

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701480.201	Silyl-2110, 20x1 mL	Page: 1/8
Printing date: 02.06.2020	Date of issue: 02.01.2019	

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

1.1 Product identifier

REF 701480.201
 Product name Silyl-2110, 20x1 mL

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

20 x 1 mL SILYL 2110

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

Relevant identified uses
 Product for analytical use.
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
 The exposure scenario is integrated into sections 1-16.

Uses advised against
 not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
 DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

You find our current versions of SDS (22 languages) in Internet: <http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

1 mL SILYL 2110



GHS02 GHS05 GHS07 GHS08

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.
H351	Carc. 2

2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2).

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

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GHS02



GHS05



GHS07



GHS08

Signal word: DANGER

H314, H351

Causes severe skin burns and eye damage. Suspected of causing cancer.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. Flammable properties. ---

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

Cause after oral intake, inhalation of vapours/dust, impairments of health when ingested in small quantities. Suspected of causing cancer. -

Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

Contains an odor intensive reagent. ---

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

1 mL SILYL 2110

Chemical:	<i>pyridine</i>	CAS No.:	110-86-1
Classification:	H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh.		
Formula:	C ₅ H ₅ N		
Pseudonym:	Azabenzene, Azine		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119493105-40-xxxx		
EC No.:	203-809-9	Indice No.:	613-002-00-7
RTECS:	UR8400000	MFCD:	00011732
KE No.:	KE-29929		
Concentration:	75 - <90 %		
acc. CLP (GHS):	H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh.		

Chemical:	<i>trimethylchlorosilane (TMCS), chlorotrimethylsilane</i>	CAS No.:	75-77-4
Classification:	H225, Flam. Liq. 2, H301, Acute Tox. 3 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H331, Acute Tox. 3 inh., H351, Carc. 2		
Formula:	C ₃ H ₉ ClSi		
Pseudonym:	chlorotrimethylsilane		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119457596-25-xxxx		
EC No.:	200-900-5		
RTECS:	VV2710000	MFCD:	00000502
KE No.:	KE-05939		
Concentration:	5 - <10 %		
acc. CLP (GHS):	H226, Flam. Liq. 3, H314, Skin Corr. 1B, H351, Carc. 2		

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Chemical:	<i>hexamethyldisilazane (HMDS)</i>		CAS No.:	999-97-3
Classification:	H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H311, Acute Tox. 3 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3			
Formula:	C ₆ H ₁₉ NSi ₂			
Pseudonym:	1,1,1,3,3,3-hexamethyldisilazane			
TSCA Inventory:	listed			
REACH Reg. No.:	01-2119438176-38-xxxx			
EC No.:	213-668-5		MFCID:	00008259
RTECS:	JM9230000			
Concentration:	10 - <15 %			
acc. CLP (GHS):	H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H314, Skin Corr. 1B, H332, Acute Tox. 4 inh.			

3.3 Remarks

List of H and P phrases: see section 16.1

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences. ---

4.2 Most important symptoms and effects, both acute and delayed

CMR Effects: Suspected of causing cancer. ---

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. ---

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

5.2 Special hazards arising from the substance or mixture

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. ---

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

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5.4 Additional information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances. ---

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 Environmental precautions

not necessary

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4 ---

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 3
 Water hazard class (DE): 2

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1 mL SILYL 2110

Chemical: *pyridine* CAS No.: 110-86-1

PNEC_(fresh water): 300 µg/L
 PNEC = Predicted No Effect Concentration

EU value: [TWA] 5 ppm / 15 mg/m³
 TRGS 900 (DE): [8h] 5 ppm / 15 mg/m³
 E/e respirable

Short-term exposure factor: 2 (II)
 skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 5 ppm / 15 mg/m³
 NIOSH: [TWA] 5 ppm / 15 mg/m³
 [TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 5 ppm / 15 mg/m³

Chemical: *trimethylchlorosilane (TMCS), chlorotrimethylsilane* CAS No.: 75-77-4

DNEL: [inh] 89 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 250 µg/L
 PNEC = Predicted No Effect Concentration

Chemical: *hexamethyldisilazane (HMDS)* CAS No.: 999-97-3

DNEL: 53 mg/m³
 DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): - mg/L
 PNEC = Predicted No Effect Concentration

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8.2 Exposure controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

8.2.1 Respiratory protection

No additional recommendations.

8.2.2 Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC (f.ex. from Ansell or KCL). Use for short times chemical resistant latex or nitril gloves with code EN 374-3 level 1.

8.2.3 Eye protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

8.2.4 Skin protection

Recommended to avoid clothing damage, and to avoid contamination with these hazards.

8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

1 mL SILYL 2110

Appearance: liquid
Flash point:

Colour: colourless
15 °C

Odor: like pyridine

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

Substances are very volatile and form flammable vapour-air mixtures. ---

SECTION 10: Stability and reactivity

10.1 Reactivity

Strong CORROSIVE, . Reacts with water (sometimes violent) and diverse organic compounds. no further data available.

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

Not necessary. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

1 mL SILYL 2110

Chemical:	<i>pyridine</i>	CAS No.:	110-86-1
TSCA Inventory:	listed	California Proposition 65 List:	listed cancer
Exposure Routes:	inhalation, skin absorption, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, central nervous system, liver, kidneys, gastrointestinal tract,		
Symptoms:	irritation eyes; headache, anxiety, dizziness, insomnia; nausea, anorexia; dermatitis; liver, kidney		
Japan CSCL/PRTR:	PRTR: ≥1,0% class I		
Japan ISHL:	listed ≥1,0%/≥0,1%,		

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Korea Exist.Chem.Inventory: KE-29929
 LD50_{orl rat}: 800-1600 mg/kg
 LC_{50ihl rat}: [4h] 4900 ppm
 LC_{50loworl gpg}: 4000 mg/kg
 LC_{50loworl hmn}: 500 mg/kg
 LC50_{ihl rat}: 28500_{1h} mg/m³
 LD50_{drmm rbt}: 1000-2000 mg/kg
 Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.
 TRGS 905 (DE): [DFG] carc. 3B

Chemical: *trimethylchlorosilane (TMCS), chlorotrimethylsilane* CAS No.: 75-77-4
 TSCA Inventory: listed
 Target Organs:
 Korea Exist.Chem.Inventory: KE-05939
 LD50_{orl rat}: 250-6630 mg/kg
 LC50_{ihl rat}: [1h] 4257 ppm
 LD50_{drmm rbt}: 1780-2780 mg/kg

Carcinogenic Effects: Suspected of causing cancer.
 EU carcinogen: carc. 2

Chemical: *hexamethyldisilazane (HMDS)* CAS No.: 999-97-3
 TSCA Inventory: listed
 LD50_{orl rat}: 850 mg/kg
 LC50_{ihl rat}: 8.7_{4h} mg/L
 LD50_{drmm rbt}: 550 mg/kg
 Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small quantities.

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

1 mL SILYL 2110

Chemical: *pyridine* CAS No.: 110-86-1
 PNEC(fresh water): 300 µg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: [EC50 4h] 560-1000 mg/L
 EC50_{daphnia/48h}: 320 mg/L
 IC50_{scenedesmus quadricauda/72h}: IC50/7d: 120 mg/L
 EC10_{pseudomonas putita/16h}: [EC50 72h] 320 mg/L mg/L
 Water hazard class (DE): 2 WGK No.: 0179
 Dispersion coefficient_(octanol-water): 0.64
 Storage class (VCI): 3

Chemical: *trimethylchlorosilane (TMCS), chlorotrimethylsilane* CAS No.: 75-77-4
 Avoid contact of substance/mixture to environment.
 PNEC(fresh water): 250 µg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: [LD50 24h] 949 mg/L
 EC50_{daphnia/48h}: 124 mg/L
 EC10_{pseudomonas putita/16h}: [72h] 555-1053 mg/L
 Water hazard class (DE): 1 WGK No.: 0557
 Dispersion coefficient_(octanol-water): 1.19
 Storage class (VCI): 3

Chemical: *hexamethyldisilazane (HMDS)* CAS No.: 999-97-3
 Avoid contact of substance/mixture to environment.
 PNEC(fresh water): - mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: [EC50 24h] 949 mg/L
 EC50_{daphnia/48h}: 80-124 mg/L
 IC50_{scenedesmus quadricauda/72h}: [4d] 625-1053 mg/L
 Water hazard class (DE): 1 WGK No.: VwVwS
 Storage class (VCI): 3

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- 12.2 Persistence and degradability**
not necessary
- 12.3 Bioaccumulative potential**
not necessary
- 12.4 Mobility in soil**
not necessary
- 12.5 Results of PBT and vPvB assessment**
no data available
- 12.6 Other adverse effects**
no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according the transport regulations because

for amounts until 5 pc. à 20x 1 mL per fibre box
De Minimis (excepted quantities: $\leq 1 \text{ mL} / \sum \leq 100 \text{ mL}$) = ADR 3.5.1.4
De Minimis (excepted quantities: $\leq 1 \text{ mL} / \sum \leq 100 \text{ mL}$) = IATA DRG 2.6.10

- 14.5 Environmental hazards**
none, contains only small quantities of hazardous substances
- 14.6 Special precautions for user**
not necessary
- 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**
 German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
 MN Leaflet/User manual, also see www.mn-net.com
 Look for your country-specific regulations.
- 15.2 Chemical safety assessment**
not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

- 16.1.1 List of relevant H phrases**
- | | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |

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H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.

16.1.2 List of relevant P phrases

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P260sh Do not breathe dust/vapours.
P261sh Avoid breathing dust/vapours.
P264W Wash with water thoroughly after handling.
P280sh Wear protective gloves/eye protection.
P301+312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+352 IF ON SKIN: Wash with plenty of water.
P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P330 Rinse mouth.

16.2 Training advice

Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.

16.3 Recommended restriction on use

Only for professional user.
Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!
Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!
An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.
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16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
TRGS 900, German engineering rules governing limits in air at work, updated 03/2019
SUVA .CH, Limits in air at work 2009, revised on 01.2009
KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU