

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
Name : Vinylester adhesive with increased strength
Trade name : VE-S

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : The product is intended for professional use
Repair and maintenance of ships and boats

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

NOVOL Sp. z o.o.

Żabikowska 7/9

62-052 KOMORNIKI

Poland

T 0048618109800 - F 0048618109809

www.novol.com

E-mail address of competent person responsible for the SDS : dokumentacja@novol.com

1.4. Emergency telephone number

Emergency number : 112

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Flammable liquids, Category 3	H226
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Reproductive toxicity, Category 2	H361d
Specific target organ toxicity – Repeated exposure, Category 1	H372

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS02

GHS07

GHS08

Signal word (CLP) :

Danger

Contains :

styrene

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H361d - Suspected of damaging the unborn child.

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Precautionary statements (CLP) : H372 - Causes damage to organs (hearing organs) through prolonged or repeated exposure.
: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.
P260 - Do not breathe dust, vapours.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P312 - Call doctor if you feel unwell.

2.3. Other hazards

Other hazards which do not result in classification : Vapour could form explosive mixture with air. Vapours are heavier than air and spread above ground. Hazardous polymerization may occur if exposed to high temperature.

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
styrene substance with national workplace exposure limit(s) (GB) (Note D)	CAS-No.: 100-42-5 EC-No.: 202-851-5 EC Index-No.: 601-026-00-0 REACH-no: 01-2119457861-32	30 – 45	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d STOT RE 1, H372

Note D : Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : General information. Refer to section 11.
First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact : After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water and soap. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. If skin irritation continues, consult a doctor.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
First-aid measures after ingestion : If swallowed: rinse mouth. Do NOT induce vomiting. Call a physician immediately.

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

Symptoms/effects after inhalation : Vapours may cause drowsiness and dizziness.

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Symptoms/effects after skin contact : Prolonged or repeated contact may cause skin to become dry.
Symptoms/effects after eye contact : May cause eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry chemical, CO₂, alcohol-resistant foam or waterspray.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Carbon monoxide. Other toxic gases.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Remove ignition sources. Ensure that there is a suitable ventilation system. Avoid any direct or indirect contact with ingredients released. Avoid contact with skin and eyes. Use personal protective equipment as required. See Section 8.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. See Section 8.

6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter into surface water or drains. Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

6.3. Methods and material for containment and cleaning up

For containment : Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Mechanically recover the product.

6.4. Reference to other sections

Disposal considerations. See Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

styrene (100-42-5)	
United Kingdom - Occupational Exposure Limits	
Local name	Styrene
WEL TWA (OEL TWA) [1]	430 mg/m ³
WEL TWA (OEL TWA) [2]	100 ppm
WEL STEL (OEL STEL)	1080 mg/m ³
WEL STEL (OEL STEL) [ppm]	250 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

Monitoring methods	
Monitoring methods	EN 482. Workplace exposure - General requirements for the performance of procedures for the measurement of chemical agents.

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

styrene (100-42-5)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	100 mg/m ³
Acute - local effects, inhalation	100 mg/m ³
Long-term - systemic effects, inhalation	100 mg/m ³
Long-term - local effects, inhalation	100 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, inhalation	10 mg/m ³
Acute - local effects, inhalation	10 mg/m ³
Long-term - systemic effects, oral	7.7 µg/kg bodyweight/day
Long-term - systemic effects, inhalation	1 mg/m ³
Long-term - local effects, inhalation	1 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.04 mg/l
PNEC aqua (marine water)	0.04 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.418 mg/kg dwt
PNEC sediment (marine water)	0.418 mg/kg dwt

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styrene (100-42-5)	
PNEC (Soil)	
PNEC soil	0.146 mg/kg dwt

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Viton® II	6 (> 480 minutes)	0,7 mm		EN 374-3
Disposable gloves	Nitrile rubber (NBR)	2 (> 30 minutes)	0,4 mm		EN 374-3

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Respiratory protection			
Device	Filter type	Condition	Standard
Gas mask with filter type	Filter A1/B1		EN 14387

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: (Read the technical data sheet).
Odour	: characteristic. Sweet.
Odour threshold	: 0.43 mg/m ³ styrene
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: 146 °C
Flammability	: Not applicable
Explosive properties	: No data available.
Explosive limits	: Not available
Lower explosion limit	: 1.1 vol % styrene
Upper explosion limit	: 8 vol % styrene
Flash point	: 30 °C
Auto-ignition temperature	: 490 °C
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Viscosity, dynamic	: 16000 – 22000 mPa.s
Solubility	: Slightly soluble.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 7.3 hPa styrene
Vapour pressure at 50°C	: Not available
Density	: 1.05 – 1.15 g/cm ³
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Relative density of saturated gas/air mixture	: 3.6 styrene
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Can react violently with alkalis, as well as a lot of organic products such as alcohols and amines. Hazardous polymerization may occur if exposed to high temperature.

10.4. Conditions to avoid

Keep away from sources of ignition. Prevent build-up of electrostatic charges (e.g. by grounding). Protect from sunlight. Avoid high temperatures.

10.5. Incompatible materials

No contact with: strong acids, strong bases and strong oxidants.

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10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Carbon monoxide. Other toxic gases.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

styrene (100-42-5)	
LD50 oral rat	5000 mg/kg Source: ECHA
LD50 dermal rat	> 2000 mg/kg Source: ECHA
LC50 Inhalation - Rat (Vapours)	11.8 mg/l Source: ECHA

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

styrene (100-42-5)	
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Suspected of damaging the unborn child.
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Causes damage to organs (hearing organs) through prolonged or repeated exposure.

styrene (100-42-5)	
STOT-repeated exposure	Causes damage to organs (hearing organs) through prolonged or repeated exposure.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)
Not rapidly degradable

styrene (100-42-5)	
LC50 - Fish [1]	10 mg/l Source: ECHA
EC50 - Crustacea [1]	4.7 mg/l Source: ECHA
EC50 72h - Algae [1]	4.9 mg/l Source: ECHA

12.2. Persistence and degradability

No additional information available

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12.3. Bioaccumulative potential

styrene (100-42-5)

Partition coefficient n-octanol/water (Log Pow)	2.95 Source: HSDB,CHemIDplus
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available




SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Do not discharge into drains.
Product/Packaging disposal recommendations	: This material and its container must be disposed of as hazardous waste. Do not dispose of with domestic waste. After cleaning, recycle or dispose of at an authorised site.
Additional information	: Flammable vapours may accumulate in the container.
European List of Waste (LoW) code	: 08 04 09* - waste adhesives and sealants containing organic solvents or other dangerous substances 15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
14.1. UN number or ID number		
UN 1866	UN 1866	UN 1866
14.2. UN proper shipping name		
RESIN SOLUTION	RESIN SOLUTION	Resin solution
Transport document description		
UN 1866 RESIN SOLUTION, 3, III, (D/E)	UN 1866 RESIN SOLUTION, 3, III (30°C c.c.)	UN 1866 Resin solution, 3, III
14.3. Transport hazard class(es)		
3	3	3
		
14.4. Packing group		
III	III	III

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ADR	IMDG	IATA
14.5. Environmental hazards		
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available		

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 5I
Special packing provisions (ADR) : PP1
Mixed packing provisions (ADR) : MP19
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12

Tunnel restriction code (ADR) : D/E
EAC code : •3Y

Transport by sea

Special provisions (IMDG) : 223, 955
Limited quantities (IMDG) : 5 L
Special packing provisions (IMDG) : PP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : A

Air transport

No data available

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

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Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

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Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant

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Abbreviations and acronyms:	
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Data sources : ECHA (European Chemicals Agency).
Training advice : Handle in accordance with good industrial hygiene and safety procedures.

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Flam. Liq. 3	H226	On basis of test data
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Repr. 2	H361d	Calculation method
STOT RE 1	H372	Calculation method

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.