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

1.1. Product identifier

PT 310 PLUS Sensor activator

Further trade names

PT 310 PLUS Sensor-Aktivator
PT 310 PLUS Activateur capteur
PT 310 PLUS activador para sensores

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

Use of the substance/mixture

Cleaner

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	PMA/TOOLS AG	
Street:	Siemensring 42	
Place:	D-47877 Willich	
Telephone:	+49 2154 922230	Telefax: +49 2154 922255
e-mail:	info@pma-tools.de	
Contact person:	Michael Münter	
e-mail:	msds@pma-tools.de	- Please DO NOT use for requesting Safety Data Sheets.
Internet:	www.pma-tools.de	
Responsible Department:	Laboratory	

1.4. Emergency telephone number: Telephone number of the company in case of emergencies:
+49 2154 922230 (Mon - Fri 8.00h - 17.00h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.

2.2. Label elements

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Signal word: Danger

Pictograms:



Hazard statements

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370+P378 In case of fire: Use Dry extinguishing powder, Carbon dioxide (CO2) to extinguish.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Special danger of slipping by leaking/spilling product.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion. Stop leak if safe to do so. Collect spillage. Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide adequate ventilation. Avoid contact with eyes and skin. Do not eat, drink or smoke when using this product. See information supplied by the manufacturer. If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

Further information on handling

Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and after work. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on storage compatibility

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
78-93-3	Butan-2-one (methyl ethyl ketone)	200	600		TWA (8 h)	WEL
		300	899		STEL (15 min)	WEL
64-17-5	Ethanol	1000	1920		TWA (8 h)	WEL
		-	-		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
78-93-3	Butan-2-one	butan-2-one	70 µmol/L	urine	Post shift

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DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
64-17-5 ethanol, ethyl alcohol				
Consumer DNEL, acute		inhalation	local	950 mg/m ³
Consumer DNEL, acute		dermal	local	950 ppm
Consumer DNEL, long-term		inhalation	systemic	114 mg/m ³
Consumer DNEL, long-term		oral	systemic	87 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	206 mg/kg bw/day
Worker DNEL, acute		inhalation	local	1900 mg/m ³
Worker DNEL, long-term		inhalation	systemic	950 mg/m ³
Worker DNEL, long-term		dermal	systemic	343 mg/kg bw/day
2530-83-8 [3-(2,3-epoxypropoxy)propyl]trimethoxysilane				
Worker DNEL, long-term		inhalation	systemic	147 mg/m ³
Worker DNEL, acute		dermal	systemic	21 mg/kg bw/day
Worker DNEL, acute		inhalation	systemic	147 mg/m ³
Worker DNEL, long-term		dermal	systemic	21 mg/kg bw/day
78-93-3 butanone				
Consumer DNEL, long-term		dermal	systemic	412 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	106 mg/m ³
Consumer DNEL, long-term		oral	systemic	31 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	1161 mg/kg bw/day
Worker DNEL, long-term		inhalation	systemic	600 mg/m ³

PNEC values

CAS No	Substance	Value
64-17-5 ethanol, ethyl alcohol		
Freshwater		0,96 mg/l
Freshwater (intermittent releases)		2,75 mg/l
Marine water		0,79 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Secondary poisoning		0,72 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg
2530-83-8 [3-(2,3-epoxypropoxy)propyl]trimethoxysilane		
Freshwater		1 mg/l
Freshwater (intermittent releases)		1 mg/l
Marine water		0,1 mg/l
Freshwater sediment		0,79 mg/kg
Soil		0,13 mg/kg
78-93-3 butanone		
Freshwater		55,8 mg/l
Marine water		55,8 mg/l
Freshwater sediment		284,74 mg/kg
Marine sediment		284,7 mg/kg
Soil		22,5 mg/kg

8.2. Exposure controls

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Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection

Suitable eye protection: goggles.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
NBR (Nitrile rubber) DIN EN 374, Permeation time (maximum wear time) > 480 min

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Combination filtering device (EN 14387): A

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	clear
Odour:	Alcohol

pH-Value:	not applicable
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Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	78 °C
Flash point:	9 °C

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

Vapours may form explosive mixtures with air.

Lower explosion limits:	3,3 vol. %
Upper explosion limits:	19 vol. %

Auto-ignition temperature

Solid:	not applicable
Gas:	363 °C

Decomposition temperature:	not determined
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Oxidizing properties

Not oxidising.

Vapour pressure: (at 20 °C)	42,663 hPa
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Density:	0,8 g/cm ³
Water solubility:	miscible

Solubility in other solvents

not determined

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Partition coefficient:	not determined
Viscosity / kinematic: (at 40 °C)	< 7 mm ² /s
Vapour density:	0,8
Evaporation rate:	not determined
Solvent content:	98%

9.2. Other information

Solid content: not determined

Conductivity: not determined

Surface tension: not determined

Volatile organic compounds (VOC) content in percent by weight: 98%

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air. Take action to prevent static discharges.

10.5. Incompatible materials

Strong acid

Oxidising agent, strong

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

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

CAS No	Chemical name	Exposure route	Dose	Species	Source	Method
64-17-5	ethanol, ethyl alcohol	oral	LD50 6200 mg/kg	Rat	IUCLID	
		dermal	LD50 >2000 mg/kg	Rabbit		OECD 402
		inhalative (4 h) vapour	LC50 95,6 mg/l	Rat	RTECS	
2530-83-8	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	oral	LD50 8025 mg/kg	Rat		OECD 401
		dermal	LD50 >2000 mg/kg	Rabbit		OECD 402
		inhalative aerosol	LC50 5,3 mg/l	Rat		OECD 403
78-93-3	butanone	oral	LD50 3300 mg/kg	Rat		
		dermal	LD50 5000 mg/kg	Rabbit		
		inhalative (4 h) vapour	LC50 34,5 mg/l	Rat		

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

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

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Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
64-17-5	ethanol, ethyl alcohol					
	Acute fish toxicity	LC50 13000 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)		OECD 203
	Acute algae toxicity	ErC50 275 mg/l	72 h	Chlorella vulgaris		OECD 201
	Acute crustacea toxicity	EC50 9268 - 14221 mg/l	48 h	Daphnia magna	IUCLID	
2530-83-8	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane					
	Acute fish toxicity	LC50 55 mg/l	96 h	Brachydanio rerio (zebra-fish)		
	Acute algae toxicity	ErC50 350 mg/l	96 h	Chlorella vulgaris		
	Acute crustacea toxicity	EC50 324 mg/l	48 h	Daphnia magna (Big water flea)		
78-93-3	butanone					
	Acute fish toxicity	LC50 1690 mg/l	96 h	Lepomis macrochirus (Bluegill)		
	Acute algae toxicity	ErC50 1972 mg/l	72 h	Pseudokirchneriella subcapitata		OECD 201
	Acute crustacea toxicity	EC50 308 mg/l	48 h	Daphnia magna (Big water flea)		OECD 202

12.2. Persistence and degradability

The product has not been tested.

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
64-17-5	ethanol, ethyl alcohol			
	OECD 301B	97%		
2530-83-8	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane			
		37%	28	DOC
	Not readily biodegradable (according to OECD criteria)			
78-93-3	butanone			
	OECD 301D	98%	28	
	Readily biodegradable (according to OECD criteria).			

12.3. Bioaccumulative potential

The product has not been tested.

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Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
64-17-5	ethanol, ethyl alcohol	-0,31
2530-83-8	[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	0,5
78-93-3	butanone	0,29

BCF

CAS No	Chemical name	BCF	Species	Source
64-17-5	ethanol, ethyl alcohol	0,66 - 3,2		

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

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

12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

070104 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals; other organic solvents, washing liquids and mother liquors; hazardous waste

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1170
14.2. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
 Hazard label: 3



Classification code: F1
 Special Provisions: 144 601
 Limited quantity: 1 L
 Excepted quantity: E2
 Transport category: 2
 Hazard No: 33
 Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number: UN 1170
14.2. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
 Hazard label: 3

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Classification code: F1
 Special Provisions: 144 601
 Limited quantity: 1 L
 Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number: UN 1170
14.2. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
 Hazard label: 3



Special Provisions: 144
 Limited quantity: 1 L
 Excepted quantity: E2
 EmS: F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1170
14.2. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
 Hazard label: 3



Special Provisions: A3 A58 A180
 Limited quantity Passenger: 1 L
 Passenger LQ: Y341
 Excepted quantity: E2
 IATA-packing instructions - Passenger: 353
 IATA-max. quantity - Passenger: 5 L
 IATA-packing instructions - Cargo: 364
 IATA-max. quantity - Cargo: 60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

Warning: Combustible liquid.

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

not applicable

SECTION 15: Regulatory information

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

Restrictions on use (REACH, annex XVII):

Entry 3: ethanol, ethyl alcohol

2010/75/EU (VOC): 98 % (784 g/l)
 2004/42/EC (VOC): 98 % (784 g/l)

National regulatory information

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Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).
Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1 - 16

Abbreviations and acronyms

ADN: Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways).
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging of substances and mixtures (REGULATION (EC) No 1272/2008)
DIN: Deutsches Institut für Normung (German institute for standardization)
EC: European Community
EG: Europäische Gemeinschaft (European Community)
EINECS: European Inventory of Existing Commercial Substances
ELINCS: European List of Notified Chemical Substances
EN: European Norms
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association - Dangerous Goods Regulations
IBC: Intermediate Bulk Container
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG: International Maritime Code for Dangerous Goods
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
PBT: persistent, bioaccumulative and toxic
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006)
RID: Règlement concernant le transport International ferroviaire de marchandises Dangereuses (Regulation concerning the International Carriage of Dangerous Goods by Rail).
UN: Untited Nations
VOC: Volatile organic compounds
vPvB: very persistent and very bioaccumulative
WKG Wassergefährdungsklasse (water hazard class)

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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

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