, no evidence of carcinogenic activity of d-limonene for female rats.

This mechanism of nephrocarcinogenicity has been proven as being male-rat specific and not relevant for humans (GLP study performed similarly to OECD Guideline 451, rat, ECHA dossier).

Toxicity to reproduction: Insufficient data.

Aspiration toxicity: No data available.

DIPHENYL ETHER

LD50 (Oral) > 2000 mg/kg (rat, ECHA dossier).

Acute toxicity:

Inhalation: No data available.

Irritation/Corrosion

Skin irritation: Not irritating (FIFRA-TSCA, GLP, in vivo, rabbit, ECHA dossier).

Eye irritation: Irritating (study report, in vivo, rabbit, ECHA dossier).

Respiratory or skin Sensitization: Not sensitising (epicutaneous test, ECHA dossier).

STOT – Repeated exposure: Negative (dermal exposure, rat, ECHA dossier).

Genotoxicity in vitro: Negative (mammalian cell gene mutation assay, GLP, ECHA dossier).

Genotoxicity in vivo: No data available.

Carcinogenicity: No data available.

Toxicity to reproduction: No data available.

Aspiration toxicity: No data available.

SECTION 12. Ecological information

This product is dangerous for the environment and highly toxic for aquatic organisms.

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it has negative effects on the aquatic environment.

12.1. Toxicity

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2-PHENOXYETHANOL

LC50 - for Fish	344 mg/l/96h (Pimephales promelas, MSDS supplier).
EC50 - for Algae / Aquatic Plants	> 500 mg/l/72h (Scenedesmus subspicatus, DIN 38412 parte 9, MSDS supplier).
EC10 for Crustacea	> 500 mg/l/48h (MSDS supplier).

ETHANOLAMINE

LC50 - for Fish	349 mg/l/96h (MSDS supplier).
EC50 - for Crustacea	65 mg/l/48h (Daphnia magna, MSDS supplier).
EC50 - for Algae / Aquatic Plants	2,5 mg/l/72h (MSDS supplier).

PROPAN-2-OL

LC50 - for Fish	9640 mg/l/96h (similar to OECD 203, Pimephales promelas, freshwater, ECHA dossier).
EC50 - for Crustacea	> 10000 mg/l/48h (similar to OECD 202, Daphnia magna, 24h, ECHA dossier).

ACETIC ACID

LC50 - for Fish	> 300,82 mg/l/96h (similar to OECD Guideline 203, Oncorhynchus mykiss, freshwater, ECHA dossier).
EC50 - for Crustacea	> 300,82 mg/l/48h (OECD Guideline 202, Daphnia magna, freshwater, ECHA dossier).

D-LIMONENE

LC50 - for Fish	< 1 mg/l/96h (similar or equivalent to OECD 203, Pimephales promelas, freshwater, ECHA dossier).
EC50 - for Crustacea	< 1 mg/l/48h (OECD 202, Daphnia magna, static, freshwater, ECHA dossier).

DIDECYLDIMETHYLAMMONIUM CHLORIDE

LC50 - for Fish	0,19 mg/l/96h (us-epa, Pimephales promelas, MSDS supplier).
Chronic NOEC for Fish	0,032 mg/l (OECD 210, Danio rerio, 34 d, MSDS supplier).
Chronic NOEC for Crustacea	0,01 mg/l (OECD 211, 21 d, Daphnia magna, MSDS supplier).

POLYALKYLENEOXIDE MODIFIED HEPTAMETHYLTRISILOXANE

LC50 - for Fish	6,8 mg/l/96h (Zebrafish, MSDS supplier)
EC50 - for Algae / Aquatic Plants	32 mg/l/72h (Pseudokirchneriella subcapitata, 96 h, MSDS supplier)

BUTANE-1,4 DIOL

LC50 - for Fish	> 30000 mg/l/96h (study report, Pimephales promelas, freshwater, ECHA dossier).
EC50 - for Crustacea	> 1000 mg/l/48h (OECD 202, GLP, Daphnia magna, freshwater, ECHA dossier).

DIPHENYL ETHER

EC50 - for Crustacea	1,7 mg/l/48h (OECD 202, Daphnia magna, ECHA dossier).
LC10 for Fish	4,2 mg/l/96h (study report, Oncorhynchus mykiss, ECHA dossier).

12.2. Persistence and degradability**2-PHENOXYETHANOL**

C810048
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Solubility in water 28600 mg/l
Rapidly degradable

ETHANOLAMINE
Solubility in water 1000 - 10000 mg/l
Rapidly degradable

PROPAN-2-OL
Rapidly degradable

ACETIC ACID
Solubility in water > 10000 mg/l
Rapidly degradable

D-LIMONENE
Solubility in water (ECHA dossier). mg/l
Rapidly degradable

POLYALKYLENEOXIDE MODIFIED
HEPTAMETHYLTRISILOXANE
NOT rapidly degradable

BUTANE-1,4 DIOL
Rapidly degradable

DIPHENYL ETHER
Rapidly degradable

12.3. Bioaccumulative potential

POLYALKYLENEOXIDE MODIFIED HEPTAMETHYLTRISILOXANE
LogPow > 3,28

2-PHENOXYETHANOL
Partition coefficient: n-octanol/water 1,2
BCF 0,3493

ETHANOLAMINE
Partition coefficient: n-octanol/water -2,3

PROPAN-2-OL

**C810048
ZETA 7 SOLUTION**

Partition coefficient: n-octanol/water 0,05

ACETIC ACID

Partition coefficient: n-octanol/water -0,17

12.4. Mobility in soil**2-PHENOXYETHANOL**

Partition coefficient: soil/water 1,6

ETHANOLAMINE

Partition coefficient: soil/water -0,5646

ACETIC ACID

Partition coefficient: soil/water 1,153

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

SECTION 13. Disposal considerations**13.1. Waste treatment methods**

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information**14.1. UN number**

ADR / RID, IMDG, IATA: 3265

14.2. UN proper shipping name

ADR / RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ACETIC ACID, DIDECYLDIMETHYLAMMONIUM CHLORIDE), MARINE POLLUTANT

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IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ACETIC ACID, DIDECYLDIMETHYLAMMONIUM CHLORIDE), MARINE POLLUTANT
 IATA: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ACETIC ACID, DIDECYLDIMETHYLAMMONIUM CHLORIDE), MARINE POLLUTANT

14.3. Transport hazard class(es)

ADR / RID: Class: 8 Label: 8



IMDG: Class: 8 Label: 8



IATA: Class: 8 Label: 8

**14.4. Packing group**

ADR / RID, IMDG, IATA: II

14.5. Environmental hazards

ADR / RID: Environmentally Hazardous



IMDG: Marine Pollutant



IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 80	Limited Quantities: 1 L	Tunnel restriction code: (E)
	Special Provision: -		
IMDG:	EMS: F-A, S-B	Limited Quantities: 1 L	
IATA:	Cargo:	Maximum quantity: 30 L	Packaging instructions: 855
	Pass.:	Maximum quantity: 1 L	Packaging instructions: 851
	Special Instructions:	A3, A803	

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

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

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Point 3

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

DIDECYLDIMETHYLAMMONIUM CHLORIDE - (PERFLUOROOCTANE SULFONIC ACID, PERFLUOROOCTANE SULFONATES, PERFLUOROOCTANE SULFONAMIDES, PERFLUOROOCTANE SULFONYLS)

Substances subject to the Rotterdam Convention:

DIDECYLDIMETHYLAMMONIUM CHLORIDE - (PERFLUOROOCTANE SULFONIC ACID, PERFLUOROOCTANE SULFONATES, PERFLUOROOCTANE SULFONAMIDES, PERFLUOROOCTANE SULFONYLS)

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

Composition according to Annex VII.a of Reg. (CE) 648/2004:

15% ≤ x < 30%: phenols;

5% ≤ x < 15%: disinfectant;

< 5%: non-ionic surfactants, perfume (Limonene, Citral, Linalool, Geraniol, Citronellol, Hexyl Cinnamal).

15.2. Chemical safety assessment

No chemical safety assessment has been processed for the mixture and the substances it contains.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2	Flammable liquid, category 2
Flam. Liq. 3	Flammable liquid, category 3
Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
Asp. Tox. 1	Aspiration hazard, category 1
Skin Corr. 1A	Skin corrosion, category 1A
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1

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Eye Irrit. 2	Eye irritation, category 2
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Aquatic Acute 1	Hazardous to the aquatic environment, acute toxicity, category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
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.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation

- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

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2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
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5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
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Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:

The following sections were modified:

15.