Safety Data Sheet

Anti-VRL

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Revision Date: 24.10.2022 Supersedes Date: 15.12.2021

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

1.1. Product identifier

Product name	Anti-VRL
Product description	Coating solution for appropriate surfaces
Other means of identification	UFI: PGJ5-NP12-4D06-PT49

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

Identified uses	Surface protection for industrial usage
Uses advised against	No specific uses advised against are identified

1.3. Details of the supplier of the safety data sheet

Supplier	NanoEnzo Phillipsstraat 16 3833 LC Leusden, The netherlands +31 085 007 99 00 Info@nanoenzo.nl

1.4. Emergency telephone number

Emergency telephone	Does the ILT need to take immediate action in the event of an incident or accident? If so, report it by telephone via +31 88 - 489 00 00. This telephone number can be reached day and night.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 2 – H225
Health hazards	Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Eye Dam. 1 – H318
Environmental hazards	Not classified

2.2. Label elements

Pictogram

Signal word	Danger
Hazard statements	H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage.

Precautionary statements	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 – Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P301 + P330 + P331 – IF SWALLOWED: Rinse mouth. 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. P363 – Wash contaminated clothing before reuse. P501 – Dispose of contents/container in accordance with national regulations.
Contains	Ethanol, 3-aminopropyltriethoxysilane, Benzododecinium chloride

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.
Endocrine-disrupting properties: The product fails to meet the criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance Name	Identification Numbers	Classification	Concentration (wt%)
Ethanol	CAS Number: 64-17-5 EC Number: 200-578-6	Flam. Liq. 2–H225 Eye Irrit. 2–H319	>50-85
3-aminopropyltriethoxysilane	CAS Number: 919-30-2 EC Number: 213-048-4	Acute Tox.4-H302 Skin Corr.1B-H314 Eye Dam.1-H318 Skin Sens.1-H317	1≤ - <3
Benzododecinium chloride	CAS Number: 63449-41-2 EC Number: 205-351-5	Acute Tox.4-H302 Acute Tox.4-H312 Skin Corr.1B -H314 Eye Dam. -H318 Aquatic Acute1-H400	1≤ - <2

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General Information	Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Ingestion	Rinse mouth thoroughly with water. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place.
Skin contact	Wash skin thoroughly with soap and water or use an approved skin cleanser. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Get medical attention if irritation persists after washing.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

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

General information	See Section 11 for additional information of health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation. Aspiration hazard if swallowed. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Skin contact	May cause an allergic skin reaction.
Eye contact	May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is flammable. Extinguish with foam, carbon dioxide, dry powder or **media** water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Containers can burst violently or explode when heated, due to excessive pressure build-up.
Hazardous combustion	Thermal decomposition or combustion products may include the following products substances: Harmful gases or vapors.

5.3. Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small spillages: Collect spillage. Large spillage: Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Read and follow manufacturer's recommendations. Avoid contact with skin. Take precautionary measures against static discharge.
Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store away from incompatible materials (see Section 10). Store locked up. Keep only in the original container. Keep container tightly closed, in a cool, well-ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent. Use containers made of the following materials: Teflon Polyethylene. Carbon steel. PP; Polypropylene. Unsuitable container materials: PS; Polystyrene. Rubber. EPDM; Ethylene Propylene Diene Monomer.
Storage class	Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses of this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection Chemical resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Yellowish
Odour	Characteristic
Odour threshold	No information available.
pH	4.7-5.0
Melting point	-88°C
Initial boiling point and range	78°C @4 mmHg.
Flash point	18°C.
Evaporation rate	No information available.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits	No information available.
Vapor pressure	1 kPa
Vapor density	>1.54
Relative density	No information available.
Density	0.81 g/cm^3.
Partition coefficient n-octanol/water 20 ºC	Not applicable.
Solubility(ies)	Miscible with water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Oxidizing properties	Not available.
Particle characteristics	Not applicable.

9.2. Other information

Information with regard to physical hazard classes

Explosives	Not applicable.
Oxidizing properties	Not applicable.
Self-heating substances and mixtures	Not applicable.
Corrosion to metals	Not applicable.

Other safety characteristics

SAPT-temperature	Not applicable.
Surface tension	Not applicable.
Refraction index:	Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	See the other subsections of this section for further details

10.2. Chemical Stability

Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No potentially hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid Avoid heat. Containers can burst violently or explode when heated, due to excessive pressure build-up.

10.5. Incompatible materials

Materials to avoid Oxidizing materials. Acids-oxidising. Alkalis.

10.6. Hazardous decomposition products

Hazardous decomposition products Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases and vapors. Organic amine vapors.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Substance Name	Exposure Route	Dose	Species
Ethanol	Oral	LD50 10.470 mg/kg	Rat
	Dermal	Not available	-
	Inhalation (4h) Vapor	LC50 124,7 mg/l	Rat
3-aminopropyltriethoxysilane	Oral	LD50 150 mg/kg	Rat
	Dermal	LD50 1420 mg/kg	Rat
	Inhalation (4h) Vapor	LD50 16 mg/kg	Rat
Benzododecinium chloride	Oral	LD50 1,780 mg/kg	Rat
	Dermal	LD50 4,290 mg/kg	Rabbit
	Inhalation (6h) Vapor	LC50 - > 5 ppm	Rat

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity – in vitro Based on available data the classification criteria are not met.

Carciogenicity

Carciogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	Contains a substance / a group of substances which may cause cancer. IARC Group 1 Carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.

Specific target organ toxicity – single exposure

STOT – single exposure	Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity – repeated exposure

STOT – repeated exposure	Not classified as a specific target organ toxicant after a single exposure.

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties	The product does not contain a substance that is considered to have endocrine disrupting properties.

SECTION 12: Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity

Substance Name	Aquatic Toxicity	Dose
Distillates (petroleum), hydrotreated light	Acute fish toxicity	LC50 8.140 mg/l / 48 h
	Acute algae toxicity	EC50 5.000 mg/l / 7 d
	Acute invertebrates toxicity	EC50 9.268-14.221 mg/l / 48 h
	Acute bacteria toxicity	EC5 6.500 mg/l / 16 h
3-aminopropyltriethoxysilane	Acute fish toxicity	LC50 > 934 mg/l - 96 h
	Acute algae toxicity	ErC50 > 1,000 mg/l - 72 h
	Acute invertebrates toxicity	EC50 331 mg/l - 48 h

	Acute bacteria toxicity	EC50 43 mg/l - 5.75 h
Benzododecinium chloride	Acute fish toxicity	LC50 0.31 mg/L - 96 h
	Acute algae toxicity	No data available
	Acute invertebrates toxicity	No data available
	Acute bacteria toxicity	No data available

12.2. Persistance and degradability

Persistance and degradability The product is biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility The product is water-soluble and may spread in water systems. Volatile liquid. The product contains organic solvents which will evaporate easily from all surfaces.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Endocrine disrupting properties

Endocrine disrupting properties The product does not contain a substance that is considered to have endocrine disrupting properties.

12.7. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal consideration

13.1. Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers on liners may retain some product residues and hence be potentially hazardous.

Disposal methods Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

Land Transport (ADR/RID)

14.1. UN Number

UN 1139.

14.2. UN proper shipping name

COATING SOLUTION.

14.3. Transport hazard class(es)

Class 3

14.4. Packing group

II

14.5. Environmental hazards

Environmentally hazardous substance/ marine product No

14.6. Special precautions for user

Tunnel restriction code D/E

Air Transport (IATA)

14.1. UN Number

UN 1139.

14.2. UN proper shipping name

COATING SOLUTION.

14.3. Transport hazard class(es)

Class 3

14.4. Packing group

II

14.5. Environmental hazards

Environmentally hazardous substance/marine product	NO

14.6. Special precautions for user

No.

Sea Transport (IMDG)

14.1. UN Number

UN 1139.

14.2. UN proper shipping name

COATING SOLUTION.

14.3. Transport hazard class(es)

Class 3

14.4. Packing group

II

14.5. Environmental hazards

Environmentally hazardous substance/marine product	NO

14.6. Special precautions for user

EmS	F-E-S-D

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU legislation	Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration,

	Evaluation, Authorization and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008, CLP
Authorizations (Title VII Regulation 1907/2006)	No specific authorizations are known for this product.
Restrictions (Title VII Regulation 1907/2006)	No specific restrictions on use are known for this product.
Seveso Directive – Control of major accident hazards	P5c Lower-tier 5000 tonnes Upper tier 50000 tonnes.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in this safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Code for Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC50: Lethal Concentration to 50% of a test population. LD50: Lethal Dose to 50% of a test population (Median Lethal Dose). EC50: 50% of maximal Effective Concentration. IC50: Half maximal Inhibitory Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Verp Persistent and Very Bioaccumulative.
Chemical abbreviations and acronyms	Flam. Liq. = Flammable liquid Skin Sens. = Skin sensitization Skin Irrit. = Skin irritation Eye Dam. = Eye damage
General information	Only trained personnel should use this material.

According to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Revision Date: 24.10.2022 Supersedes Date: 15.12.2021

Key literature references and sources for data	Source: European Chemical Agency, http://echa.europa.eu/
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material.
Revision comments	Revised according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issued by	R&D Department / Artekya Teknoloji Limited Şirketi
Revision date	24.10.2022
Revision	0.2
Supersedes date	15.12.2021
Hazard statements in full	H315 Causes skin irritation. H225 Highly flammable liquid and vapor. H317 May cause an allergic skin reaction. H318 Causes serious eye damage

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.