SAFETY DATA SHEET

CONPROTECT RF 100

(liquid)

Anti-corrosion inhibitor for steel reinforced concrete

Date prepared: 2024 Revision date:

Version: 1

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name	ConProtect RF100
Pure substance/mixture	Mixture

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

Relevant identified uses	*For industrial use. Corrosion inhibitor*
Uses advised against	*Not determined.*

1.3. Details of the Supplier of the Safety Data Sheet

Name of the manufacturer	*SL Protection OÜ*
Address	*Vana-Narva mnt 30, Maardu, 74114 Harju maakond, Estonia*
E-mail	*info@slprotection.eu*
Phone/fax	*(+372) 55666174*

1.4. Emergency telephone number

Emergency telephone number *Estonian National Poisons Information Centre: 16662 (+372 794 3794 from abroad) / Emergency telephone number: 112*

Emergency telephone - §45 - (EC)1272/2008

Europe	**112**
Estonia	16662 (24/7)
Finland	0800 147 111 (call is free of charge) +358 9 471 977
Austria	+43 (0)1 406 43 43
Bulgaria	+359 2 9154 233 (24/7)
Croatia	+385 1 2348 342 (24/7)
Czech Republic	+420 224 919 293 +420 224 915 402
Denmark	+45 8212 12 12
France	+33 (0)1 45 42 59 59 (24/7)
Greece	+30 2107793777 (24/7)
Iceland	543 2222 (24/7)
Ireland	+353 1 809 21 66 (8am-10pm; 7 days a week)
Italy	Numero telefonico del centro antiveleni: 0039 02-66101029
Latvia	+371 67042473
Lithuania	+370 (85) 2362052

Netherlands	Nationaal Vergiftigingen Informatie Centrum (NVIC): +31 (0)88 755 8000 Uitsluitend bestemd om professionele hulpverleners te informeren bij acute vergiftigingen
Norway	+47 22 59 13 00
Portugal	+351 800 250 250 (24/7)
Romania	+40213183606
Slovakia	+421 2 5477 4166
Slovenia	112
Spain	+34 91 562 04 20(24h/365 días), Únicamente para respuesta sanitaria en caso de urgencia
Sweden	+46 10 456 6700

2. HAZARDS IDENTIFICATION

Classification according to GHS

Physical Hazards	*Flammable Liquids*	*Category 3*
Health Hazards	*Skin Corrosion/Irritation*	*Category 2*
	Serious Eye Damage/Eye Irritation	*Category 2A*

See Sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

Label element

Signal word *Warning*

Hazard statements *Flammable liquid and vapor.*
Causes skin irritation.
Causes serious eye irritation.
Harmful to aquatic life.

Precautionary statements

Prevention: *Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wash face, hands and any exposed skin thoroughly after handling. Avoid release to the environment. Wear protective gloves/ protective clothing/ eye protection/ face protection.*

Response: *IF ON SKIN (or hair): Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention. Specific treatment (see on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation*

Storage: *Store in a well-ventilated place. Keep cool.*

Disposal: *Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.*

Other hazards: *No data available.*

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity:	*Silicon compounds*	*2-diethylaminoethanol*
CAS number:		*100-37-8*
Content in percent:	*>80%*	*<3%*

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The exact concentration has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice *Immediately remove contaminated clothing.*

Inhalation *Following inhalation of aerosols or mist: Possible discomfort: irritation of mucous lining (nose, throat, eyes) cough, sneezing, flow of tears. Move to fresh air. Get medical attention if any discomfort continues.*

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Eye contact *Keeping eyelid open, immediately rinse thoroughly for at least 5 minutes using plenty of water or, if necessary, eye rinsing solution. Consult an eye doctor (ophthalmologist).*

Skin contact *Wash off immediately with soap and plenty of water. If skin irritation persists, get medical attention.*

Ingestion *Rince the mouth with water. Drink plenty of water in small sips. Get immediate medical attention.*

Self-protection of the first aider *No data available*

Most important symptoms and effects, both acute and delayed

Symptoms *None known.*

Hazards: *None known.*

Indication of any immediate medical attention and special treatment needed

Note to doctors *If required, therapy of irritative effect. If substance has been swallowed: Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.*

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media *Water spray, fog, CO2, dry chemical, or alcohol resistant foam.*

Unsuitable extinguishing media *High volume water jet.*

Special hazards arising from the substance or mixture *Standard procedure for chemical fires.*

Special fire fighting procedures: *Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.*

Special protective equipment and precautions for fire-fighters

In case of fire: wear a self-contained respiratory apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Ensure adequate ventilation.

Accidental release measures: *No data available.*

Methods and material for containment and cleaning up: *Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Fill into marked, sealable containers. To be disposed of in compliance with existing regulations.*

Environmental precautions: *Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.*

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures: *No data available.*

Local/Total ventilation: *Provide adequate ventilation.*

Safe handling advice: *Use in the open air or with adequate ventilation.*

Contact avoidance measures: *No data available*

Storage

Safe storage conditions: *Take precautionary measures against static charges, keep away from sources of ignition. When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.*

Safe packaging materials: *No data available*

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits *Observe national threshold limit values.*

Biological Limit Values *No biological exposure limits noted for the ingredient(s).*

Appropriate Engineering Controls *Provide adequate ventilation.*

Individual protection measures, such as personal protective equipment

General information: *No data available.*

Eye/face protection: *Safety glasses*

Hand Protection: *Material: Butyl rubber.*
Break-through time: >= 480 min
Glove thickness: 0.5 mm
Material: Fluorinated rubber (Viton)
Break-through time: >= 480 min
Glove thickness: 0.4 mm
Additional Information: Selection of protective gloves to meet the requirements of specific workplaces., The suitability for a specific workplace should be discussed with the producers of the protective gloves., The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the breakthrough time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

Other: *Suitable protective clothing*

Respiratory Protection: *In case of dusts/vapours/aerosols being formed or if the limit values like TLV are exceeded: use respiratory equipment with suitable filter (filter type ABEK) or wear a self-contained respiratory apparatus Use only respiratory protection equipment with CE-symbol including four digit test number. The filter class for*

the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Note time limit for wearing respiratory protective equipment.

Hygiene measures: *When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Immediately remove contaminated clothing. Wash contaminated clothing before re-use.*

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	*Liquid*
Form	*Liquid*
Colour	*Yellow- orange*
Odour	*Characteristic*
Odour threshold	*N/A*
Freezing point:	*< -65 °C*
Boiling Point:	*Approx. 186 °C*
	1,013 hPa
	Method: DIN 51751
Flammability:	*Not flammable*

Upper/lower limit on flammability or explosive limits

Explosive limit - upper:	*8.47 %(V) Method: DIN51649*
Explosive limit - lower:	*0.39 %(V) Method: DIN 51649*
Flash Point:	*> 40 °C Method: DIN EN ISO 2719*
Auto-ignition temperature:	*250 °C Method: DIN 51794*
Decomposition Temperature:	*No data available.*
pH:	*11 Method: DIN 38404-C5 50% 20 °C*
Viscosity	
Dynamic viscosity:	*No data available*
Kinematic viscosity:	*0.9 mm2/s @45.9 °C, Method: QSAR*
Flow Time:	*No data available.*

Solubility(ies)

Solubility in Water:	*Not miscible decomposition by hydrolysis*
Solubility (other):	*No data available.*

Partition coefficient (n-octanol/water): *No data available*

Vapor pressure:	*0.68 hPa @25 °C* *Tested substance: Main component(s)*
Relative density:	*No data available*
Density:	*0.882 g/cm³ @20 °C Method: DIN 51757*
Bulk density:	*No data available.*

Relative vapor density: *No data available.*

Other information

Peroxides: *Not applicable*

10. STABILITY AND REACTIVITY

Reactivity	*No dangerous reaction known under conditions of normal use.*
Chemical stability	*Stable under the recommended storage and handling conditions.*
Explosion data	
Possibility of hazardous reactions	*None under normal processing.*
Conditions to avoid	*Keep away from heat and sources of ignition. Keep away from moisture. In the presence of oxygen and heat, the ethanol forming during the reaction may produce acetaldehyde. Material may form acetaldehyde when heated with inorganic pigments in the presence of air.*
Incompatible materials	*Water.*
Hazardous decomposition products	*Ethanol in case of hydrolysis. Alcohol formed by hydrolysis lowers the flash point of the product.*

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	*Information on effects are given below.*
Eye contact	*Information on effects are given below.*
Skin contact	*Information on effects are given below.*
Ingestion	*Information on effects are given below.*

Acute toxicity (list all possible routes of exposure)

Oral

Product:	*ATEmix, > 5,000 mg/kg*
Components:	
Silicon compound	*LD 50, Rat, Female, Male, > 5,000 mg/kg, OECD 401*
2-diethylaminoethanol	*LD 50, Rat, Female, Male, 1,320 mg/kg, analogy OECD TG 401*

Dermal

Product:	*ATEmix, > 5,000 mg/kg*
Components:	
Silicon compound	*Not toxic after single exposure, No classification*
2-diethylaminoethanol	*LD 50, Guinea Pig, 885 mg/kg, analogous OECD method*

Inhalation

Product:	*ATEmix, > 40 mg/l, Vapour*

Components:

Silicon compound	*LC 50, Rat, Female, Male, 4 h, 5.88 mg/l, Dust and mist, OECD 403* *Vapour, Not toxic after single exposure, Not applicable*
2-diethylaminoethanol	*LC 50, Rat, Female, Male, 4 h, Approximate, 4.6 mg/l, Vapour* *Dust and mist, Not toxic after single exposure, Not applicable*

Repeated dose toxicity

Product:	*No data available*
Components:	
Silicon compound	*NOAEL Rat, Female, Male, Oral, 28 d, > 1,000 mg/kg*
2-diethylaminoethanol	*No data available*

Skin Corrosion/Irritation

Product:	*Irritating.*
Components:	
Silicon compound	*Irritating., OECD 404, Rabbit*
2-diethylaminoethanol	*Corrosive., OECD 404, Rabbit, <= 1 h*

Serious Eye Damage/Eye Irritation

Product:	*Irritating*
Components:	
Silicon compound	*Not irritating, OECD 405, Rabbit*
2-diethylaminoethanol	*Risk of serious damage to eyes., OECD 405, Rabbit*

Respiratory or Skin Sensitization

Product:	*No data available*
Components:	
Silicon compound	*Maximization Test, OECD 406, Guinea Pig, Not a skin sensitizer.*
2-diethylaminoethanol	*Maximization Test, OECD 406, Guinea Pig, Not a skin sensitizer.*

Carcinogenicity

Product:	*No data available*
Components:	
Silicon compound	*No evidence that cancer may be caused.*
2-diethylaminoethanol	*No data available.*

Germ Cell Mutagenicity

In vitro

Product:	*No data available*
Components:	
Silicon compound	*Ames test, OECD 471: , negative* *Chromosomal aberration, OECD 473: negative* *Chromosomal aberration, OECD 476: negative*
2-diethylaminoethanol	*gene mutation test, OECD 471: negative* *gene mutation test, OECD 476: negative*

In vivo

Product:	*No data available*
Components:	
Silicon compound	*Chromosomal aberration, OECD 474, Oral, Mouse, Female, Male, negative*
2-diethylaminoethanol	*Micronucleus test, OECD 474, Oral, Mouse, Female, Male, negative*

Reproductive toxicity

Product:	*No data available*
Components:	
Silicon compound	*Animal testing did not show any effects on fertility.*
2-diethylaminoethanol	*No negative effects.*

Specific Target Organ Toxicity - Single Exposure

Product:	*No data available*.
Components:	

Silicon compound	*No data available*.
2-diethylaminoethanol	*No data available*.

Specific Target Organ Toxicity - Repeated Exposure

Product:	*No data available.*
Components:	
Silicon compound	*No data available.*
2-diethylaminoethanol	*No data available.*

Aspiration Hazard

Product:	*No evidence of aspiration toxicity*
Components:	
Silicon compound	*Not classified*
2-diethylaminoethanol	*Not classified*

Information on health hazards

Other hazards

Product:	*No toxicological tests are available on the product*.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	*No data available*
Components:	
Silicon compound	*LC 50, Oncorhynchus mykiss, 96 h, 85 mg/l OECD 203*
2-diethylaminoethanol	*LC 50, Leuciscus idus, 96 h, 147 mg/l DIN 38412 section 15*

Aquatic Invertebrates

Product:	*No data available*
Components:	
Silicon compound	*EC 50, Daphnia magna, 48 h, > 49.1 mg/l OECD 202*
2-diethylaminoethanol	*EC 50, Daphnia magna, 48 h, 165 mg/l OECD 202*

Toxicity to Aquatic Plants

Product:	*No data available*
Components:	
Silicon compound	*EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): > 100 mg/l (OECD 201)*
2-diethylaminoethanol	*EC 50 (Desmodesmus subspicatus (Scenedesmus subspicatus), 72 h): 62.3 mg/l (DIN 38412, T.9) growth rate*

Toxicity to microorganisms

Product: *No data available*

Components:

Silicon compound	*NOEC, local activated sludge, 3 h, > 1,000 mg/l, OECD 209*
2-diethylaminoethanol	*EC 20, local activated sludge, 30 min, > 1,000 mg/l, OECD 209*

Toxicity to terrestrial organisms

Product: *EC 50 (Trifolium ornithopadioides, 17 d): > 100 mg/kg (OECD 208)*
EC 50 (Lepidium sativum (cress), 17 d): > 100 mg/kg (OECD 208)
EC 50 (Triticum aestivm (wheat), 17 d): > 100 mg/kg (OECD 208)

Components:

Isobutyltriethoxysilane *EC 50 (Trifolium ornithopadioides, 17 d): > 100 mg/kg (OECD 208)*
EC 50 (Lepidium sativum (cress), 17 d): > 100 mg/kg (OECD 208)
EC 50 (Triticum aestivm (wheat), 17 d): > 100 mg/kg (OECD 208)

Chronic hazards to the aquatic environment:

Fish

Product: *No data available.*

Components:

Isobutyltriethoxysilane *No data available.*

Aquatic Invertebrates

Product: *No data available.*

Components:

Isobutyltriethoxysilane *No data available.*

Toxicity to Aquatic Plants

Product: *NOEC (Desmodesmus subspicatus (green algae), 96 h): >= 100 mg/l (OECD 201)*

Components:

Isobutyltriethoxysilane *NOEC (Desmodesmus subspicatus (green algae), 96 h): >= 100 mg/l (OECD 201)*

Toxicity to microorganisms

Product: *NOEC, local activated sludge, 3 h, > 1,000 mg/l, OECD 209*

Components:

Isobutyltriethoxysilane *NOEC, local activated sludge, 3 h, > 1,000 mg/l, OECD 209*

Chronic hazards to the aquatic environment:

Fish

Product: *No data available.*

Components:

Silicon compound *No data available.*

2-diethylaminoethanol *No data available.*

Aquatic Invertebrates

Product: *No data available.*

Components:

Silicon compound *No data available.*

2-diethylaminoethanol *No data available.*

Toxicity to Aquatic Plants

Product: *No data available.*

Components:

Silicon compound *No data available.*

2-diethylaminoethanol *No data available.*

Toxicity to microorganisms

Product: *No data available.*

Components:

Silicon compound *NOEC, local activated sludge, 3 h, > 1,000 mg/l, OECD 209*

2-diethylaminoethanol *EC 20, local activated sludge, 30 min, > 1,000 mg/l, OECD 209*

Persistence and Degradability

Biodegradation

Product: *No data available.*

Components:

Silicon compound *75 %, 28 d, OECD 301 D, The product is easily biodegradable.*

2-diethylaminoethanol *90 - 100 %, 22 d, OECD 301 A, The product is easily biodegradable.*

BOD/COD Ratio

Product: *No data available.*

Components:

Silicon compound *No data available.*

2-diethylaminoethanol *No data available.*

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: *No data available.*

Components:

Silicon compound *Not bio accumulative.*

2-diethylaminoethanol *The product is not bioaccumulating.*

Partition Coefficient n-octanol / water (log Kow)

Product: *No data available.*

Components:

Silicon compound	*No data available.*
2-diethylaminoethanol	*0.46, calculated.*

Mobility in soil:

Product *No data available.*

Components:

Silicon compound	*Adsorption on the floor: low.*
2-diethylaminoethanol	*Not expected to adsorb on soil.*

Other adverse effects:

Other hazards

Product: *Harmful to aquatic life.*

Additional Information: *No ecotoxicological data is available for this product.*

13. DISPOSAL CONSIDERATIONS

Disposal methods: *With respect to local regulations, e.g. dispose of to suitable waste incineration plant.*

Contaminated Packaging: *Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. If there is product residue in the emptied container, follow directions for handling on the container's label. Incorrect disposal or reuse of this container is illegal and can be dangerous. Other countries: observe the national regulations.*

14. TRANSPORT INFORMATION

ADG

UN number or ID number:	*UN 1993*
Proper shipping name:	*FLAMMABLE LIQUID, N.O.S. (2-Diethylaminoethanol)*
Class:	*3*
Packing group:	*III*
Labels:	*3*
Hazchem Code:	*•3Y*

International Regulations

IATA-DGR

UN/ID No.:	*UN 1993*
Proper shipping name:	*Flammable liquid, n.o.s. (2-Diethylaminoethanol)*
Class:	*3*
Packing group:	*III*
Labels:	*3*
Packing instruction (cargo aircraft):	*366*
Packing instruction (passenger aircraft):	*355*

Remarks: *Maximum Net Quantity per Package 220 L*

IMDG-Code

UN number or ID number:	*UN 1993*
Proper shipping name:	*FLAMMABLE LIQUID, N.O.S. (2-Diethylaminoethanol)*
Class:	*3*
Packing group:	*III*
Labels:	*3*
EmS Code:	*F-E, S-E*
Marine pollutant:	*No*

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

International regulations

Montreal protocol	*Not applicable*
Stockholm convention	*Not applicable*
Rotterdam convention	*Not applicable*
Kyoto protocol	*Not applicable*

16. OTHER INFORMATION

Abbreviations and acronyms:

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice;

HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health

Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further Information: *No data available.*

Revision date 2024

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Contact person / technical support contact:

SL Protection OÜ

Phone: (+372) 55666174

E-mail: info@slprotection.eu

Limitation of liability

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