Safety Data Sheet

According to Annex II to REACH - Regulation 2015/830

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

1.1. Product identifier

Code: **U01215**
Product name **PERFORMA V10 E/BD**

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

Intended use **Emulsifiable metalworking fluid for mechanical machining.**
Uses advised against: Different uses than those intended.

1.3. Details of the supplier of the safety data sheet

Name **CENTRO DISTRIBUZIONE UTENSILI SCPA**
Full address **Via delle Gerole, 19**
District and Country **20867 CAPONAGO (MB)**
ITALY

tel. +39 02 95746081

fax. + 39 02 95745182

e-mail address of the competent person responsible for the Safety Data Sheet **info@cdu.net**
Product distribution by: **Centro Distribuzione Utensili Scpa**

1.4. Emergency telephone number

For urgent inquiries refer to **+39 02 95746081 during office hours 8.30-12.30 - 13.30-17.30.**

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 (EU) Regulation 2015/830.
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:

Eye irritation, category 2	H319	Causes serious eye irritation.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1A	H317	May cause an allergic skin reaction.
Hazardous to the aquatic environment, chronic toxicity, category 3	H412	Harmful 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:

Signal words: WARNING

Hazard statements:

H319 Causes serious eye irritation.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

H412	Harmful to aquatic life with long lasting effects.
EUH208	Contains: 3-IODO-2-PROPYNYL BUTYLCARBAMATE May produce an allergic reaction.

Precautionary statements:

P280	Wear protective gloves / eye protection / face protection.
P261	Avoid breathing dust / fume / gas / mist / vapours / spray.
P333+P313	If skin irritation or rash occurs: Get medical advice / attention.
P337+P313	If eye irritation persists: Get medical advice / attention.
P264	Wash the skin thoroughly after handling.
P362+P364	Take off contaminated clothing and wash it before reuse.

Contains: 1,2-BENZISOTHIAZOL-3(2H)-ONE
2-METHYL-2H-ISOTHIAZOLIN-3-ONE

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

3.2. Mixtures

Contains:

Identification	**x = Conc. %**	**Classification 1272/2008 (CLP)**
ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED		
CAS 68920-66-1	6,00 ≤ x ≤ 9,00	Skin Irrit. 2 H315, Aquatic Chronic 2 H411
EC 500-236-9		
INDEX -		
Reg. no. 01-2119489407-26		
ETHOXYLATED OLEOAMIDE		
CAS 26027-37-2	1,22 ≤ x ≤ 3,22	Eye Irrit. 2 H319
EC 607-851-2		
INDEX -		
2-(2-BUTOXYETHOXY)ETHANOL		
CAS 112-34-5	1,95 ≤ x ≤ 2,95	Eye Irrit. 2 H319
EC 203-961-6		
INDEX 603-096-00-8		
Reg. no. 01-2119475104-44		
2-AMINOETHANOL		
CAS 141-43-5	0,5 ≤ x ≤ 1,5	Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Aquatic Chronic 3 H412
EC 205-483-3		
INDEX 603-030-00-8		
Reg. no. 01-2119486455-28		
1-AMINOPROPAN-2-OL		
CAS 78-96-6	0,49 ≤ x ≤ 1,49	Acute Tox. 4 H312, Skin Corr. 1B H314, Eye Dam. 1 H318
EC 201-162-7		
INDEX 603-082-00-1		
Reg. no. 01-2119475331-43		
OXYDIPROPANOL		
CAS 25265-71-8	0,28 ≤ x ≤ 1,28	--

EC 246-770-3

INDEX -

Reg. no. 01-2119456811-38

1,1'-IMINODIPROPAN-2-OL

CAS 110-97-4 0,10 ≤ x ≤ 1,00 Eye Irrit. 2 H319

EC 203-820-9

INDEX 603-083-00-7

(Z)-N-METHYL-N-(1-OXO-9-OCTADECENYL)GLYCINE

CAS 110-25-8 0,10 ≤ x ≤ 0,99 Acute Tox. 4 H332, Eye Dam. 1 H318, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=1

EC 203-749-3

INDEX -

Reg. no. 01-2119488991-20

3-IODO-2-PROPYNYL BUTYLCARBAMATE

CAS 55406-53-6 0,10 ≤ x ≤ 0,32 Acute Tox. 3 H331, Acute Tox. 4 H302, STOT RE 1 H372, Eye Dam. 1 H318, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=10, Aquatic Chronic 1 H410 M=1

EC 259-627-5

INDEX 616-212-00-7

2-METHYL-2H-ISOTHIAZOLIN-3-ONE

CAS 2682-20-4 0,10 ≤ x ≤ 0,24 Acute Tox. 3 H301, Acute Tox. 3 H311, Skin Corr. 1B H314, Eye Dam. 1 H318, STOT SE 3 H335, Skin Sens. 1A H317, Aquatic Acute 1 H400 M=1, Aquatic Chronic 2 H411

EC 220-239-6

INDEX -

1,2-BENZISOTHIAZOL-3(2H)-ONE

CAS 2634-33-5 0,10 ≤ x ≤ 0,24 Acute Tox. 4 H302, Eye Dam. 1 H318, Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Acute 1 H400 M=1

EC 220-120-9

INDEX 613-088-00-6

ETHANEDIOL

CAS 107-21-1 0,01 ≤ x ≤ 0,124 Acute Tox. 4 H302, STOT RE 2 H373

EC 203-473-3

INDEX 603-027-00-1

Reg. no. 01-2119456816-28

PYRIDINE-2-THIOL 1-OXIDE, SODIUM SALT

CAS 3811-73-2 0,01 ≤ x ≤ 0,049 Acute Tox. 3 H311, Acute Tox. 4 H302, Acute Tox. 4 H332, Eye Irrit. 2 H319, Skin Irrit. 2 H315, Aquatic Acute 1 H400 M=100

EC 223-296-5

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Reg. no. 01-2119493385-28

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 for the doctor: symptomatically treatment.

SECTION 5. Firefighting measures

5.1. Extinguishing media
SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture
HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
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. 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
Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

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. Keep containers away from any incompatible materials, see section 10 for details.

Storage class TRGS 510 (Germany): 10

7.3. Specific end use(s)
Emulsifiable metalworking fluid for mechanical machining.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters
Regulatory References:

AUS	Österreich	Grenzwerteverordnung 2011 - GKV 2011
BEL	Belgique	AR du 11/3/2002. La liste est mise à jour pour 2010
BGR	България	МИНИСТЕРСТВО НА ТРУДА И СОЦИАЛНАТА ПОЛИТИКА МИНИСТЕРСТВО НА ЗДРАВЕОПАЗВАНЕТО НАРЕДБА No 13 от 30 декември 2003 г
CHE	Suisse / Schweiz	Valeurs limites d`exposition aux postes de travail 2014. / Grenzwerte am Arbeitsplatz
CYP	Κύπρος	Κ.Δ.Π. 268/2001; Κ.Δ.Π. 55/2004; Κ.Δ.Π. 295/2007; Κ.Δ.Π. 70/2012
CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	TRGS 900 (Fassung 31.1.2018 ber.) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte
DNK	Danmark	Graensevaerdier per stoffer og materialer
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2017
EST	Eesti	Töökeskkonna keemiliste ohutegurite piirnormid 1. Vastu võetud 18.09.2001 nr 293 RT I 2001, 77, 460 - Redaktsiooni jõustumise kp: 01.01.2008
FIN	Suomi	HTP-arvot 2012. Haitallisiksi tunnetut pitoisuudet - Sosiaali- ja terveysministeriön 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
HRV	Hrvatska	NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva
HUN	Magyarország	50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról
IRL	Éire	Code of Practice Chemical Agent Regulations 2011
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	DĖL LIETUVOS HIGIENOS NORMOS HN 23:2007 CHEMINIŲ MEDŽIAGŲ 2007 m. spalio 15 d. Nr. V-827/A1-287
LUX	Luxembourg	Règlement grand-ducal du 28 juillet 2011 modifiant le règlement grand-ducal modifié du 30 juillet 2002 concernant la protection de la santé et de la sécurité des travailleurs contre les risques liés à des agents chimiques sur le lieu de travail
LVA	Latvija	Ķīmisko vielu aroda ekspozīcijas robežvērtības (AER) darba vides gaisā 2012
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 7 czerwca 2017 r
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
ROU	România	Monitorul Oficial al României 44; 2012-01-19
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 20. júna 2007
SVN	Slovenija	Uradni list Republike Slovenije 04.06.2015 (1602) - Pravilnik o spremembah in dopolnitvah Pravilnika o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu
SWE	Sverige	Occupational Exposure Limit Values, AF 2011:18
TUR	Türkiye	KİMYASAL MADDELERLE ÇALIŞMALARDA SAĞLIK VE GÜVENLİK ÖNLEMLERİ HAKKINDA YÖNETMELİK - Resmi Gazete Tarihi: 12.08.2013 Resmi Gazete Sayısı: 28733
EU	OEL EU	Directive (EU) 2017/2398; 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 2018

2-(2-BUTOXYETHOXY)ETHANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
MAK	AUS	67,5	15	101,2	15
VLEP	BEL	67,5	10	101,2	15
VLE	CHE	67	10	101,2	15

MAK	CHE	67	10	101,2	15	
MAK	DEU	67	10	100,5	15	
TLV	DNK	100		200		
VLA	ESP	67,5	10	101,2	15	
HTP	FIN	68	10			
VLEP	FRA	67,5	10	101,2	15	
WEL	GBR	67,5	10	101,2	15	
TLV	GRC	67,5	10	101,2	15	
AK	HUN	67,5		101,2		
OEL	IRL	67,5	10	101,2	15	INHAL
VLEP	ITA	67,5	10	101,2	15	
RD	LTU	67,5	10	101,2	15	
VL	LUX	67,5	10	101,2	15	
RV	LVA	67,5	10	101,2	15	
OEL	NLD	50		100		SKIN
NDS	POL	67		100		
VLE	PRT	67,5	10	101,2	15	
TLV	ROU	150		250		
NPHV	SVK	67,5	10	101,2		
MV	SVN	67,5	10	101,25	15	
MAK	SWE	68	10	101	15	
ESD	TUR	67,5	10	101,2	15	INHAL
OEL	EU	67,5	10	101,2	15	
TLV-ACGIH		67,5	10	101,2	15	

Predicted no-effect concentration - PNEC		
Normal value in fresh water	1,1	mg/l
Normal value in marine water	0,11	mg/l
Normal value for fresh water sediment	4,4	mg/kg
Normal value for marine water sediment	0,44	mg/kg
Normal value for water, intermittent release	11	mg/l
Normal value of STP microorganisms	200	mg/l
Normal value for the food chain (secondary poisoning)	56	mg/l
Normal value for the terrestrial compartment	0,32	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral								5 mg/kg
Inhalation	60,7 mg/m3		40,5 mg/m3	40,5 mg/m3	101,2 mg/m3		67,5 mg/m3	67,5 mg/m3
Skin				50 mg/kg				83 mg/kg

2-AMINOETHANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	AUS	2,5	1	7,6	3	SKIN
VLEP	BEL	2,5	1	7,6	3	SKIN
TLV	BGR	8		15		
VLE	CHE	5	2	10	4	
MAK	CHE	5	2	10	4	
TLV	CZE	2,5		7,5		SKIN
MAK	DEU	0,5	0,2	0,5	0,2	
TLV	DNK	2,5	1			SKIN
VLA	ESP	2,5	1	7,5	3	SKIN
TLV	EST	2,5	1	7,6	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	
GVI	HRV	2,5	1	7,6	3	SKIN
OEL	IRL	2,5	1	7,6	3	SKIN
VLEP	ITA	2,5	1	7,6	3	SKIN
RD	LTU	8	3	15	6	SKIN
VL	LUX	2,5	1	7,6	3	SKIN
RV	LVA	0,5	0,2	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
TLV	ROU	2,5	1	7,6	3	SKIN
MV	SVN	2,5	1	7,5	3	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	0,085	mg/l
Normal value in marine water	0,0085	mg/l
Normal value for fresh water sediment	0,434	mg/kg
Normal value for marine water sediment	0,0434	mg/kg
Normal value for water, intermittent release	0,028	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	1,29	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				3,75 mg/kg				
Inhalation			2 mg/m3	2 mg/m3			3,3 mg/m3	VND
Skin				0,24 mg/kg				1 mg/kg

1-AMINOPROPAN-2-OL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min				
		mg/m3	ppm	mg/m3	ppm			
MAK	DEU	5,8	2	11,6	4	INHAL	Aerosol	

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,0327	mg/l
Normal value in marine water	0,00327	mg/l
Normal value for fresh water sediment	0,177	mg/kg
Normal value for marine water sediment	0,0177	mg/kg
Normal value for water, intermittent release	0,327	mg/l
Normal value of STP microorganisms	3,3	mg/l
Normal value for the terrestrial compartment	0,0161	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				0,67 mg/kg bw/d				
Inhalation				2,1 mg/m3				8,5 mg/m3

OXYDIPROPANOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min			
		mg/m3	ppm	mg/m3	ppm		
MAK	CHE	200		400		INHAL	aerosol
AGW	DEU	100		200		INHAL	
MAK	DEU	100		200		INHAL	

1,1'-IMINODIPROPAN-2-OL

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,2777	mg/l
Normal value in marine water	0,02777	mg/l
Normal value for fresh water sediment	2,33	mg/kg
Normal value for marine water sediment	0,233	mg/kg
Normal value for water, intermittent release	2,777	mg/l
Normal value of STP microorganisms	15000	mg/l

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic

Oral	1,3 mg/kg bw/d	
Inhalation	3,9 mg/m3	16 mg/m3
Skin	6,3 mg/kg bw/d	12,5 mg/kg bw/d

(Z)-N-METHYL-N-(1-OXO-9-OCTADECENYL)GLYCINE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	DEU	0,05		0,1		INHAL

3-IODO-2-PROPYNYL BUTYLCARBAMATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	CHE	0,12	0,01	0,24	0,02	
AGW	DEU	0,058	0,005	0,116	0,01	INHAL
MAK	DEU	0,058	0,005	0,116	0,01	

2-METHYL-2H-ISOTHIAZOLIN-3-ONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	AUS	0,05				INHAL
MAK	CHE	0,2		0,4		INHAL
MAK	DEU	0,2		0,4		INHAL

ETHANEDIOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	AUS	26	10	52	20	SKIN
TLV	BGR	52		104		SKIN
VLE	CHE	26	10	52	20	SKIN
MAK	CHE	26	10	52	20	SKIN
TLV	CYP	52	20	104	40	SKIN
TLV	CZE	50		100		SKIN
MAK	DEU	26	10	52	20	SKIN
TLV	DNK	26	10			SKIN
VLA	ESP	52	20	104	40	SKIN
TLV	EST	52	20	104	40	SKIN
HTP	FIN	50	20	100	40	SKIN
VLEP	FRA	52	20	104	40	SKIN
WEL	GBR	52	20	104	40	
TLV	GRC	125	50	125	50	
GVI	HRV	52	20	104	40	SKIN

AK	HUN	52		104		
OEL	IRL	52	20	104	40	SKIN
VLEP	ITA	52	20	104	40	SKIN
RD	LTU	25	10	50	20	SKIN
VL	LUX	52	20	104	40	SKIN
RV	LVA	52	20	104	40	SKIN
OEL	NLD	52		104		SKIN
TLV	NOR		25			SKIN
NDS	POL	15		50		
VLE	PRT	52	20	104	40	SKIN
TLV	ROU	52	20	104	40	SKIN
NPHV	SVK	52	20	104		SKIN
MV	SVN	52	20	104	40	SKIN
MAK	SWE	25	10	50	20	SKIN
ESD	TUR	52	20	104	40	SKIN
OEL	EU	52	20	104	40	SKIN
TLV-ACGIH			25		50	
TLV-ACGIH				10		INHAL

Predicted no-effect concentration - PNEC		
Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	37	mg/kg
Normal value for marine water sediment	3,7	mg/kg
Normal value for water, intermittent release	10	mg/l
Normal value of STP microorganisms	199,5	mg/l
Normal value for the terrestrial compartment	1,53	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation	VND	7 mg/m3					35 mg/m3	VND
Skin			VND	53 mg/kg			VND	106 mg/kg

PYRIDINE-2-THIOL 1-OXIDE, SODIUM SALT

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
MAK	AUS	1		4		
MAK	CHE	1		2		INHAL
AGW	DEU	1		2		INHAL
MAK	DEU	1		2		INHAL
TLV	DNK	1		2		
TLV-ACGIH		0,35				

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).
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 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.
Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	clear liquid
Colour	yellow
Odour	sweety
Odour threshold	Not available
pH	9,85 – 10,35 (Sol. 5%)
Melting point / freezing point	Not available
Initial boiling point	> 100 °C
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	0,97 - 0,99 Kg/l (20°C)
Solubility	emulsifiable in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	40 cSt (40°C)
Explosive properties	Not applicable
Oxidising properties	Not available

9.2. Other information

VOC (Directive 2010/75/EC) :	2,99 %
VOC (volatile carbon) :	1,30 %

SECTION 10. Stability and reactivity

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

2-AMINOETHANOL
Corrodes: copper,copper alloys.
ETHANEDIOL
In the air absorbs moisture.Decomposes at temperatures above 200°C/392°F.

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

10.3. Possibility of hazardous reactions
No hazardous reactions are foreseeable in normal conditions of use and storage.

2-(2-BUTOXYETHOXY)ETHANOL
May react dangerously with: strong oxidising agents. Develops hydrogen on contact with: light metals.
2-AMINOETHANOL
Reacts with: oxidising agents, acids, halogenated compounds, acid chlorides. Avoid contact with: acid chlorides, acid anhydrides.
1-AMINOPROPAN-2-OL
May react with: isocyanates, oxidising agents, halogens, acid chlorides.
Avoid contact with: acid anhydrides, acid chlorides.
ETHANEDIOL
Risk of explosion on contact with: perchloric acid. May react dangerously with: chlorosulphuric acid, sodium hydroxide, sulphuric acid, phosphorus pentasulphide, chromium (III) oxide, chromyl chloride, potassium perchlorate, potassium dichromate, sodium peroxide, aluminium. Forms explosive mixtures with: air.

10.4. Conditions to avoid
None in particular. However the usual precautions used for chemical products should be respected.

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED
Avoid contact with: strong acids, oxidising agents.
2-AMINOETHANOL
Avoid exposure to: high temperatures.
1-AMINOPROPAN-2-OL
Avoid exposure to: high temperatures, moisture.
ETHANEDIOL
Avoid exposure to: sources of heat, naked flames.

10.5. Incompatible materials
ETHOXYLATED OLEOAMIDE
Avoid contact with: strong oxidising agents.
2-(2-BUTOXYETHOXY)ETHANOL
Incompatible with: strong oxidising agents.
2-AMINOETHANOL
Incompatible with: oxidising agents, isocyanates, acid anhydrides, acid chlorides, acids. Incompatible materials: copper alloys, mild steel.
1-AMINOPROPAN-2-OL
Incompatible with: strong acids, strong oxidising agents, halogenated organic substances. Avoid contact with: halogenated hydrocarbons. May corrode: metals, aluminium.

10.6. Hazardous decomposition products
ETHOXYLATED OLEOAMIDE
When heated to decomposition releases: irritating vapours.
2-AMINOETHANOL
In decomposition develops: carbon oxides, nitric oxide, nitrous gases.
1-AMINOPROPAN-2-OL
May develop: nitric oxide, carbon oxides, nitrous gases.
ETHANEDIOL
May develop: hydroxyacetaldehyde, glyoxal, acetaldehyde, methane, carbon monoxide, hydrogen.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information
Information not available.

Information on likely routes of exposure
2-(2-BUTOXYETHOXY)ETHANOL
WORKERS: inhalation; contact with the skin.
ETHANEDIOL
WORKERS: inhalation; contact with the skin.
POPULATION: inhalation of ambient air; contact with the skin of products containing the substance.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
2-(2-BUTOXYETHOXY)ETHANOL
May be absorbed by inhalation, ingestion and skin contact; is irritating for the skin and especially for the eyes. May cause damage to the spleen. At room temperature the danger of inhalation is unlikely, due to the low vapour pressure of the substance.
ETHANEDIOL
By ingestion it initially stimulates the central nervous system; then a phase of depression takes place. You can have kidney damage, with anuria and uremia. Symptoms of overexposure are: vomiting, drowsiness, difficulty breathing, convulsions. The lethal dose for humans is approximately 1.4 ml / kg.

Interactive effects
Information not available.

ACUTE TOXICITY

LC50 (Inhalation) of the mixture:	> 20 mg/l
LD50 (Oral) of the mixture:	>2000 mg/kg
LD50 (Dermal) of the mixture:	>2000 mg/kg

2-METHYL-2H-ISOTHIAZOLIN-3-ONE

LD50 (Oral)	391 mg/kg Rat
LD50 (Dermal)	326 mg/kg Rabbit
LC50 (Inhalation)	0,11 mg/l/4h Rat

1,1'-IMINODIPROPAN-2-OL

LD50 (Oral)	2000 mg/kg Rat
LD50 (Dermal)	8000 mg/kg Rabbit

3-IODO-2-PROPYNYL BUTYLCARBAMATE

LD50 (Oral)	1056 mg/kg Female rat
LD50 (Dermal)	> 2000 mg/kg Rabbit
LC50 (Inhalation)	0,67 mg/l/4h (Respirable dust)

(Z)-N-METHYL-N-(1-OXO-9-OCTADECENYL)GLYCINE

LD50 (Oral)	> 5000 mg/kg Rat
LC50 (Inhalation)	1,8 mg/l/4h Rat

2-(2-BUTOXYETHOXY)ETHANOL

LD50 (Oral)	2410 mg/kg Rat (OECD-401)
LD50 (Dermal)	2764 mg/kg Rabbit (OECD-402)
LC50 (Inhalation)	> 29 ppm/2h Rat

ETHANEDIOL

LD50 (Oral)	7712 mg/kg Rat
LD50 (Dermal)	> 3500 mg/kg Mouse
LC50 (Inhalation)	> 2,5 mg/l Rat

2-AMINOETHANOL

LD50 (Oral)	1515 mg/kg Rat (OECD - 401)
LD50 (Dermal)	2504 mg/kg Rabbit (OECD - 402)
LC50 (Inhalation)	> 1,3 mg/l/6h Rat (IRT)

1-AMINOPROPAN-2-OL

LD50 (Oral)	2813 mg/kg Rat
LD50 (Dermal)	1851 mg/kg Rabbit

ETHOXYLATED OLEOAMIDE

LD50 (Oral)	> 2000 mg/kg Rat

1,2-BENZISOTHIAZOL-3(2H)-ONE

LD50 (Oral)	1020 mg/kg bw Rat

PYRIDINE-2-THIOL 1-OXIDE, SODIUM SALT

LD50 (Oral)	1500 mg/kg Rat
LD50 (Dermal)	1800 mg/kg Rabbit
LC50 (Inhalation)	2,7 mg/l/4h Rat

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

LD50 (Oral)	> 2000 mg/kg Rat (OECD 401)

SKIN CORROSION / IRRITATION
Causes skin irritation.

SERIOUS EYE DAMAGE / IRRITATION
Causes serious eye irritation.

RESPIRATORY OR SKIN SENSITISATION
Sensitising for the skin.
May produce an allergic reaction.
Contains: 3-IODO-2-PROPYNYL BUTYLCARBAMATE

GERM CELL MUTAGENICITY
Does not meet the classification criteria for this hazard class.

CARCINOGENICITY
Does not meet the classification criteria for this hazard class.

ETHANEDIOL
The available studies have not shown carcinogenic power. In a 2-year carcinogenicity study conducted by the US National Toxicology Program (NTP), in which ethylene glycol was administered in the diet, no "evidence of carcinogenic activity" was observed in male and female B6C3F1 mice. (NTP, 1993).

REPRODUCTIVE TOXICITY
Does not meet the classification criteria for this hazard class.

STOT - SINGLE EXPOSURE
Does not meet the classification criteria for this hazard class.

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.

SECTION 12. Ecological information

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

12.1. Toxicity

1,1'-IMINODIPROPAN-2-OL	
LC50 - for Fish	1466 mg/l/96h Fish
EC50 - for Crustacea	277,7 mg/l/48h
EC50 - for Algae / Aquatic Plants	339 mg/l/72h
3-IODO-2-PROPYNYL BUTYLCARBAMATE	
LC50 - for Fish	0,067 mg/l/96h Rainbow trout
EC50 - for Crustacea	0,16 mg/l/48h Daphnia Magna
EC50 - for Algae / Aquatic Plants	0,022 mg/l/72h Scenedesmus
(Z)-N-METHYL-N-(1-OXO-9-OCTADECENYL)GLYCINE	
LC50 - for Fish	> 1 mg/l Fish
EC50 - for Crustacea	0,43 mg/l/48h Daphnia
EC50 - for Algae / Aquatic Plants	6,3 mg/l/72h Algae
2-(2-BUTOXYETHOXY)ETHANOL	
LC50 - for Fish	1300 mg/l/96h Lepomis macrochirus (OECD 201)
EC50 - for Crustacea	> 100 mg/l/48h Daphnia magna (OECD 203)
ETHANEDIOL	
LC50 - for Fish	72860 mg/l/96h Pimephales promelas
EC50 - for Crustacea	> 100 mg/l/48h Daphnia magna
2-AMINOETHANOL	
LC50 - for Fish	349 mg/l/96h Cyprinus carpio
EC50 - for Crustacea	27,04 mg/l/48h Daphnia magna (OECD - 202)
EC50 - for Algae / Aquatic Plants	2,8 mg/l/72h Selenastrum capricornutum (OECD - 201)
Chronic NOEC for Crustacea	0,85 mg/l/21d Daphnia magna (OECD- 211)
1-AMINOPROPAN-2-OL	
LC50 - for Fish	> 215 mg/l/96h Leuciscus idus (DIN 38412)
EC50 - for Crustacea	109 mg/l/48h Daphnia magna (OECD 202)
EC50 - for Algae / Aquatic Plants	32,7 mg/l/72h Scenedesmus subspicatus (OECD 201)
ETHOXYLATED OLEOAMIDE	
LC50 - for Fish	> 10 mg/l/96h Carassius auratus
EC50 - for Crustacea	> 10 mg/l/48h Daphnia

1,2-BENZISOTHIAZOL-3(2H)-ONE

LC50 - for Fish	10 mg/l/96h
EC50 - for Crustacea	4,4 mg/l/48h

PYRIDINE-2-THIOL 1-OXIDE, SODIUM SALT

LC50 - for Fish	0,0066 mg/l/96h

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

LC50 - for Fish	> 1000 mg/l/96h Danio rerio (OECD 203)

12.2. Persistence and degradability

2-METHYL-2H-ISOTHIAZOLIN-3-ONE
Degradability: information not available

1,1'-IMINODIPROPAN-2-OL

Solubility in water	Soluble
Rapidly degradable	

3-IODO-2-PROPYNYL BUTYLCARBAMATE
Rapidly degradable

(Z)-N-METHYL-N-(1-OXO-9-OCTADECENYL)GLYCINE
Rapidly degradable

2-(2-BUTOXYETHOXY)ETHANOL
Rapidly degradable

ETHANEDIOL

Solubility in water	1000 -10000 mg/l
Rapidly degradable	

2-AMINOETHANOL

Solubility in water	Miscible
Rapidly degradable	90% (21d) OECD 301/A

1-AMINOPROPAN-2-OL

Solubility in water	Miscible
Rapidly degradable	78 % (28 d) OECD 301F

ETHOXYLATED OLEOAMIDE
Rapidly degradable

1,2-BENZISOTHIAZOL-3(2H)-ONE

NOT rapidly degradable	17 % (28d) OECD 302/B

PYRIDINE-2-THIOL 1-OXIDE, SODIUM SALT
Rapidly degradable

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

Solubility in water	Insoluble
Rapidly degradable	> 70% (28d) OECD TG 301 B

12.3. Bioaccumulative potential

3-IODO-2-PROPYNYL BUTYLCARBAMATE

Partition coefficient: n-octanol/water	2,81 Log Kow

2-(2-BUTOXYETHOXY)ETHANOL

Partition coefficient: n-octanol/water	1 Log Kow (20°C pH 7 - OCSE 117)

ETHANEDIOL

Partition coefficient: n-octanol/water	-1,36

2-AMINOETHANOL

Partition coefficient: n-octanol/water	-2,3 (OECD - 107)

1-AMINOPROPAN-2-OL

Partition coefficient: n-octanol/water	-0,93 Log Kow (OECD – 107)
BCF	0,11

1,2-BENZISOTHIAZOL-3(2H)-ONE

Partition coefficient: n-octanol/water	0,64 Kow
BCF	3,2

ALCOHOLS, C16-18 AND C18-UNSATD., ETHOXYLATED

Partition coefficient: n-octanol/water	> 3,8 Log Kow

12.4. Mobility in soil

2-(2-BUTOXYETHOXY)ETHANOL

Partition coefficient: soil/water	1

2-AMINOETHANOL

Partition coefficient: soil/water	1,16

1-AMINOPROPAN-2-OL

Partition coefficient: soil/water	1,78

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

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number
Not applicable.

14.2. UN proper shipping name
Not applicable.

14.3. Transport hazard class(es)
Not applicable.

14.4. Packing group
Not applicable.

14.5. Environmental hazards
Not applicable.

14.6. Special precautions for user
Not applicable.

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: None.

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006
Product
Point 3
Contained substance
Point 55 2-(2-BUTOXYETHOXY)ETHANOL Reg. no.: 01-2119475104-44

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:
None.

Substances subject to the Rotterdam Convention:
None.

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.

German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017)
WGK 2: Hazard to waters.

15.2. Chemical safety assessment
No chemical safety assessment for the mixture was carried out.

SECTION 16. Other information

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

Acute Tox. 3	Acute toxicity, category 3
Acute Tox. 4	Acute toxicity, category 4
STOT RE 1	Specific target organ toxicity - repeated exposure, category 1
STOT RE 2	Specific target organ toxicity - repeated exposure, category 2
Skin Corr. 1B	Skin corrosion, category 1B
Eye Dam. 1	Serious eye damage, category 1
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
Skin Sens. 1A	Skin sensitization, category 1A
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
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic toxicity, category 3
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
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.
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.

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
1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
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- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website

- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

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:
01 / 02 / 03 / 04 / 07 / 08 / 09 / 10 / 11 / 12 / 15 / 16.