Safety data sheet

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

1.1. Product identifier

Code:	VE3720
Product name	V3a MATT/S
Chemical name and synonym	Polyester resin solution in aliphatic ester

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

Intended use	Dual-component paint product (FINISH).

1.3. Details of the supplier of the safety data sheet

Name	CARVER S.r.l. Unipersonale
Full address	Via Papa Giovanni XXIII, 36
District and Country	20090 Rodano (MI) Italy
	Tel. +39 (0)2 9500171
	Fax +39 (0)2 95320921
e-mail address of the competent person responsible for the Safety Data Sheet	sds@carver.it
Product distribution by	www.carver.it

1.4. Emergency telephone number

For urgent inquiries refer to	Centro Antiveleni Niguarda (MILANO) tel. +39 (0)2 66101029

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:

Flammable liquid, category 3	H226	Flammable liquid and vapour.
Eye irritation, category 2	H319	Causes serious eye irritation.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.

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:

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

SECTION 2. Hazards identification. ... / >>

EUH208 Contains: ORGANIC POLYMER N° CAS 1259547-09-5
May produce an allergic reaction.

Precautionary statements:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P280 Wear protective gloves / eye protection / face protection.

Contains: N-BUTYL ACETATE

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.		Conc. %.	Classification 1272/2008 (CLP).
POLYESTER RESIN			
CAS.		50 - 60	
EC.			
INDEX.			
N-BUTYL ACETATE			
CAS.	*123-86-4*	20 - 26	Flam. Liq. 3 H226, STOT SE 3 H336, EUH066
EC.	*204-658-1*		
INDEX.	*607-025-00-1*		
Reg. no.	*01-2119485493-29*		
4-METHYLPENTAN-2-ONE			
CAS.	*108-10-1*	10 - 16	Flam. Liq. 2 H225, Acute Tox. 4 H332, Eye Irrit. 2 H319, STOT SE 3 H335, EUH066
EC.	*203-550-1*		
INDEX.	*606-004-00-4*		
Reg. no.	*01-2119473980-30*		
HYDROCARBON RESIN			
CAS.		5 - 8	
EC.			
INDEX.			
ADDITIVES			
CAS.		1 - 2	
EC.			
INDEX.			
POLYPROPYLENE WAX			
CAS.		1 - 2	
EC.			
INDEX.			
2-METHOXY-1-METHYLETHYL ACETATE			
CAS.	*108-65-6*	0,5 - 0,7	Flam. Liq. 3 H226
EC.	*203-603-9*		
INDEX.	*607-195-00-7*		
Reg. no.	*01-2119475791-29*		
ORGANIC POLYMER N° CAS 1259547-09-5			
CAS.	*1259547-09-5*	0,5 - 0,7	Skin Sens. 1 H317
EC.			
INDEX.			

Note: Upper limit is not included into the range.
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 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Wash immediately with plenty of water. If irritation persists, get medical advice/attention. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. In the event of breathing difficulties, get medical advice/attention immediately.

INGESTION: Get medical advice/attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person, unless authorised by a doctor.

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

For symptoms and effects caused by the contained substances, see chap. 11.

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 and 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

If large quantities of the product are involved in a fire, they can make it considerably worse. Do not breathe combustion products.

5.3. Advice for firefighters.

GENERAL INFORMATION

In the case of fire, use jets of water to cool the containers to prevent the risk of explosions (product decomposition and excess pressure) and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Remove all containers containing the product from the fire, if it is safe to do so.

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. Check incompatibility for container material in section 7. 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. 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. 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.

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities.

Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition.

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed.
Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s).

Information not available.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GRB	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
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
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 20. júna 2007
EU	OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
	TLV-ACGIH	ACGIH 2014

N-BUTYL ACETATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min	
		mg/m3	ppm	mg/m3	ppm
MAK	DEU	480	100	960	200
VLA	ESP	724	150	965	200
VLEP	FRA	710	150	940	200
WEL	GRB	724	150	966	200
TLV	GRC	710	150	950	200
GVI	HRV	724	150	966	200
OEL	NLD	150			
NDS	POL	200		950	
NPHV	SVK	480	100	960	
TLV-ACGIH		713	150	950	200

SECTION 8. Exposure controls/personal protection. ... / >>

4-METHYLPENTAN-2-ONE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	83	20	166	40	SKIN.
MAK	DEU	83	20	166	40	SKIN.
VLA	ESP	83	20	208	50	
VLEP	FRA	83	20	208	50	
WEL	GRB	208	50	416	100	SKIN.
TLV	GRC	410	100	410	100	
GVI	HRV	83	20	208	50	
TLV	ITA	83	20	208	50	
OEL	NLD	104		208		
NDS	POL	83		200		
NPHV	SVK	83	20	208		
OEL	EU	83	20	208	50	
TLV-ACGIH		82	20	307	75	

2-METHOXY-1-METHYLETHYL ACETATE

Threshold Limit Value.

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
AGW	DEU	270	50	270	50	
MAK	DEU	270	50	270	50	
VLA	ESP	275	50	550	100	SKIN.
VLEP	FRA	275	50	550	100	SKIN.
WEL	GRB	274	50	548	100	
TLV	GRC	275	50	550	100	
TLV	ITA	275	50	550	100	SKIN.
OEL	NLD	550				
NDS	POL	260		520		
NPHV	SVK	275	50	550		SKIN.
OEL	EU	275	50	550	100	SKIN.

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

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. 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 I 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.
Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.
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.

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance	liquid
Colour	yellowish
Odour	typical of solvent
Odour threshold.	Not available.
pH.	Not available.
Melting point / freezing point.	Not available.
Initial boiling point.	Not available.
Boiling range.	Not available.
Flash point.	27 °C.
Evaporation Rate	Not available.
Flammability of solids and gases	Not available.
Lower inflammability limit.	Not available.
Upper inflammability limit.	Not available.
Lower explosive limit.	Not available.
Upper explosive limit.	Not available.
Vapour pressure.	Not available.
Vapour density	Not available.
Relative density.	1 Kg/l
Solubility	soluble in main organic solvents
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature.	Not available.
Decomposition temperature.	Not available.
Viscosity	27 ± 5 sec. F4
Explosive properties	Not available.
Oxidising properties	Not available.

9.2. Other information.

VOC (Directive 2004/42/EC) :	35,80 %	-	358,00	g/litre.
VOC (volatile carbon) :	24,00 %	-	240,00	g/litre.

SECTION 10. Stability and reactivity.

10.1. Reactivity.

The product can decompose and/or react violently.

1-METHOXY-2-PROPANOL ACETATE: stable but with the air it may slowly develop peroxides that explode with an increase in temperature.
4-METHYLPENTAN-2-ONE: reacts violently with light metals, such as aluminium; attacks different types of plastic.
N-BUTYL ACETATE: decomposes readily with water, especially when warm.

10.2. Chemical stability.

See previous paragraph.

10.3. Possibility of hazardous reactions.

See paragraph 10.1.

1-METHOXY-2-PROPANOL ACETATE: may react violently with oxidising agents and strong acids and alkaline metals.
4-METHYLPENTAN-2-ONE: can react violently with oxidising agents. In the presence of air it forms peroxides. Forms explosive mixtures with air when hot.
N-BUTYL ACETATE: risk of explosion on contact with: strong oxidising agents. Can react dangerously with alkaline hydroxides, potassium tert-butoxide. Forms explosive mixtures with the air.

10.4. Conditions to avoid.

As the product decomposes even at ambient temperature, it must be stored and used at a controlled temperature. Avoid violent blows.

1-METHOXY-2-PROPANOL ACETATE: store in an inert atmosphere, sheletered from moisture because it hydrolises easily.
4-METHYLPENTAN-2-ONE: avoid exposure to sources of heat.
N-BUTYL ACETATE: avoid exposure to moisture, sources of heat and naked flames.

10.5. Incompatible materials.

1-METHOXY-2-PROPANOL ACETATE: oxidising agents, strong acids and alkaline metals.
4-METHYLPENTAN-2-ONE: oxidising substances, reducing substances.
N-BUTYL ACETATE: water, nitrates, strong oxidising agents, acids and alkalis and potassium tert-butoxide.

SECTION 10. Stability and reactivity. ... / >>

10.6. Hazardous decomposition products.

Information not available.

SECTION 11. Toxicological information.

11.1. Information on toxicological effects.

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.

Acute effects: stinging eyes. Symptoms may include: rubescence, edema, pain and lachrymation. Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.
This product contains highly volatile substances, which may cause serious depression of the central nervous system (CNS) and have negative effects, such as drowsiness, dizziness, slow reflexes, narcosis.
This product may have a degreasing action on the skin, producing dryness and chapped skin after repeated exposure.
This product contains sensitizing substance/s and may cause allergic reactions.

1-METHOXY-2-PROPANOL ACETATE: the main way of entry is the skin, whereas the respiratory way is less important owing to the low vapour tension of the product. Concentrations above 100 ppm cause eye irritation, nose and oropharynx. At 1000 ppm disturbance in the equilibrium and severe eye irritation is observed. Clinical and biological examinations carried out on exposed volunteers revealed no anomalies. Acetate produces greater skin and ocular irritation on direct contact. No chronic effects have been reported in man.
N-BUTYL ACETATE:in humans the substance's vapours cause irritation to the eues and nose. In the event of repeated exposure, there is skin irritation, dermatosis (with driness and flaking of the skin) and keratitis.

2-METHOXY-1-METHYLETHYL ACETATE

LD50 (Oral).	8530 mg/kg Rat
LD50 (Dermal).	> 5000 mg/kg Rat

4-METHYLPENTAN-2-ONE

LD50 (Oral).	2080 mg/kg Rat
LD50 (Dermal).	> 16000 mg/kg Rabbit
LC50 (Inhalation).	> 8,2 mg/l/4h Rat

N-BUTYL ACETATE

LD50 (Oral).	> 6400 mg/kg Rat
LD50 (Dermal).	> 5000 mg/kg Rabbit
LC50 (Inhalation).	21,1 mg/l/4h Rat

SECTION 12. Ecological information.

12.1. Toxicity.

2-METHOXY-1-METHYLETHYL ACETATE

LC50 - for Fish.	140 mg/l/96h Oncorhyncus mykiss - Fish

4-METHYLPENTAN-2-ONE

LC50 - for Fish.	> 179 mg/l/96h Fish
EC50 - for Crustacea.	> 200 mg/l/48h Daphnia Magna

N-BUTYL ACETATE

LC50 - for Fish.	18 mg/l/96h Fish
EC50 - for Crustacea.	44 mg/l/48h Daphnia Magna

12.2. Persistence and degradability.

2-METHOXY-1-METHYLETHYL ACETATE
Solubility in water. > 10000 mg/l
Rapidly biodegradable.

4-METHYLPENTAN-2-ONE
Solubility in water. > 10000 mg/l
Rapidly biodegradable.

SECTION 12. Ecological information. ... / >>

N-BUTYL ACETATE
Solubility in water. mg/l 1000 - 10000

12.3. Bioaccumulative potential.

2-METHOXY-1-METHYLETHYL ACETATE
Partition coefficient: n-octanol/water. 1,2

4-METHYLPENTAN-2-ONE
Partition coefficient: n-octanol/water. 1,9

N-BUTYL ACETATE
Partition coefficient: n-octanol/water. 2,3
BCF. 15,3

12.4. Mobility in soil.

4-METHYLPENTAN-2-ONE
Partition coefficient: soil/water. 2,008

N-BUTYL ACETATE
Partition coefficient: soil/water. < 3

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: 1263

14.2. UN proper shipping name.

ADR / RID: PAINT or PAINT RELATED MATERIAL.
IMDG:
IATA:

SECTION 14. Transport information. ... / >>

14.3. Transport hazard class(es).

ADR / RID:	Class: 3	Label: 3	
IMDG:	Class: 3	Label: 3	
IATA:	Class: 3	Label: 3	

14.4. Packing group.

ADR / RID, IMDG, IATA: III

14.5. Environmental hazards.

ADR / RID: NO
IMDG: NO
IATA: NO

14.6. Special precautions for user.

ADR / RID:	HIN - Kemler: 30 Special Provision: -	Limited Quantities: -	Tunnel restriction code: -
IMDG:	EMS: F-E, S-E	Limited Quantities: -	
IATA:	Cargo:	Maximum quantity: -	Packaging instructions: -
	Pass.:	Maximum quantity: -	Packaging instructions: -
	Special Instructions:	-	

14.7. Transport in bulk according to Annex II of MARPOL73/78 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. 6

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.
Product.
Point. 3 - 40

Substances in Candidate List (Art. 59 REACH).
None.
Substances subject to authorisarion (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.

VOC (Directive 2004/42/EC) :
Two-pack performance coatings.
VOC given in g/litre of product in a ready-to-use condition :

SECTION 15. Regulatory information. ... / >>

Limit value:	500,00 (2010)
VOC of product :	499,00

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. 4	Acute toxicity, category 4
Eye Irrit. 2	Eye irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

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 (EU) 1907/2006 (REACH) of the European Parliament
2. Regulation (EU) 1272/2008 (CLP) of the European Parliament

SECTION 16. Other information. ... / >>

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

- 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
- ECHA website

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 / 09 / 15.