Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

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

1.1. Product identifier

Code: **4110016470**
Product name **PRIMER FOR SEALANTS**

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

Intended use **Activator for glasses based on a mixture of silanes in solvent**

1.3. Details of the supplier of the safety data sheet

Name **Meccanocar Italia S.r.l.**
Full address **Via San Francesco, 22**
District and Country **56033 Capannoli (PI)**
Italy

Tel. +39 0587 609433

Fax +39 0587 607145

e-mail address of the competent person

responsible for the Safety Data Sheet **moreno.meini@meccanocar.it**
Supplier:

1.4. Emergency telephone number

For urgent inquiries refer to **National Poisons Information Service: +44 121 507 4123**

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 2020/878.
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 2	H225	Highly flammable liquid and vapour.
Aspiration hazard, category 1	H304	May be fatal if swallowed and enters airways.
Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, category 3	H336	May cause drowsiness or dizziness.
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:

Signal words: Danger

Hazard statements:

H225 Highly flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H318 Causes serious eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P331 Do NOT induce vomiting.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P280 Wear protective gloves/ protective clothing / eye protection / face protection.

P310 Immediately call a POISON CENTER / doctor.

P370+P378 In case of fire: use CO2 fire extinguisher to extinguish.

Contains: HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
TITANIUM TETRABUTANOLATE
ETHYL ACETATE

2.3. Other hazards

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

The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES INDEX - EC 927-510-4 CAS 64742-49-0 REACH Reg. 01-2119475515-33-XXXX	78 ≤ x < 82	Flam. Liq. 2 H225, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE 3 H336, Aquatic Chronic 2 H411
ETHYL ACETATE INDEX 607-022-00-5 EC 205-500-4 CAS 141-78-6 REACH Reg. 01-2119475103-46-XXXX	12 ≤ x < 13,5	Flam. Liq. 2 H225, Eye Irrit. 2 H319, STOT SE 3 H336, EUH066
TITANIUM TETRABUTANOLATE INDEX - EC 227-006-8 CAS 5593-70-4 REACH Reg. 01-2119967423-33-XXXX	4 ≤ x < 4,5	Flam. Liq. 3 H226, Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, STOT SE 3 H336
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE INDEX - EC 217-164-6 CAS 1760-24-3 REACH Reg. 01-2119970215-39-XXXX	3 ≤ x < 3,5	Eye Dam. 1 H318, STOT SE 3 H335, Skin Sens. 1 H317
CYCLOHEXANONE INDEX 606-010-00-7 EC 203-631-1 CAS 108-94-1 REACH Reg. 01-2119453616-35-XXXX	0,05 ≤ x < 0,1	Flam. Liq. 3 H226, Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 4 H332, Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335 LD50 Oral: 1890 mg/kg, STA Dermal: 1100 mg/kg, STA Inhalation vapours: 11 mg/l

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. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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.

Send away individuals who are not suitably equipped. Use explosion-proof equipment. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

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

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. 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 cool and 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)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory references:

ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France. ED 984 - INRS
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvos higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo
NOR	Norge	Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
GBR	United Kingdom	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; 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 98/24/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2022

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	1400				

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				149 mg/kg bw/d				
Inhalation				447 mg/m3				2085 mg/m3
Skin				149 mg/kg bw/d				300 mg/kg bw/d

ETHYL ACETATE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	734	200	1468	400	
VLEP	FRA	1400	400			
VLEP	ITA	734	200	1468	400	
RD	LTU	500	150	1100 (C)	300 (C)	
TLV	NOR	734	200			
VLE	PRT	734	200	1468	400	
NDS/NDSCh	POL	734		1468		
WEL	GBR	734	200	1468	400	
OEL	EU	734	200	1468	400	
TLV-ACGIH		1441	400			

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,24	mg/l
Normal value in marine water	0,024	mg/l
Normal value for fresh water sediment	1,15	mg/kg
Normal value for marine water sediment	0,115	mg/kg
Normal value of STP microorganisms	650	mg/l
Normal value for the food chain (secondary poisoning)	0,2	mg/kg
Normal value for the terrestrial compartment	0,148	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				4,5 mg/kg bw/d				
Inhalation	734 mg/m3	734 mg/m3	367 mg/m3	367 mg/m3	1468 mg/m3	1468 mg/m3	734 mg/m3	734 mg/m3
Skin				37 mg/kg bw/d				63 mg/kg bw/d

TITANIUM TETRABUTANOLATE

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,08	mg/l
Normal value in marine water	0,008	mg/l

Normal value for fresh water sediment	0,069	mg/kg
Normal value for marine water sediment	0,007	mg/kg
Normal value of STP microorganisms	65	mg/l
Normal value for the terrestrial compartment	0,017	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 bw/d				
Inhalation				152 mg/m3				127 mg/m3
Skin				37,5 mg/kg bw/d				

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,062	mg/l
Normal value in marine water	0,006	mg/l
Normal value for fresh water sediment	0,22	mg/kg
Normal value for marine water sediment	0,022	mg/kg
Normal value of STP microorganisms	25	mg/l
Normal value for the terrestrial compartment	0,009	mg/kg

CYCLOHEXANONE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
VLA	ESP	41	10	82	20	SKIN
VLEP	FRA	40,8	10	81,6	20	
VLEP	ITA	40,8	10	81,6	20	SKIN
RD	LTU	40,8	10	81,6	20	SKIN
TLV	NOR	40	10	80	20	SKIN
VLE	PRT	40,8	10	81,6	20	SKIN
NDS/NDSCh	POL	40		80		SKIN
WEL	GBR	41	10	82	20	SKIN
OEL	EU	40,8	10	81,6	20	SKIN
TLV-ACGIH		80	20	201	50	SKIN

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,033	mg/l
Normal value in marine water	0,003	mg/l
Normal value for fresh water sediment	0,249	mg/kg
Normal value for marine water sediment	0,025	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,03	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	Acute local	Acute	Chronic local	Chronic

				systemic		systemic		systemic
Oral		1,5 mg/kg bw/d		1,5 mg/kg bw/d				
Inhalation	40 mg/m3	20 mg/m3	20 mg/m3	10 mg/m3	80 mg/m3	80 mg/m3	40 mg/m3	40 mg/m3
Skin		1 mg/kg bw/d		1 mg/kg bw/d		4 mg/kg bw/d		4 mg/kg bw/d

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 ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

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.
The following should be considered when choosing work glove material (see standard EN 374): 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 Regulation 2016/425 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, wear a mask with a type AX filter, whose limit of use will be defined by the manufacturer (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.

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES

Chemical resistant gloves are recommended. If contact with forearms is likely, wear glove-style gloves. Nitrile, CEN EN 420 and EN 374 standards

provide general requirements and lists of glove types.

ETHYL ACETATE

Butyl rubber gloves (opening times> 480 minutes), Neoprene ™ rubber, nitrile rubber (opening times up to 480 minutes).

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE

Chemical protective gloves or gloves must be worn and removed correctly to avoid skin contamination: Silver shield (TM). 4H (TM). Regarding the glove breakthrough time, contact the supplier of the chemical protective glove.

CYCLOHEXANONE

Respiratory protection:
Respiratory protection suitable for lower concentrations or short-term effect: Filter for gases / vapors of organic compounds (boiling point> 65 ° C, eg. EN 14387 Type A)
Hand protection:
Chemical resistant protective gloves (EN 374)
Materials also suitable for direct and prolonged contact (Recommended: Protection index 6, corresponding to> 480 minutes of permeation time according to EN 374):
butyl rubber (butyl) - coating thickness 0.7 mm
Suitable materials short-term contact and / or splashes (recommended: at least protection index 2, corresponding> 30 minutes of breakthrough time according to EN 374)
nitrile rubber (NBR) - Coating thickness 0.4 mm
fluoroelastomer (FKM) - coating thickness 0.7 mm
The manufacturer's instructions for use must be observed due to the great diversity of types.
Eye protection:
Airtight protective goggles (splash goggles) (e.g. EN 166)
Body protection:
Body protection should be chosen based on activity and possible exposure, eg. apron, protective boots, chemical protective suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	transparent	
Odour	solvent	
Melting point / freezing point	not available	
Initial boiling point	not available	
Boiling range	75-85 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	-4 °C	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	not available	
Kinematic viscosity	not available	

Solubility	not available
Partition coefficient: n-octanol/water	not available
Vapour pressure	60 hPa
Density and/or relative density	0,73
Relative vapour density	not available
Particle characteristics	not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

VOC (Directive 2010/75/EU) 99,90 % - 729,29 g/litre

SECTION 10. Stability and reactivity

10.1. Reactivity

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

ETHYL ACETATE

It slowly decomposes to acetic acid and ethanol due to the action of light, air and water. Stable under normal conditions. Upon storage, it is slowly decomposed by water.

CYCLOHEXANONE

Attacks various types of plastic materials.

It can condense under the effect of heat giving resinous compounds. Reacts with oxidizing agents.

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.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals,hydrides,oleum.May react violently with: fluorine,strong oxidising agents,chlorosulphuric acid,potassium tert-butoxide.Forms explosive mixtures with: air.

CYCLOHEXANONE

Risk of explosion on contact with: hydrogen peroxide,nitric acid,heat,mineral acids.May react violently with: oxidising agents.Forms explosive mixtures with: air.

10.4. Conditions to avoid

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

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES

Avoid heat, sparks, open flames and other sources of ignition.

ETHYL ACETATE

Avoid exposure to: light,sources of heat,naked flames.

Ignition sources.

TITANIUM TETRABUTANOLATE

Avoid all possible sources of ignition (sparks or flames). Do not pressurize, cut, weld, braze, weld, drill, grind or expose containers to heat or sources of ignition.

CYCLOHEXANONE

Avoid exposure to: sources of heat,naked flames.

Avoid sources of ignition. Avoid extreme heat.

10.5. Incompatible materials

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES

Strong oxidants.

ETHYL ACETATE

Incompatible with: acids,bases,strong oxidants,aluminium,nitrates,chlorosulphuric acid.Incompatible materials: plastic materials.

Oxidizing agents, acids, alkalis.

TITANIUM TETRABUTANOLATE

Reactive or incompatible with the following materials: oxidizing materials and acids. Hydrolyzes in water to form n-butanol and titanium dioxide.

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE

Strong oxidizing agents

CYCLOHEXANONE

Strong oxidizing agents, acids, bases

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.

ETHYL ACETATE

Carbon oxides on combustion.

TITANIUM TETRABUTANOLATE

When heated to decomposition, hydrocarbons, carbon monoxide and carbon dioxide can be produced.

CYCLOHEXANONE

Incomplete combustion results in the formation of toxic gases, containing mainly carbon monoxide and carbon dioxide.

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 hazard classes as defined in Regulation (EC) No 1272/2008

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

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

CYCLOHEXANONE

LD50 (Oral):	1890 mg/kg Rat
LC50 (Inhalation vapours):	> 6,2 mg/l/4h Rat

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: standard acute oral test
Reliability: 2
Species: Rat (Charles River CD; male / female)
Route of exposure: Oral
Results: LD50> 8 mL / kg bw
Method: Equivalent or similar to OECD 403
Reliability: 2
Species: Rat (Wistar; male / female)
Route of exposure: Inhalation (vapors)
Results: LC50> 23.3 mg / L air
Method: The acute toxicity of SBP 100/140 was determined according to Noakes and Sanderson (1969): A method for determining the dermal toxicity of pesticides, Br. J. Industr Med 26: 59-64.
Reliability: 2
Species: Rat (Charles River CD; male / female)
Route of exposure: Dermal
Results: LD50> = 4 mL / kg bw

ETHYL ACETATE
Method: Multi-Substance Rule for the Testing of Neurotoxicity 40 CFR Part 799 (58 FR 40262)
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: Negative
Method: Not indicated
Reliability: 2
Species: Rabbit (New Zealand White; male)
Route of exposure: Dermal
Results: LD50> 20 000 mg / kg bw

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: EPA OPPTS 870.1100
Reliability: 1

Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: LD50 = 1897 mg / kg bw
Method: EPA OPPTS 870.1300
Reliability: 1
Species: Rat (male / female)
Route of exposure: Inhalation (aerosol)
Results: LC50> 1.49- <2.44 mg / l air
Method: EPA OPPTS 870.1200
Reliability: 1
Species: Rabbit (New Zealand White; male / female)
Route of exposure: Dermal
Results: LD50> 2000 mg / kg bw / day

SKIN CORROSION / IRRITATION

Causes skin irritation

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Equivalent or similar to OECD 404
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Category 2, Irritating

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: EPA OPPTS 870.2500
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Not classified

CYCLOHEXANONE
Method: OECD Guideline 404
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Dermal
Results: Irritating

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Federal Register of the F.D.A. 28 (110), 6.6.1963, para. 191.12. Test for eye irritants
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Not irritating

ETHYL ACETATE
Method: OECD 405
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Not irritating

TITANIUM TETRABUTANOLATE
Reliability: 2
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Irritating

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: OECD 405
Reliability: 1
Species: Rabbit (New Zealand White)
Route of exposure: Ocular
Results: Category 1 (irreversible effects on the eye)

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Equivalent or similar to OECD 406
Reliability: 2
Species: guinea pig (p-strain; male / female)
Route of exposure: Dermal
Results: Not sensitizing

Respiratory sensitization

Skin sensitization

ETHYL ACETATE
Method: OECD 406
Reliability: 1
Species: guinea pig (Dunkin-Hartley; female)
Route of exposure: Dermal
Results: Not sensitizing

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: OECD 406
Reliability: 1
Species: guinea pig (Dunkin-Hartley; male / female)
Route of exposure: Dermal
Results: Category 1B (indicated as skin sensitizing potential)

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Equivalent or similar to OECD 471
Reliability: 1
Species: S. typhimurium, E. Coli
Results: Negative with or without metabolic activation
Bibliographic reference: Brooks, T.M. et al., The genetic toxicology of some hydrocarbon and oxygenated solvents (1988)

ETHYL ACETATE
Method: Equivalent or similar to OECD 471 in vitro test
Reliability: 2
Species: S. typhimurium
Results: Negative with and without metabolic activation
Method: Equivalent or similar to OECD 474 in vivo test
Reliability: 2
Species: Chinese hamster (male / female)
Route of exposure: Oral
Results: Negative

TITANIUM TETRABUTANOLATE
Method: OECD Guideline 471 - in vitro test
Reliability: 1
Species: S. typhimurium
Results: Negative

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: Equivalent or similar to OECD 476 in vitro test
Reliability: 2
Species: Chinese hamster
Results: Negative with and without metabolic activation
Method: Equivalent or similar to OECD 474 in vivo test
Reliability: 2
Species: Mouse (Swiss-Webster; male / female)
Route of exposure: Intraperitoneal
Results: Negative

CYCLOHEXANONE
Method: comparable to OECD 482-test in vitro
Reliability: 2
Species: Human fibroblasts
Results: Negative

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

ETHYL ACETATE
Method: Equivalent or similar to OECD 416
Reliability: 1
Species: Mouse (CD-1; male / female)
Route of exposure: Oral
Results: Negative
Method: Equivalent or similar to OECD 414
Reliability: 2
Species: Rat (Sprague-Dawley)
Route of exposure: Inhalation
Results: Negative

CYCLOHEXANONE
Method: OECD Guideline 414
Reliability: 1
Species: Rabbit (Himalayan)
Route of exposure: Oral
Results: NOAEL 250 mg / kg bw / day

Adverse effects on sexual function and fertility

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Equivalent or similar to OECD 416
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (vapors)
Results: NOAEL 9000 ppm

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: Equivalent or similar to OECD 422
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: Negative, NOAEL (fertility)> = 500 mg / kg bw / day

Adverse effects on development of the offspring

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Food and Drug Administration 1966 "Guidelines for Reproduction Studies for Safety Evaluation of Drugs for Human Use", Segment II
Reliability: 2
Species: Rat (CD (SD))
Route of exposure: Inhalation (vapors)
Results: NOAEC 1 200 ppm

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: OECD 414
Reliability: 1
Species: Rat (Sprague-Dawley)
Route of exposure: Oral
Results: Negative, NOAEL (development) = 750 mg / kg bw / day

STOT - SINGLE EXPOSURE

May cause drowsiness or dizziness

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

ETHYL ACETATE
Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

TITANIUM TETRABUTANOLATE
Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Based on available data and through expert judgment, the substance is classified in the target organ toxicity class for single exposure.

CYCLOHEXANONE
Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for single exposure.

Target organs

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Central nervous system

ETHYL ACETATE
Central nervous system

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Respiratory tract

Route of exposure

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES

Inhalation

ETHYL ACETATE
Inhalation

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Inhalation

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Method: Not indicated
Reliability: 2
Species: Rat (Wistar; male)
Route of exposure: Inhalation (vapors)
Results: NOAEC 12 470 mg / m³ air
Bibliographic reference: Takeuchi, Y. et al., A comparative study of the toxicity of n-pentane, n-hexane, and n-heptane to the peripheral nerve of the rat. (1981)

ETHYL ACETATE
Method: Equivalent or similar to EPA OTS 795.2600
Reliability: 2
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: NOAEL 900 mg / kg bw / day
Method: EPA OTS 798.2450
Reliability: 1
Species: Rat (Crl: CD®BR; male / female)
Route of exposure: Inhalation
Results: LOEC 350 ppm

TITANIUM TETRABUTANOLATE
Based on available data and through expert judgment, the substance is not classified in the target organ toxicity class for prolonged or repeated exposure.

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Method: Equivalent or similar to OECD 422
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Oral
Results: Negative, NOAEL> = 500 mg / kg bw / day
Method: OECD 413
Reliability: 1
Species: Rat (Sprague-Dawley; male / female)
Route of exposure: Inhalation (aerosol)
Results: NOAEC = 15 mg / m3 air
Method: Not indicated
Reliability: 2
Species: Rat (Fischer 344; male / female)

Route of exposure: Dermal
Results: NOAEL> = 1 545 mg / kg bw / day

CYCLOHEXANONE
Method: OECD Guideline 408
Reliability: 1
Species: Rat (Wistar; male / female)
Route of exposure: Oral
Results: NOAEL 143 mg / kg bw / day

ASPIRATION HAZARD

Toxic for aspiration

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

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

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE	
LC50 - for Fish	597 mg/l/96h
EC50 - for Crustacea	81 mg/l/48h
HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES	
LC50 - for Fish	13,4 mg/l/96h
TITANIUM TETRABUTANOLATE	
LC50 - for Fish	1825 mg/l/96h
EC50 - for Crustacea	1300 mg/l/48h
EC50 - for Algae / Aquatic Plants	225 mg/l/72h
EC10 for Algae / Aquatic Plants	134 mg/l/72h
Chronic NOEC for Algae / Aquatic Plants	134 mg/l

12.2. Persistence and degradability

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
Quickly degradable in water, 98% in 28 days.
ETHYL ACETATE
Rapidly degradable, 60% in 10 days.
TITANIUM TETRABUTANOLATE
Quickly biodegradable
N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Degradable in water, 39% in 28 days.

ETHYL ACETATE

Solubility in water	> 10000 mg/l

Rapidly degradable

CYCLOHEXANONE

Solubility in water	0,1 - 100 mg/l

Rapidly degradable

12.3. Bioaccumulative potential

ETHYL ACETATE

Partition coefficient: n-octanol/water	0,68
BCF	30

CYCLOHEXANONE

Partition coefficient: n-octanol/water	0,86

12.4. Mobility in soil

CYCLOHEXANONE

Partition coefficient: soil/water	1,18

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 ≥ than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. 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.

HYDROCARBONS, C7, N-ALCANS, ISOALKANS, CYCLES
The product is suitable for combustion in a closed controlled burner for the value or disposal of the fuel by supervised incineration at very high temperatures to prevent the formation of undesirable combustion products.

ETHYL ACETATE
Dispose of as hazardous waste. Recover or recycle if possible. Otherwise incineration. Dispose according to local regulations.
Disposal of the container: empty the container completely. Empty containers may contain highly flammable residues. Do not cut, grind, puncture, weld or dispose of containers unless adequate precautions have been taken against this hazard. Do not remove the container labels until they are cleaned. Send

to drum recovery or metal recovery.

TITANIUM TETRABUTANOLATE
Waste should only be disposed of via a licensed waste contractor. The European Waste Catalog (EWC) and the European Waste List (EWL) are a harmonized list of waste. Waste materials must be classified before final disposal with EWC codes. Waste and empty containers must be treated according to their classification and properties, referring to local and national regulations on waste management. Waste management options: landfill disposal for non-hazardous or hazardous waste (Council Directive on landfills of waste 99/31 / EU and Council Decision establishing criteria and procedures for the acceptance of waste in landfills 2003/33 / EU) or dispose of by incinerating hazardous waste.
The generation of waste should be avoided or minimized wherever possible. Dispose of excess and non-recyclable products through a licensed waste disposal contractor. Disposal of this product, solutions and any by-products must always comply with the requirements of environmental protection and waste legislation and any local waste management legislation.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. All wastes containing residues of the substance or its hazardous degradation products must be classified as hazardous waste.
All waste containing residues of the substance or its hazardous degradation products must be disposed of as hazardous waste in the authorized hazardous waste incineration plants, managed according to Directive 2008/98 / EC on waste, Directive 2000/76 / EC on incineration of waste and Best available techniques for waste incineration described in the respective BREF of August 2006.
Contaminated packaging: Contaminated packaging must be emptied as much as possible and disposed of as hazardous waste in incineration plants in accordance with Directive 2000/76 / EC. Clean packaging material must be subject to waste management schemes (recovery, recycling, reuse) according to local waste management regulations.
The substance and its container must be disposed of safely. Be careful when handling empty containers that have not been cleaned or rinsed. Empty containers or liners can retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

N-[3-(TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE
Dispose according to local regulations. According to the European Waste Catalog, the waste codes are not specific to the product, but specific to the application. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

SECTION 14. Transport information

14.1. UN number or ID number

ADR / RID, IMDG, IATA: 1139

14.2. UN proper shipping name

ADR / RID: COATING SOLUTION
IMDG: COATING SOLUTION
IATA: COATING SOLUTION

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	Limited Quantities: 5 L	Tunnel restriction code: (D/E)
	Special provision: -		
IMDG:	EMS: F-E, S-E	Limited Quantities: 5 L	
IATA:	Cargo:	Maximum quantity: 220 L	Packaging instructions: 366
	Passengers:	Maximum quantity: 60 L	Packaging instructions: 355
	Special provision:	A3	

14.7. Maritime transport in bulk according to IMO instruments

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/EU: P5c-E2

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

Product

Point	3 - 40

Contained substance

Point	75

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)

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

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 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.

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

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
Asp. Tox. 1	Aspiration hazard, category 1
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
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic toxicity, category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
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.
H411	Toxic to aquatic life with long lasting effects.

EUH066 Repeated exposure may cause skin dryness or cracking.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 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: 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: Regulation (EC) 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: Time-weighted average exposure limit
- TWA STEL: Short-term 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) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) 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
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8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
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14. Regulation (EU) 2018/669 (XI Atp. CLP)
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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.
CALCULATION METHODS FOR CLASSIFICATION
Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.
Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

Changes to previous review:
The following sections were modified:
02 / 03 / 08 / 09 / 11 / 12 / 15 / 16.