

Safety Data Sheet

according to WHS Regulations

Date of issue: 06.01.2025

Revision: 06.01.2025

1 Identification

- **Other means of identification**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25-SP, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- ProSciTech Pty Ltd
11 Carlton Street, Kirwan QLD 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Website: ems.proscitech.com
- Emgrid Australia Pty. Ltd.
P.O. Box 118
The Patch VIC 3792
Australia
Tel: 03 9752 1785
Fax: 03 9752 1784
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS02 flame

Flammable liquids – Category 2

H225 Highly flammable liquid and vapour.



GHS06 skull and crossbones

Acute toxicity - inhalation – Category 3

H331 Toxic if inhaled.

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GHS08 health hazard

Germ cell mutagenicity – Category 2

H341 Suspected of causing genetic defects.

Carcinogenicity – Category 1B

H350 May cause cancer.



GHS07

Acute toxicity - oral – Category 4

H302 Harmful if swallowed.

Skin corrosion/irritation – Category 2

H315 Causes skin irritation.

Eye damage/irritation – Category 2A

H319 Causes serious eye irritation.

Specific target organ toxicity (single exposure) – Category 3

H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

- **Hazard pictograms**



GHS02



GHS06



GHS08

- **Signal word** *Danger*

- **Hazard-determining components of labelling:**

ETHYLENE DICHLORIDE (99 %)

- **Hazard statements**

Highly flammable liquid and vapour.

Harmful if swallowed.

Toxic if inhaled.

Causes skin irritation.

Causes serious eye irritation.

Suspected of causing genetic defects.

May cause cancer.

May cause respiratory irritation.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting equipment.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

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3 Composition and Information on Ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**
107-06-2 ETHYLENE DICHLORIDE
- **Identification number(s)**
- **EC number: 203-458-1**
- **Index number: 602-012-00-7**

- **Dangerous components:**

63450-15-7	POLYVINYL FORMAL	≤2.5%
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- **SVHC**

107-06-2	ETHYLENE DICHLORIDE
63450-15-7	POLYVINYL FORMAL

4 First Aid Measures

- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
 - **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire Fighting Measures

- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

- **Appropriate engineering controls** No further data; see section 7.

- **Ingredients with limit values that require monitoring at the workplace:**

107-06-2 ETHYLENE DICHLORIDE

WES	Long-term value: 40 mg/m ³ , 10 ppm
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- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

9 Physical and Chemical Properties

- **General Information**

- **Appearance:**

- **Form:**

Liquid

- **Colour:**

According to product specification

- **Odour:**

Ether-like

- **Odour threshold:**

Not determined.

- **pH-value:**

Not determined.

- **Change in condition**

- **Melting point/freezing point:**

-35.5 °C

- **Initial boiling point and boiling range:**

83.5 °C

- **Flash point:**

13 °C

- **Flammability**

Highly flammable.

- **Auto-ignition temperature:**

413-440 °C

- **Decomposition temperature:**

Not determined.

- **Ignition temperature:**

Not determined.

- **Explosive properties:**

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- **Explosion limits:**

- **Lower:**

6.2 Vol %

- **Upper:**

15.9 Vol %

- **Vapour pressure at 20 °C:**

87 hPa

- **Density at 20 °C:**

1.24 g/cm³

- **Relative density**

Not determined.

- **Vapour density**

Not determined.

- **Evaporation rate**

Not determined.

- **Solubility in / Miscibility with**

- **water at 20 °C:**

8 g/l

- **Partition coefficient: n-octanol/water:**

Not determined.

- **Viscosity:**

- **Dynamic at 20 °C:**

0.8 mPas

- **Kinematic:**

Not determined.

- **VOC (EC)**

0.00 %

- **Solids content:**

0.0 %

- **Other information**

- **Particle characteristics**

Not applicable.

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· **Physical state** Fluid

10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

· Information on toxicological effects

- **Acute toxicity**
Harmful if swallowed.
Toxic if inhaled.

· **LD/LC50 values relevant for classification:**

107-06-2 ETHYLENE DICHLORIDE

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Suspected of causing genetic defects.
- **Carcinogenicity** May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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· **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADG, IMDG, IATA 	<p style="text-align: center;">UN1184</p>
<ul style="list-style-type: none"> · UN proper shipping name · ADG · IMDG · IATA 	<p style="text-align: center;">1184 ETHYLENE DICHLORIDE ETHYLENE DICHLORIDE, MARINE POLLUTANT ETHYLENE DICHLORIDE</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · ADG 	<div style="display: flex; align-items: center; gap: 10px;"> </div> <p style="text-align: center;">3 Flammable liquids. 3+6.1</p>
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; align-items: center; gap: 10px;"> </div> <p style="text-align: center;">3 Flammable liquids. 3/6.1</p>
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; align-items: center; gap: 10px;"> </div> <p style="text-align: center;">3 Flammable liquids. 3 (6.1)</p>
<ul style="list-style-type: none"> · Packing group · ADG, IMDG, IATA 	<p style="text-align: center;">II</p>

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· Environmental hazards:	
· Marine pollutant:	Yes (DOT) Symbol (fish and tree)
· Special precautions for user	Warning: Flammable liquids.
· Hazard identification number (Kemler code):	336
· EMS Number:	F-E, S-
· Segregation groups	(SGG10) Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Industrial Chemicals**

All ingredients are listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

S6

· **Australia: Priority Existing Chemicals**

None of the ingredients is listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02 GHS06 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**

ETHYLENE DICHLORIDE (99 %)

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· **Hazard statements**

Highly flammable liquid and vapour.

Harmful if swallowed.

Toxic if inhaled.

Causes skin irritation.

Causes serious eye irritation.

Suspected of causing genetic defects.

May cause cancer.

May cause respiratory irritation.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use explosion-proof electrical/ventilating/lighting equipment.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Seveso category** P5c FLAMMABLE LIQUIDS

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

107-06-2	ETHYLENE DICHLORIDE
63450-15-7	POLYVINYL FORMAL

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flammable liquids – Category 2: Flammable liquids – Category 2

Acute toxicity - oral – Category 4: Acute toxicity – Category 4

Acute toxicity - inhalation – Category 3: Acute toxicity – Category 3

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*Skin corrosion/irritation – Category 2: Skin corrosion/irritation – Category 2**Eye damage/irritation – Category 2A: Serious eye damage/eye irritation – Category 2A**Germ cell mutagenicity – Category 2: Germ cell mutagenicity – Category 2**Carcinogenicity – Category 1B: Carcinogenicity – Category 1B**Specific target organ toxicity (single exposure) – Category 3: Specific target organ toxicity (single exposure) – Category 3*

AU

Safety Data Sheet

according to HPR, Schedule 1

Printing date 01/06/2025

Reviewed on 01/06/2025

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25-SP, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
VWR, Part of Avantor
2360 Argentia Road
Mississauga, ON L5N 5Z7
1 800 932 5000
VWR, Part of Avantor
2360 Argentia Road
Mississauga, ON L5N 5Z7
1-800-932-5000
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS08 Health hazard

Carcinogenicity – Category 2

H351 Suspected of causing cancer.



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

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CA

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Specific Target Organ Toxicity - Single Exposure -
Category 3

H335 May cause respiratory irritation.

· **Label elements**· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** Danger· **Hazard-determining components of labeling:**

ETHYLENE DICHLORIDE

· **Hazard statements**

Highly flammable liquid and vapour.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof [electrical/ventilating/lighting] equipment.

Use non-sparking tools.

Take actions to prevent static discharges.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

3 Composition/Information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
107-06-2 ETHYLENE DICHLORIDE
- **Identification number(s)**
- **EC number: 203-458-1**
- **Index number: 602-012-00-7**

- **Dangerous components:**

63450-15-7	POLYVINYL FORMAL	0.1-1% w/w *
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* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

107-06-2 ETHYLENE DICHLORIDE

EL	STEL: 2 ppm
	TWA: 1 ppm
	IARC 2B

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EV TWA: 40 mg/m³, 10 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Color: According to product specification

· **Odor:** Ether-like

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -35.5 °C

Boiling point/Boiling range: 83.5 °C

· **Flash point:** 13 °C

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· Flammability:	Highly flammable.
· Auto igniting:	413-440 °C
· Decomposition temperature:	Not determined.
· Ignition temperature:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	6.2 Vol %
Upper:	15.9 Vol %
· Vapor pressure at 20 °C:	87 hPa
· Density at 20 °C:	1.24 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water at 20 °C:	8 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	0.8 mPas
Kinematic:	Not determined.
Solids content:	0.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
107-06-2 ETHYLENE DICHLORIDE		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.

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· **Sensitization:** No sensitizing effects known.· **Additional toxicological information:**· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

2B

· **NTP (National Toxicology Program)**

R

12 Ecological information

· **Toxicity**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:***Water hazard class 3 (Assessment by list): extremely hazardous for water**Do not allow product to reach ground water, water course or sewage system, even in small quantities.**Danger to drinking water if even extremely small quantities leak into the ground.*· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**· **Recommendation:***Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*· **Uncleaned packagings:**· **Recommendation:** Disposal must be made according to official regulations.· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**· **DOT/TDG, ADR, IMDG, IATA**

UNI184

· **UN proper shipping name**· **DOT/TDG**

Ethylene dichloride

· **ADR**

1184 Ethylene dichloride

· **IMDG**

ETHYLENE DICHLORIDE, MARINE POLLUTANT

· **IATA**

ETHYLENE DICHLORIDE

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· **Transport hazard class(es)**· **DOT/TDG (Transport dangerous goods):**

· **Class** 3 Flammable liquids
 · **Label** 3, 6.1

· **ADR**

· **Class** 3 Flammable liquids
 · **Label** 3+6.1

· **IMDG**

· **Class** 3 Flammable liquids
 · **Label** 3/6.1

· **IATA**

· **Class** 3 Flammable liquids
 · **Label** 3 (6.1)

· **Packing group**· **DOT/TDG, ADR, IMDG, IATA** II· **Environmental hazards:**

· **Marine pollutant:** Yes (DOT)
 Symbol (fish and tree)

· **Special precautions for user** Warning: Flammable liquids· **Hazard identification number (Kemler code):** 336· **EMS Number:** F-E, S-· **Segregation groups** (SGG10) Liquid halogenated hydrocarbons· **Stowage Category** B· **Stowage Code** SW2 Clear of living quarters.· **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **DOT/TDG**· **Quantity limitations**

On passenger aircraft/rail: 1 L
 On cargo aircraft only: 60 L

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· Hazardous substance:	100 lbs, 45.4 kg
· Remarks:	Special marking with the symbol (fish and tree).
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

107-06-2 ETHYLENE DICHLORIDE

- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Canadian substance listings:**

- **Canadian Non-Domestic Substances List (NDSL)**

None of the ingredients is listed.

- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02 GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

ETHYLENE DICHLORIDE

- **Hazard statements**

Highly flammable liquid and vapour.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

Suspected of causing cancer.

May cause respiratory irritation.

- **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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- Ground and bond container and receiving equipment.
 Use explosion-proof [electrical/ventilating/lighting] equipment.
 Use non-sparking tools.
 Take actions to prevent static discharges.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 Rinse mouth.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Specific treatment (see on this label).
 Take off contaminated clothing and wash it before reuse.
 If skin irritation occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 In case of fire: Use CO₂, powder or water spray to extinguish.
 Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **National regulations:**
 - **Information about limitation of use:**
 Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
 - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Contact:**
- **Date of the latest revision of the safety data sheet** 01/06/2025 / -
- **Abbreviations and acronyms:**
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative

Sicherheitsdatenblatt

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ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** **FORMVAR SOLUTION 1,00%**

· **Artikelnummer:** 15830, 15830-25-SP, 15830-25

· **CAS-Nummer:**

107-06-2

· **EG-Nummer:**

203-458-1

· **Indexnummer:**

602-012-00-7

· **UFI:** YV91-30A0-U004-QJ03

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemisches** Laborchemikalien

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org

Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h

· **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 2 H225 Flüssigkeit und Dampf leicht entzündbar.



GHS08 Gesundheitsgefahr

Carc. 1B H350 Kann Krebs erzeugen.

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GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.

Skin Irrit. 2 H315 Verursacht Hautreizungen.

Eye Irrit. 2 H319 Verursacht schwere Augenreizung.

STOT SE 3 H335 Kann die Atemwege reizen.

· 2.2 Kennzeichnungselemente

· Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme



GHS02

GHS07

GHS08

· Signalwort Gefahr

· Gefahrbestimmende Komponenten zur Etikettierung:

1,2-Dichlorethan

· Gefahrenhinweise

H225 Flüssigkeit und Dampf leicht entzündbar.

H302 Gesundheitsschädlich bei Verschlucken.

H315 Verursacht Hautreizungen.

H319 Verursacht schwere Augenreizung.

H350 Kann Krebs erzeugen.

H335 Kann die Atemwege reizen.

· Sicherheitshinweise

P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.

P241 Explosionsgeschützte [elektrische/Lüftungs-/Beleuchtungs-] Geräte verwenden.

P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen [oder duschen].

P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser ausspülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter ausspülen.

P405 Unter Verschluss aufbewahren.

P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

· Zusätzliche Angaben:

Nur für gewerbliche Anwender.

· 2.3 Sonstige Gefahren

· Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.1 Stoffe

· CAS-Nr. Bezeichnung

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- **Identifikationsnummer(n)**
- **EG-Nummer:** 203-458-1
- **Indexnummer:** 602-012-00-7

· Gefährliche Inhaltsstoffe:

63450-15-7	POLYVINYL FORMAL	≤2,5%
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· SVHC

107-06-2	1,2-Dichlorethan	
63450-15-7	POLYVINYL FORMAL	

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
- **Allgemeine Hinweise:**
Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.
- **Nach Einatmen:** Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.
- **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.
- **Nach Augenkontakt:**
Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.
- **Nach Verschlucken:** Sofort Arzt aufsuchen.
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
Keine weiteren relevanten Informationen verfügbar.
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**
CO₂, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:**
Mit viel Wasser verdünnen.
Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.
Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.
Für ausreichende Lüftung sorgen.
- **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.

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Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**
Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.
Behälter mit Vorsicht öffnen und handhaben.
Aerosolbildung vermeiden.
- **Hinweise zum Brand- und Explosionsschutz:**
Zündquellen fernhalten - nicht rauchen.
Vor Hitze schützen.
Maßnahmen gegen elektrostatische Aufladung treffen.
Atemschutzgeräte bereithalten.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**
Behälter dicht geschlossen halten.
In gut verschlossenen Gebinden kühl und trocken lagern.
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

· 8.1 Zu überwachende Parameter

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

107-06-2 1,2-Dichlorethan

TRGS 910	Toleranzkonzentration: 4 mg/m ³ , 1 ppm, Überschreitungsfaktor: 8 Akzeptanzkonzentration: 0,8 mg/m ³ , 0,2 ppm
----------	---

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

· 8.2 Begrenzung und Überwachung der Exposition

- **Geeignete technische Steuerungseinrichtungen** Keine weiteren Angaben, siehe Abschnitt 7.
- **Individuelle Schutzmaßnahmen, zum Beispiel persönliche Schutzausrüstung**
- **Allgemeine Schutz- und Hygienemaßnahmen:**
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
Beschmutzte, getränkte Kleidung sofort ausziehen.
Vor den Pausen und bei Arbeitsende Hände waschen.
Getrennte Aufbewahrung der Schutzkleidung.
Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz**
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.

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· Handschutz

Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

· Handschuhmaterial

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

· Durchdringungszeit des Handschuhmaterials

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

· Augen-/Gesichtsschutz

Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**· Allgemeine Angaben****· Aggregatzustand**

Flüssig

· Farbe

Gemäß Produktbezeichnung

· Geruch:

Etherartig

· Geruchsschwelle:

Nicht bestimmt.

· Schmelzpunkt/Gefrierpunkt:

-35,5 °C

· Siedepunkt oder Siedebeginn und Siedebereich

83,5 °C (107-06-2 1,2-Dichlorethan)

· Entzündbarkeit

Leichtentzündlich.

· Untere und obere Explosionsgrenze**· Untere:**

6,2 Vol % (107-06-2 1,2-Dichlorethan)

· Obere:

15,9 Vol % (107-06-2 1,2-Dichlorethan)

· Flammpunkt:

13 °C

· Zündtemperatur

413-440 °C (107-06-2 1,2-Dichlorethan)

· Zersetzungstemperatur:

Nicht bestimmt.

· pH-Wert:

Nicht bestimmt.

· Viskosität:**· Kinematische Viskosität**

Nicht bestimmt.

· Dynamisch bei 20 °C:

0,8 mPas

· Löslichkeit**· Wasser bei 20 °C:**

8 g/l

· Verteilungskoeffizient n-Oktanol/Wasser (log-Wert)

Nicht bestimmt.

· Dampfdruck bei 20 °C:

87 hPa (107-06-2 1,2-Dichlorethan)

· Dichte und/oder relative Dichte**· Dichte bei 20 °C:**1,24 g/cm³**· Relative Dichte**

Nicht bestimmt.

· Dampfdichte

Nicht bestimmt.

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· 9.2 Sonstige Angaben	
· Aussehen:	
· Form:	Flüssigkeit
· Wichtige Angaben zum Gesundheits- und Umweltschutz sowie zur Sicherheit	
· Zündtemperatur:	Nicht bestimmt.
· Explosive Eigenschaften:	Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.
· Lösemittelgehalt:	
· VOC (EU)	0,00 %
· Festkörpergehalt:	0,0 %
· Zustandsänderung	
· Verdampfungsgeschwindigkeit	Nicht bestimmt.
· Angaben über physikalische Gefahrenklassen	
· Explosive Stoffe/Gemische und Erzeugnisse mit Explosivstoff	entfällt
· Entzündbare Gase	entfällt
· Aerosole	entfällt
· Oxidierende Gase	entfällt
· Gase unter Druck	entfällt
· Entzündbare Flüssigkeiten	Flüssigkeit und Dampf leicht entzündbar.
· Entzündbare Feststoffe	entfällt
· Selbsterzetzliche Stoffe und Gemische	entfällt
· Pyrophore Flüssigkeiten	entfällt
· Pyrophore Feststoffe	entfällt
· Selbsterhitzungsfähige Stoffe und Gemische	entfällt
· Stoffe und Gemische, die in Kontakt mit Wasser entzündbare Gase entwickeln	entfällt
· Oxidierende Flüssigkeiten	entfällt
· Oxidierende Feststoffe	entfällt
· Organische Peroxide	entfällt
· Gegenüber Metallen korrosiv wirkende Stoffe und Gemische	entfällt
· Desensibilisierte Stoffe/Gemische und Erzeugnisse mit Explosivstoff	entfällt

ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

-DE-

(Fortsetzung auf Seite 7)

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ABSCHNITT 11: Toxikologische Angaben

· 11.1 Angaben zu den Gefahrenklassen im Sinne der Verordnung (EG) Nr. 1272/2008

· **Akute Toxizität** Gesundheitsschädlich bei Verschlucken.

· Einstufungsrelevante LD/LC50-Werte:

107-06-2 1,2-Dichlorethan

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2.800 mg/kg (rat)

· Primäre Reizwirkung:

· **Ätz-/Reizwirkung auf die Haut** Verursacht Hautreizungen.

· **Schwere Augenschädigung/-reizung** Verursacht schwere Augenreizung.

· **Sensibilisierung der Atemwege/Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· **Keimzellmutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· **Karzinogenität** Kann Krebs erzeugen.

· **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· **Spezifische Zielorgan-Toxizität bei einmaliger Exposition** Kann die Atemwege reizen.

· **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**

Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· 11.2 Angaben über sonstige Gefahren

· Endokrinschädliche Eigenschaften

Keiner der Inhaltsstoffe ist enthalten.

ABSCHNITT 12: Umweltbezogene Angaben

· 12.1 Toxizität

· **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.

· **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.

· **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.

· **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.

· 12.5 Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

· 12.6 Endokrinschädliche Eigenschaften

Das Produkt enthält keine Stoffe mit endokrinschädlichen Eigenschaften.

· 12.7 Andere schädliche Wirkungen

· **Weitere ökologische Hinweise:**

· **Allgemeine Hinweise:**

Wassergefährdungsklasse 3 (Listeneinstufung): stark wassergefährdend

Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen, auch nicht in kleinen Mengen.

Trinkwassergefährdung bereits beim Auslaufen geringster Mengen in den Untergrund.

ABSCHNITT 13: Hinweise zur Entsorgung

· 13.1 Verfahren der Abfallbehandlung

· **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.

· **Ungereinigte Verpackungen:**

· **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

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· **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

ABSCHNITT 14: Angaben zum Transport

· **14.1 UN-Nummer oder ID-Nummer**· **ADR, IMDG, IATA**

UN1184

· **14.2 Ordnungsgemäße UN-Versandbezeichnung**· **ADR**

1184 ETHYLENDICHLORID

· **IMDG**

ETHYLENE DICHLORIDE, MARINE POLLUTANT

· **IATA**

ETHYLENE DICHLORIDE

· **14.3 Transportgefahrenklassen**· **ADR**· **Klasse**

3 Entzündbare flüssige Stoffe

· **Gefahrzettel**

3+6.1

· **IMDG**· **Class**

3 Entzündbare flüssige Stoffe

· **Label**

3/6.1

· **IATA**· **Class**

3 Entzündbare flüssige Stoffe

· **Label**

3 (6.1)

· **14.4 Verpackungsgruppe**· **ADR, IMDG, IATA**

II

· **14.5 Umweltgefahren:**· **Marine pollutant:**

Symbol (Fisch und Baum)

· **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**

Achtung: Entzündbare flüssige Stoffe

· **Nummer zur Kennzeichnung der Gefahr (Kemler-Zahl):**

336

· **EMS-Nummer:**

F-E, S-

· **Segregation groups**

(SGG10) Liquid halogenated hydrocarbons

· **Stowage Category**

B

· **Stowage Code**

SW2 Clear of living quarters.

· **14.7 Massengutbeförderung auf dem Seeweg gemäß****IMO-Instrumenten**

Nicht anwendbar.

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· Transport/weitere Angaben:**· ADR****· Begrenzte Menge (LQ)**

1L

· Freigestellte Mengen (EQ)

Code: E2

Höchste Nettomenge je Innenverpackung: 30 ml

Höchste Nettomenge je Außenverpackung: 500 ml

· Beförderungskategorie

2

· Tunnelbeschränkungscode

D/E

· IMDG**· Limited quantities (LQ)**

1L

· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation":

UN 1184 ETHYLENDICHLORID, 3 (6.1), II

ABSCHNITT 15: Rechtsvorschriften**· 15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch****· Richtlinie 2012/18/EU****· Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.**· Seveso-Kategorie P5c ENTZÜNDBARE FLÜSSIGKEITEN****· Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse** 5.000 t**· Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse** 50.000 t**· VERZEICHNIS DER ZULASSUNGSPFLICHTIGEN STOFFE (ANHANG XIV)**

Sunset date: 2017-11-22

· VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen: 3, 28**· Verordnung (EU) Nr. 649/2012**

Annex I Part 1

Annex I Part 3

· Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten – Anhang II

Keiner der Inhaltsstoffe ist enthalten.

· VERORDNUNG (EU) 2019/1148**· Anhang I - BESCHRÄNKTE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE (Oberer Konzentrationsgrenzwert für eine Genehmigung nach Artikel 5 Absatz 3)**

Keiner der Inhaltsstoffe ist enthalten.

· Anhang II - MELDEPFLICHTIGE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE

Keiner der Inhaltsstoffe ist enthalten.

· Verordnung (EG) Nr. 273/2004 betreffend Drogenausgangsstoffe

Keiner der Inhaltsstoffe ist enthalten.

· Verordnung (EG) Nr. 111/2005 zur Festlegung von Vorschriften für die Überwachung des Handels mit Drogenaustauschstoffen zwischen der Gemeinschaft und Drittländern

Keiner der Inhaltsstoffe ist enthalten.

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- **Nationale Vorschriften:**

- **Hinweise zur Beschäftigungsbeschränkung:**

Arbeitnehmer dürfen diesem Gefahrstoff nicht ausgesetzt sein. Im Einzelfall kann die Behörde Ausnahmen zulassen.

- **Technische Anleitung Luft:**

Klasse	Anteil in %
III	99,0

- **Wassergefährdungsklasse:** WGK 3 (Listeneinstufung): stark wassergefährdend.

- **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**

Das Produkt unterliegt der Anlage 2 der Chemikalienverbotsverordnung (ChemVerbotsV) - Anforderungen in Bezug auf die Abgabe

- **Besonders besorgniserregende Stoffe (SVHC) gemäß REACH, Artikel 57**

107-06-2	1,2-Dichlorethan
63450-15-7	POLYVINYL FORMAL

- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Entzündbare Flüssigkeiten – Kategorie 2

Acute Tox. 4: Akute Toxizität – Kategorie 4

Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2

Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2

Carc. 1B: Karzinogenität – Kategorie 1B

STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3

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SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· **1.1 Identificador de producto**

· **Nombre comercial:** FORMVAR SOLUTION 1.00%

· **Número del artículo:** 15830, 15830-25-SP, 15830-25

· **Número CAS:**

107-06-2

· **Número CE:**

203-458-1

· **Número de clasificación:**

602-012-00-7

· **UFI:** YV91-30A0-U004-QJ03

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

· **1.3 Datos del proveedor de la ficha de datos de seguridad**

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** Product safety department

· **1.4 Teléfono de emergencia:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SECCIÓN 2: Identificación de los peligros

· **2.1 Clasificación de la sustancia o de la mezcla**

· **Clasificación con arreglo al Reglamento (CE) nº 1272/2008**



GHS02 llama

Flam. Liq. 2 H225 Líquido y vapores muy inflamables.



GHS08 peligro para la salud

Carc. 1B H350 Puede provocar cáncer.



GHS07

Acute Tox. 4 H302 Nocivo en caso de ingestión.

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Skin Irrit. 2 H315 Provoca irritación cutánea.
 Eye Irrit. 2 H319 Provoca irritación ocular grave.
 STOT SE 3 H335 Puede irritar las vías respiratorias.

· 2.2 Elementos de la etiqueta
· Etiquetado con arreglo al Reglamento (CE) n° 1272/2008

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· Pictogramas de peligro


GHS02 GHS07 GHS08

· Palabra de advertencia Peligro
· Componentes peligrosos a indicar en el etiquetaje:

1,2-dicloroetano

· Indicaciones de peligro

H225 Líquido y vapores muy inflamables.

H302 Nocivo en caso de ingestión.

H315 Provoca irritación cutánea.

H319 Provoca irritación ocular grave.

H350 Puede provocar cáncer.

H335 Puede irritar las vías respiratorias.

· Consejos de prudencia

P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.

P241 Utilizar material [eléctrico/ de ventilación/iluminación] antideflagrante.

P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente toda la ropa contaminada. Enjuagar la piel con agua [o ducharse].

P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Enjuagar con agua cuidadosamente durante varios minutos. Quitar las lentes de contacto cuando estén presentes y pueda hacerse con facilidad. Proseguir con el lavado.

P405 Guardar bajo llave.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· 2.3 Otros peligros
· Resultados de la valoración PBT y mPmB

· **PBT:** No aplicable.

· **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

· 3.1 Sustancias
· Denominación N° CAS

107-06-2 1,2-dicloroetano

· Número(s) de identificación

· **Número CE:** 203-458-1

· **Número de clasificación:** 602-012-00-7

· Componentes peligrosos:

63450-15-7	POLYVINYL FORMAL	≤2,5%
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· SVHC	
107-06-2	I,2-dicloroetano
63450-15-7	POLYVINYL FORMAL

SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

· **Instrucciones generales:**

Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

· **En caso de inhalación del producto:**

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

· **En caso de contacto con la piel:** Lavar inmediatamente con agua y jabón y enjuagar bien.

· **En caso de con los ojos:**

Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.

· **En caso de ingestión:** Consultar inmediatamente un médico.

· **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.

· **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**
No existen más datos relevantes disponibles.

SECCIÓN 5: Medidas de lucha contra incendios

· **5.1 Medios de extinción**

· **Sustancias extintoras apropiadas:**

CO₂, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.

· **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.

· **5.3 Recomendaciones para el personal de lucha contra incendios**

· **Equipo especial de protección:** No se requieren medidas especiales.

SECCIÓN 6: Medidas en caso de vertido accidental

· **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

· **6.2 Precauciones relativas al medio ambiente:**

Diluir con mucha agua.

Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.

· **6.3 Métodos y material de contención y de limpieza:**

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

Desechar el material contaminado como vertido según ítem 13.

Asegurar suficiente ventilación.

· **6.4 Referencia a otras secciones**

Ver capítulo 7 para mayor información sobre una manipulación segura.

Ver capítulo 8 para mayor información sobre el equipo personal de protección.

Para mayor información sobre cómo desechar el producto, ver capítulo 13.

ES

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SECCIÓN 7: Manipulación y almacenamiento

· 7.1 Precauciones para una manipulación segura

Asegurar suficiente ventilación /aspiración en el puesto de trabajo.

Abrir y manejar el recipiente con cuidado.

Evitar la formación de aerosoles.

· Prevención de incendios y explosiones:

Mantener alejadas las fuentes de encendido. No fumar.

Proteger del calor.

Tomar medidas contra las cargas electrostáticas.

Tener preparados los aparatos respiratorios.

· 7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades

· Almacenamiento:

· **Exigencias con respecto al almacén y los recipientes:** Almacenar en un lugar fresco.

· **Normas en caso de un almacenamiento conjunto:** No es necesario.

· Indicaciones adicionales sobre las condiciones de almacenamiento:

Mantener el recipiente cerrado herméticamente.

Almacenarlo en envases bien cerrados en un lugar fresco y seco.

Proteger del calor y de la luz directa del sol.

· 7.3 Usos específicos finales No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

· 8.1 Parámetros de control

· Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:

107-06-2 1,2-dicloroetano

LEP Valor de larga duración: 8,2 mg/m³, 2 ppm

CIB, r, vía dérmica, v

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

· 8.2 Controles de la exposición

· **Controles técnicos apropiados** Sin datos adicionales, ver punto 7.

· **Medidas de protección individual, tales como equipos de protección personal**

· Medidas generales de protección e higiene:

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Guardar la ropa protectora por separado.

Evitar el contacto con los ojos y la piel.

· Protección respiratoria:

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

· Protección de las manos



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / substancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

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· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de los ojos/la cara**

Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**· **Datos generales**· **Estado físico**

Líquido

· **Color:**

Según denominación del producto

· **Olor:**

Etereo

· **Umbral olfativo:**

No determinado.

· **Punto de fusión / punto de congelación**

-35,5 °C

· **Punto de ebullición o punto inicial de ebullición e intervalo de ebullición**

83,5 °C (107-06-2 1,2-dicloroetano)

· **Inflamabilidad**

Fácilmente inflamable.

· **Límite superior e inferior de explosividad**· **Inferior:**

6,2 Vol % (107-06-2 1,2-dicloroetano)

· **Superior:**

15,9 Vol % (107-06-2 1,2-dicloroetano)

· **Punto de inflamación:**

13 °C

· **Temperatura de auto-inflamación:**

413-440 °C (107-06-2 1,2-dicloroetano)

· **Temperatura de descomposición:**

No determinado.

· **pH**

No determinado.

· **Viscosidad:**· **Viscosidad cinemática**

No determinado.

· **Dinámica a 20 °C:**

0,8 mPas

· **Solubilidad**· **agua a 20 °C:**

8 g/l

· **Coefficiente de reparto n-octanol/agua (valor logarítmico)**

No determinado.

· **Presión de vapor a 20 °C:**

87 hPa (107-06-2 1,2-dicloroetano)

· **Densidad y/o densidad relativa**· **Densidad a 20 °C:**1,24 g/cm³· **Densidad relativa**

No determinado.

· **Densidad de vapor**

No determinado.

· **9.2 Otros datos**· **Aspecto:**

Líquido

· **Forma:**· **Datos importantes para la protección de la salud y del medio ambiente y para la seguridad**· **Temperatura de ignición:**

No determinado.

· **Propiedades explosivas:**

El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

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- **Concentración del disolvente:**
- **VOC (CE)** 0,00 %
- **Contenido de cuerpos sólidos:** 0,0 %
- **Cambio de estado**
- **Tasa de evaporación:** No determinado.

- **Información relativa a las clases de peligro físico**
- **Explosivos** suprimido
- **Gases inflamables** suprimido
- **Aerosoles** suprimido
- **Gases comburentes** suprimido
- **Gases a presión** suprimido
- **Líquidos inflamables** Líquido y vapores muy inflamables.
- **Sólidos inflamables** suprimido
- **Sustancias y mezclas que reaccionan espontáneamente** suprimido
- **Líquidos pirofóricos** suprimido
- **Sólidos pirofóricos** suprimido
- **Sustancias y mezclas que experimentan calentamiento espontáneo** suprimido
- **Sustancias y mezclas que emiten gases inflamables en contacto con el agua** suprimido
- **Líquidos comburentes** suprimido
- **Sólidos comburentes** suprimido
- **Peróxidos orgánicos** suprimido
- **Corrosivos para los metales** suprimido
- **Explosivos no sensibilizados** suprimido

SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

SECCIÓN 11: Información toxicológica

- **11.1 Información sobre las clases de peligro definidas en el Reglamento (CE) n.o 1272/2008**
- **Toxicidad aguda** Nocivo en caso de ingestión.

· **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

107-06-2 1,2-dicloroetano

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2.800 mg/kg (rat)

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** Provoca irritación cutánea.
- **Lesiones oculares graves o irritación ocular** Provoca irritación ocular grave.
- **Sensibilización respiratoria o cutánea**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

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- **Mutagenicidad en células germinales**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Carcinogenicidad** Puede provocar cáncer.
- **Toxicidad para la reproducción** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) - exposición única** Puede irritar las vías respiratorias.
- **Toxicidad específica en determinados órganos (STOT) - exposición repetida**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro por aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **11.2 Información relativa a otros peligros**

· **Propiedades de alteración endocrina**

ninguno de los componentes está incluido en una lista

SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Propiedades de alteración endocrina**
El producto no contiene sustancias con propiedades disruptoras endocrinas.
- **12.7 Otros efectos adversos**
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados, ni siquiera en pequeñas cantidades.
Nivel de riesgo para el agua 3 (clasificación de listas): muy peligroso para el agua
Una cantidad ínfima vertida en el subsuelo ya representa un peligro para el agua potable.

SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

SECCIÓN 14: Información relativa al transporte

- **14.1 Número ONU o número ID**
- **ADR, IMDG, IATA** UN1184
- **14.2 Designación oficial de transporte de las Naciones Unidas**
- **ADR** 1184 DICLORURO DE ETILENO
- **IMDG** ETHYLENE DICHLORIDE, MARINE POLLUTANT
- **IATA** ETHYLENE DICHLORIDE

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· **14.3 Clase(s) de peligro para el transporte**

· **ADR**



· **Clase** 3 Líquidos inflamables
· **Etiqueta** 3+6.1

· **IMDG**



· **Class** 3 Líquidos inflamables
· **Label** 3/6.1

· **IATA**



· **Class** 3 Líquidos inflamables
· **Label** 3 (6.1)

· **14.4 Grupo de embalaje**

· **ADR, IMDG, IATA** II

· **14.5 Peligros para el medio ambiente:**

· **Contaminante marino:** Símbolo (pez y árbol)

· **14.6 Precauciones particulares para los usuarios**

· **Número de identificación de peligro (Número Kemler):** Atención: Líquidos inflamables
336
· **Número EMS:** F-E, S-
· **Segregation groups** (SGG10) Liquid halogenated hydrocarbons
· **Stowage Category** B
· **Stowage Code** SW2 Clear of living quarters.

· **14.7 Transporte marítimo a granel con arreglo a los instrumentos de la OMI**

No aplicable.

· **Transporte/datos adicionales:**

· **ADR**
· **Cantidades limitadas (LQ)** 1L
· **Cantidades exceptuadas (EQ)** Código: E2
Cantidad neta máxima por envase interior: 30 ml
Cantidad neta máxima por embalaje exterior: 500 ml
· **Categoría de transporte** 2
· **Código de restricción del túnel** D/E

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- | | |
|---|--|
| · IMDG | |
| · Limited quantities (LQ) | 1L |
| · Excepted quantities (EQ) | Code: E2 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 500 ml |
| · "Reglamentación Modelo" de la UNECE: | UN 1184 DICLORURO DE ETILENO, 3 (6.1), II |

SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**

- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **Categoría Seveso P5c** LÍQUIDOS INFLAMABLES
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior** 5.000 t
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior** 50.000 t

- **LISTA DE SUSTANCIAS SUJETAS A AUTORIZACIÓN (ANEXO XIV)**

Sunset date: 2017-11-22

- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3, 28

- **Reglamento (UE) No 649/2012**

Annex I Part 1
Annex I Part 3

- **Directiva 2011/65/UE sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos - Anexo II**

ninguno de los componentes está incluido en una lista

- **REGLAMENTO (UE) 2019/1148**

- **Anexo I - PRECURSORES DE EXPLOSIVOS RESTRINGIDOS (Valor límite superior a efectos de la concesión de licencias con arreglo al artículo 5, apartado 3)**

ninguno de los componentes está incluido en una lista

- **Anexo II - PRECURSORES DE EXPLOSIVOS NOTIFICABLES**

ninguno de los componentes está incluido en una lista

- **Reglamento (CE) no 273/2004 sobre precursores de drogas**

ninguno de los componentes está incluido en una lista

- **Reglamento (CE) N o 111/2005 por el que establecen normas para la vigilancia del comercio de precursores de drogas entre la Comunidad y terceros países**

ninguno de los componentes está incluido en una lista

- **Disposiciones nacionales:**

- **Indicaciones sobre las limitaciones de trabajo:**

Los empleados no deben exponerse a esta sustancia peligrosa. En casos aislados las autoridades pueden hacer excepciones.

- **Demás disposiciones, limitaciones y decretos prohibitivos**

- **Sustancias altamente preocupantes (SVHC) según REACH, artículo 57**

107-06-2 | 1,2-dicloroetano

63450-15-7 | POLYVINYL FORMAL

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· **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Líquidos inflamables – Categoría 2

Acute Tox. 4: Toxicidad aguda – Categoría 4

Skin Irrit. 2: Corrosión o irritación cutáneas – Categoría 2

Eye Irrit. 2: Lesiones oculares graves o irritación ocular – Categoría 2

Carc. 1B: Carcinogenicidad – Categoría 1B

STOT SE 3: Toxicidad específica en determinados órganos (exposición única) – Categoría 3

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RUBRIQUE 1: Identification de la substance/du mélange et de la société/de l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** FORMVAR SOLUTION 1.00%
- **Code du produit:** 15830, 15830-25-SP, 15830-25
- **No CAS:**
107-06-2
- **Numéro CE:**
203-458-1
- **Numéro index:**
602-012-00-7
- **UFI:** YV91-30A0-U004-QJ03
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

Flam. Liq. 2 H225 Liquide et vapeurs très inflammables.



GHS08 danger pour la santé

Carc. 1B H350 Peut provoquer le cancer.



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.

Skin Irrit. 2 H315 Provoque une irritation cutanée.

Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.

STOT SE 3 H335 Peut irriter les voies respiratoires.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.

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· **Pictogrammes de danger**

GHS02 GHS07 GHS08

· **Mention d'avertissement** *Danger*· **Composants dangereux déterminants pour l'étiquetage:***1,2-dichloroéthane*· **Mentions de danger***H225 Liquide et vapeurs très inflammables.**H302 Nocif en cas d'ingestion.**H315 Provoque une irritation cutanée.**H319 Provoque une sévère irritation des yeux.**H350 Peut provoquer le cancer.**H335 Peut irriter les voies respiratoires.*· **Conseils de prudence***P210 Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.**P241 Utiliser du matériel [électrique/de ventilation/d'éclairage] antidéflagrant.**P303+P361+P353 EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau [ou se doucher].**P305+P351+P338 EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.**P405 Garder sous cléf.**P501 Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.*· **2.3 Autres dangers**· **Résultats des évaluations PBT et vPvB**· **PBT:** Non applicable.· **vPvB:** Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

· **3.1 Substances**· **No CAS Désignation***107-06-2 1,2-dichloroéthane*· **Code(s) d'identification**· **Numéro CE:** 203-458-1· **Numéro index:** 602-012-00-7· **Composants dangereux:**

63450-15-7	POLYVINYL FORMAL	≤2,5%
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· **SVHC**

107-06-2	1,2-dichloroéthane
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63450-15-7	POLYVINYL FORMAL
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RUBRIQUE 4: Premiers secours

· 4.1 Description des mesures de premiers secours

· Remarques générales:

Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.

· **Après inhalation:** *En cas d'inconscience, coucher et transporter la personne en position latérale stable.*

· **Après contact avec la peau:** *Laver immédiatement à l'eau et au savon et bien rincer.*

· Après contact avec les yeux:

Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.

· **Après ingestion:** *Consulter immédiatement un médecin.*

· **4.2 Principaux symptômes et effets, aigus et différés** *Pas d'autres informations importantes disponibles.*

· **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**

Pas d'autres informations importantes disponibles.

RUBRIQUE 5: Mesures de lutte contre l'incendie

· 5.1 Moyens d'extinction

· Moyens d'extinction:

CO₂, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.

· 5.2 Dangers particuliers résultant de la substance ou du mélange

Pas d'autres informations importantes disponibles.

· 5.3 Conseils aux pompiers

· **Équipement spécial de sécurité:** *Aucune mesure particulière n'est requise.*

RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

· 6.1 Précautions individuelles, équipement de protection et procédures d'urgence

Porter un équipement de sécurité. Eloigner les personnes non protégées.

· 6.2 Précautions pour la protection de l'environnement

Diluer avec beaucoup d'eau.

Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.

· 6.3 Méthodes et matériel de confinement et de nettoyage:

Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).

Evacuer les matériaux contaminés en tant que déchets conformément au point 13.

Assurer une aération suffisante.

· 6.4 Référence à d'autres rubriques

Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.

Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

RUBRIQUE 7: Manipulation et stockage

· 7.1 Précautions à prendre pour une manipulation sans danger

Veiller à une bonne ventilation/aspiration du poste de travail.

Ouvrir et manipuler les récipients avec précaution.

Eviter la formation d'aérosols.

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- **Préventions des incendies et des explosions:**
Tenir à l'abri des sources d'inflammation - ne pas fumer.
Tenir à l'abri de la chaleur.
Prendre des mesures contre les charges électrostatiques.
Tenir des appareils de protection respiratoire prêts.
- **7.2 Conditions d'un stockage sûr, y compris les éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:**
Tenir les emballages hermétiquement fermés.
Stocker au frais et au sec dans des fûts bien fermés.
Protéger de la forte chaleur et du rayonnement direct du soleil.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

· 8.1 Paramètres de contrôle

- **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

107-06-2 1,2-dichloroéthane

VLEP	Valeur à long terme: 8,2 mg/m ³ , 2,00 ppm
	CIB, risque de pénétration percutanée

- **Remarques supplémentaires:**
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Contrôles techniques appropriés** Sans autre indication, voir point 7.
- **Mesures de protection individuelle, telles que les équipements de protection individuelle**
- **Mesures générales de protection et d'hygiène:**
Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.
Retirer immédiatement les vêtements souillés ou humectés.
Se laver les mains avant les pauses et en fin de travail.
Conserver à part les vêtements de protection.
Eviter tout contact avec les yeux et avec la peau.
- **Protection respiratoire:**
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

- Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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· Protection des yeux/du visage



Lunettes de protection hermétiques

RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles

· Indications générales

· État physique

Liquide

· Couleur:

Selon désignation produit

· Odeur:

Genre éther

· Seuil olfactif:

Non déterminé.

· Point de fusion/point de congélation:

-35,5 °C

· Point d'ébullition ou point initial d'ébullition et intervalle d'ébullition

83,5 °C (107-06-2 1,2-dichloroéthane)

· Inflammabilité

Facilement inflammable.

· Limites inférieure et supérieure d'explosion

· Inférieure:

6,2 Vol % (107-06-2 1,2-dichloroéthane)

· Supérieure:

15,9 Vol % (107-06-2 1,2-dichloroéthane)

· Point d'éclair

13 °C

· Température d'auto-inflammation

413-440 °C (107-06-2 1,2-dichloroéthane)

· Température de décomposition:

Non déterminé.

· pH

Non déterminé.

· Viscosité:

· Viscosité cinématique

Non déterminé.

· Dynamique à 20 °C:

0,8 mPas

· Solubilité

· l'eau à 20 °C:

8 g/l

· Coefficient de partage n-octanol/eau (valeur log)

Non déterminé.

· Pression de vapeur à 20 °C:

87 hPa (107-06-2 1,2-dichloroéthane)

· Densité et/ou densité relative

· Densité à 20 °C:

1,24 g/cm³

· Densité relative

Non déterminé.

· Densité de vapeur:

Non déterminé.

· 9.2 Autres informations

· Aspect:

Liquide

· Forme:

· Indications importantes pour la protection de la santé et de l'environnement ainsi que pour la sécurité

· Température d'inflammation:

Non déterminé.

· Propriétés explosives:

Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.

· Teneur en solvants:

· VOC (CE)

0,00 %

· Teneur en substances solides:

0,0 %

· Changement d'état

· Taux d'évaporation:

Non déterminé.

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- **Informations concernant les classes de danger physique**
- **Substances et mélanges explosibles** néant
- **Gaz inflammables** néant
- **Aérosols** néant
- **Gaz comburants** néant
- **Gaz sous pression** néant
- **Liquides inflammables** Liquide et vapeurs très inflammables.
- **Matières solides inflammables** néant
- **Substances et mélanges autoréactifs** néant
- **Liquides pyrophoriques** néant
- **Matières solides pyrophoriques** néant
- **Matières et mélanges auto-échauffants** néant
- **Substances et mélanges qui dégagent des gaz inflammables au contact de l'eau** néant
- **Liquides comburants** néant
- **Matières solides comburantes** néant
- **Peroxydes organiques** néant
- **Substances ou mélanges corrosifs pour les métaux** néant
- **Explosibles désensibilisés** néant

RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les classes de danger telles que définies dans le règlement (CE) no 1272/2008**
- **Toxicité aiguë** Nocif en cas d'ingestion.

- **Valeurs LD/LC50 déterminantes pour la classification:**

107-06-2 1,2-dichloroéthane

Oral	LD50	670 mg/kg (rat)
Dermique	LD50	2.800 mg/kg (rat)

- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée** Provoque une irritation cutanée.
- **Lésions oculaires graves/irritation oculaire** Provoque une sévère irritation des yeux.
- **Sensibilisation respiratoire ou cutanée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Mutagénicité sur les cellules germinales**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Cancérogénicité** Peut provoquer le cancer.
- **Toxicité pour la reproduction**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles (STOT) - exposition unique** Peut irriter les voies respiratoires.

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- **Toxicité spécifique pour certains organes cibles (STOT) - exposition répétée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **11.2 Informations sur les autres dangers**

· **Propriétés perturbant le système endocrinien**

Aucun des composants n'est compris.

RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **12.5 Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Propriétés perturbant le système endocrinien**
Le produit ne contient pas de substances avec des propriétés perturbatrices endocriniennes.
- **12.7 Autres effets néfastes**
- **Autres indications écologiques:**
- **Indications générales:**
Catégorie de pollution des eaux 3 (D) (classification selon liste): très polluant
Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations, même pas en petite quantité.
Danger pour l'eau potable dès fuite d'une quantité minime dans le sous-sol.

RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

RUBRIQUE 14: Informations relatives au transport

- **14.1 Numéro ONU ou numéro d'identification**
- **ADR, IMDG, IATA** UN1184
- **14.2 Désignation officielle de transport de l'ONU**
- **ADR** 1184 DICHLORURE D'ÉTHYLÈNE
- **IMDG** ETHYLENE DICHLORIDE, MARINE POLLUTANT
- **IATA** ETHYLENE DICHLORIDE

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· 14.3 Classe(s) de danger pour le transport

· ADR



· Classe 3 Liquides inflammables.
· Étiquette 3+6.1

· IMDG



· Class 3 Liquides inflammables.
· Label 3/6.1

· IATA



· Class 3 Liquides inflammables.
· Label 3 (6.1)

· 14.4 Groupe d'emballage

· ADR, IMDG, IATA II

· 14.5 Dangers pour l'environnement

· Marine Pollutant: Signe conventionnel (poisson et arbre)

· 14.6 Précautions particulières à prendre par l'utilisateur

Attention: Liquides inflammables.

· Numéro d'identification du danger (Indice Kemler): 336

· No EMS: F-E, S-

· Segregation groups (SGG10) Liquid halogenated hydrocarbons

· Stowage Category B

· Stowage Code SW2 Clear of living quarters.

· 14.7 Transport maritime en vrac conformément aux instruments de l'OMI

Non applicable.

· Indications complémentaires de transport:

· ADR

· Quantités limitées (LQ) 1L

· Quantités exceptées (EQ) Code: E2

Quantité maximale nette par emballage intérieur: 30 ml

Quantité maximale nette par emballage extérieur: 500 ml

· Catégorie de transport 2

· Code de restriction en tunnels D/E

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· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· "Règlement type" de l'ONU:	UN 1184 DICHLORURE D'ÉTHYLÈNE, 3 (6.1), II

RUBRIQUE 15: Informations relatives à la réglementation

· **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**

· **Directive 2012/18/UE**

· **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise

· **Catégorie SEVESO P5c LIQUIDES INFLAMMABLES**

· **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas** 5.000 t

· **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut** 50.000 t

· **LISTE DES SUBSTANCES SOUMISES À AUTORISATION (ANNEXE XIV)**

Sunset date: 2017-11-22

· **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 3, 28

· **Règlement (CE) N° 649/2012**

Annex I Part 1

Annex I Part 3

· **Directive 2011/65/UE relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques – Annexe II**

Aucun des composants n'est compris.

· **RÈGLEMENT (UE) 2019/1148**

· **Annexe I - PRÉCURSEURS D'EXPLOSIFS FAISANT L'OBJET DE RESTRICTIONS (Valeur limite maximale aux fins de l'octroi d'une licence en vertu de l'article 5, paragraphe 3)**

Aucun des composants n'est compris.

· **Annexe II - PRÉCURSEURS D'EXPLOSIFS DEVANT FAIRE L'OBJET D'UN SIGNALLEMENT**

Aucun des composants n'est compris.

· **Règlement (CE) n° 273/2004 relatif aux précurseurs de drogues**

Aucun des composants n'est compris.

· **Règlement (CE) n° 111/2005 fixant des règles pour la surveillance du commerce des précurseurs des drogues entre la Communauté et les pays tiers**

Aucun des composants n'est compris.

· **Prescriptions nationales:**

· **Indications sur les restrictions de travail:**

Le personnel ne doit pas être exposé à cette substance dangereuse. Les autorités peuvent autoriser des exceptions dans des cas particuliers.

· **Autres prescriptions, restrictions et règlements d'interdiction**

· **Substances extrêmement préoccupantes (SVHC) selon REACH, article 57**

107-06-2	1,2-dichloroéthane
63450-15-7	POLYVINYL FORMAL

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15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.**RUBRIQUE 16: Autres informations**

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

Acronymes et abréviations:*ADR: Accord relatif au transport international des marchandises dangereuses par route**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**SVHC: Substances of Very High Concern**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 2: Liquides inflammables – Catégorie 2**Acute Tox. 4: Toxicité aiguë – Catégorie 4**Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2**Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2**Carc. 1B: Cancérogénicité – Catégorie 1B**STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3*

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

- **1.1 Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25-SP, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.

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· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** *Danger*· **Hazard-determining components of labelling:**

ETHYLENE DICHLORIDE

· **Hazard statements**

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H350 May cause cancer.

H335 May cause respiratory irritation.

· **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**· **CAS No. Description**

107-06-2 ETHYLENE DICHLORIDE

· **Identification number(s)**· **EC number:** 203-458-1· **Index number:** 602-012-00-7· **SVHC**

107-06-2 | ETHYLENE DICHLORIDE

SECTION 4: First aid measures

· **4.1 Description of first aid measures**· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

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- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

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Protect from heat and direct sunlight.

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**· **Additional information about design of technical facilities:** No further data; see section 7.· **Ingredients with limit values that require monitoring at the workplace:**

107-06-2 ETHYLENE DICHLORIDE

WEL	Long-term value: 21 mg/m ³ , 5 ppm Carc; Sk
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· **Additional information:** The lists valid during the making were used as basis.· **8.2 Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Colour:	According to product specification
Odour:	Ether-like
Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/freezing point:	-35.5 °C
Initial boiling point and boiling range:	83.5 °C

· Flash point: 13 °C

· Flammability: Highly flammable.

· Auto-ignition temperature: 413-440 °C

· Decomposition temperature: Not determined.

· Ignition temperature: Not determined.

· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· Explosion limits:

Lower:	6.2 Vol %
Upper:	15.9 Vol %

· Vapour pressure at 20 °C: 87 hPa

Density at 20 °C:	1.24 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

· Solubility in / Miscibility with water at 20 °C: 8 g/l

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

Dynamic at 20 °C:	0.8 mPas
Kinematic:	Not determined.
VOC (EC)	0.00 %

Solids content: 0.0 %

· 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: No dangerous reactions known.

· 10.4 Conditions to avoid: No further relevant information available.

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- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed.

- **LD/LC50 values relevant for classification:**

107-06-2 ETHYLENE DICHLORIDE

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**
May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- | | | |
|--|--|---------------------------------|
| <ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA | UN1184 | |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG · IATA | 1184 ETHYLENE DICHLORIDE
ETHYLENE DICHLORIDE, MARINE POLLUTANT
ETHYLENE DICHLORIDE | |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR | <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids.
3+6.1 |
| <ul style="list-style-type: none"> · IMDG | <div style="display: flex; align-items: center; gap: 10px;">    </div> <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids.
3/6.1 |
| <ul style="list-style-type: none"> · IATA | <div style="display: flex; align-items: center; gap: 10px;">   </div> <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids.
3 (6.1) |
| <ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA | II | |
| <ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: | Symbol (fish and tree) | |
| <ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: | Warning: Flammable liquids.
336
F-E, S- | |

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· Segregation groups	(SGG10) Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

· Regulated explosives precursors
--

None of the ingredients is listed.

· Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

· Reportable poisons

None of the ingredients is listed.

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** Substance is not listed.

- **Seveso category P5c FLAMMABLE LIQUIDS**

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (UK ANNEX XIV)

Sunset date: 2017-11-22

- **National regulations:**

- **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

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· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to UK REACH**

107-06-2	ETHYLENE DICHLORIDE
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· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Carc. 1B: Carcinogenicity – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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SEZIONE 1: Identificazione della sostanza/miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** FORMVAR SOLUTION 1.00%

· **Articolo numero:** 15830, 15830-25-SP, 15830-25

· **Numero CAS:**

107-06-2

· **Numeri CE:**

203-458-1

· **Numero indice:**

602-012-00-7

· **UFI:** YV91-30A0-U004-QJ03

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**

Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 2 H225 Liquido e vapori facilmente infiammabili.



GHS08 pericolo per la salute

Carc. 1B H350 Può provocare il cancro.



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

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Skin Irrit. 2 H315 Provoca irritazione cutanea.
Eye Irrit. 2 H319 Provoca grave irritazione oculare.
STOT SE 3 H335 Può irritare le vie respiratorie.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS02 GHS07 GHS08

· **Avvertenza Pericolo**

· **Componenti pericolosi che ne determinano l'etichettatura:**

1,2-dicloroetano

· **Indicazioni di pericolo**

H225 Liquido e vapori facilmente infiammabili.

H302 Nocivo se ingerito.

H315 Provoca irritazione cutanea.

H319 Provoca grave irritazione oculare.

H350 Può provocare il cancro.

H335 Può irritare le vie respiratorie.

· **Consigli di prudenza**

P210 Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.

P241 Utilizzare impianti [elettrici/di ventilazione/d'illuminazione] a prova di esplosione.

P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle [o fare una doccia].

P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

P405 Conservare sotto chiave.

P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

· **2.3 Altri pericoli**

· **Risultati della valutazione PBT e vPvB**

· **PBT:** Non applicabile.

· **vPvB:** Non applicabile.

SEZIONE 3: Composizione/informazioni sugli ingredienti

· **3.1 Sostanze**

· **Numero CAS**

107-06-2 1,2-dicloroetano

· **Numero/i di identificazione**

· **Numeri CE:** 203-458-1

· **Numero indice:** 602-012-00-7

· **Sostanze pericolose:**

63450-15-7 POLYVINYL FORMAL

≤2,5%

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· SVHC	
107-06-2	I,2-dicloroetano
63450-15-7	POLYVINYL FORMAL

SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
- **Indicazioni generali:**
I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.
- **Inalazione:** Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.
- **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.
- **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.
- **Ingestione:** Chiamare subito il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

SEZIONE 5: Misure di lotta antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**
CO₂, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**
Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.
- **6.2 Precauzioni ambientali:**
Diluire abbondantemente con acqua.
Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**
Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).
Smaltimento del materiale contaminato conformemente al punto 13.
Provvedere ad una sufficiente areazione.
- **6.4 Riferimento ad altre sezioni**
Per informazioni relative ad una manipolazione sicura, vedere capitolo 7.
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.

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Aprire e manipolare i recipienti con cautela.

Evitare la formazione di aerosol.

· Indicazioni in caso di incendio ed esplosione:

Tenere lontano da fonti di calore, non fumare.

Proteggere dal calore.

Adottare provvedimenti contro cariche elettrostatiche.

Tener pronto il respiratore.

· 7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità

· Stoccaggio:

· Requisiti dei magazzini e dei recipienti: *Conservare in ambiente fresco.*

· Indicazioni sullo stoccaggio misto: *Non necessario.*

· Ulteriori indicazioni relative alle condizioni di immagazzinamento:

Mantenere i recipienti ermeticamente chiusi.

Conservare in luogo fresco e asciutto in fusti ben chiusi.

Proteggere dal calore e dai raggi diretti del sole.

· 7.3 Usi finali particolari *Non sono disponibili altre informazioni.*

SEZIONE 8: Controlli dell'esposizione/della protezione individuale

· 8.1 Parametri di controllo

· Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:

107-06-2 1,2-dicloroetano

TWA Valore a lungo termine: 40,5 mg/m³, 10 ppm

A4

· Ulteriori indicazioni: *Le liste valide alla data di compilazione sono state usate come base.*

· 8.2 Controlli dell'esposizione

· Controlli tecnici idonei *Nessun dato ulteriore, vedere punto 7.*

· Misure di protezione individuale, quali dispositivi di protezione individuale

· Norme generali protettive e di igiene del lavoro:

Tenere lontano da cibo, bevande e foraggi.

Togliere immediatamente gli abiti contaminati.

Lavarsi le mani prima dell'intervallo o a lavoro terminato.

Custodire separatamente l'equipaggiamento protettivo.

Evitare il contatto con gli occhi e la pelle.

· Protezione respiratoria

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

· Protezione delle mani



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

A causa della mancanza di test non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· Materiale dei guanti

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

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- **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Protezione degli occhi/del volto**



Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

- | | |
|---|---|
| · Stato fisico | Liquido |
| · Colore: | In conformità con la denominazione del prodotto |
| · Odore: | Simile all'etere |
| · Soglia olfattiva: | Non definito. |
| · Punto di fusione/punto di congelamento: | -35,5 °C |
| · Punto di ebollizione o punto di ebollizione iniziale e intervallo di ebollizione | 83,5 °C (107-06-2 1,2-dicloroetano) |
| · Infiammabilità | Facilmente infiammabile. |
| · Limite di esplosività inferiore e superiore | |
| · Inferiore: | 6,2 Vol % (107-06-2 1,2-dicloroetano) |
| · Superiore: | 15,9 Vol % (107-06-2 1,2-dicloroetano) |
| · Punto di infiammabilità: | 13 °C |
| · Temperatura di autoaccensione: | 413-440 °C (107-06-2 1,2-dicloroetano) |
| · Temperatura di decomposizione: | Non definito. |
| · ph | Non definito. |
| · Viscosità: | |
| · Viscosità cinematica | Non definito. |
| · Dinamica a 20 °C: | 0,8 mPas |
| · Solubilità | |
| · acqua a 20 °C: | 8 g/l |
| · Coefficiente di ripartizione n-ottanolo/acqua (valore logaritmico) | Non definito. |
| · Tensione di vapore a 20 °C: | 87 hPa (107-06-2 1,2-dicloroetano) |
| · Densità e/o densità relativa | |
| · Densità a 20 °C: | 1,24 g/cm ³ |
| · Densità relativa | Non definito. |
| · Densità di vapore: | Non definito. |

· 9.2 Altre informazioni

- | | |
|---|---|
| · Aspetto: | |
| · Forma: | Liquido |
| · Informazioni importanti sulla protezione della salute e dell'ambiente nonché della sicurezza | |
| · Temperatura di accensione: | Non definito. |
| · Proprietà esplosive: | Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive. |
| · Tenore del solvente: | |
| · VOC (CE) | 0,00 % |
| · Contenuto solido: | 0,0 % |

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· Cambiamento di stato	
· Velocità di evaporazione	Non definito.
· Informazioni relative alle classi di pericoli fisici	
· Esplosivi	non applicabile
· Gas infiammabili	non applicabile
· Aerosol	non applicabile
· Gas comburenti	non applicabile
· Gas sotto pressione	non applicabile
· Liquidi infiammabili	Liquido e vapori facilmente infiammabili.
· Solidi infiammabili	non applicabile
· Sostanze e miscele autoreattive	non applicabile
· Liquidi piroforici	non applicabile
· Solidi piroforici	non applicabile
· Sostanze e miscele autoriscaldanti	non applicabile
· Sostanze e miscele che emettono gas infiammabili a contatto con l'acqua	non applicabile
· Liquidi comburenti	non applicabile
· Solidi comburenti	non applicabile
· Perossidi organici	non applicabile
· Sostanze o miscele corrosive per i metalli	non applicabile
· Esplosivi desensibilizzati	non applicabile

SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sulle classi di pericolo definite nel regolamento (CE) n. 1272/2008**
- **Tossicità acuta** Nocivo se ingerito.

· **Valori LD/LC50 rilevanti per la classificazione:****107-06-2 1,2-dicloroetano**

Orale	LD50	670 mg/kg (rat)
Cutaneo	LD50	2.800 mg/kg (rat)

- **Irritabilità primaria:**
- **Corrosione cutanea/irritazione cutanea** Provoca irritazione cutanea.
- **Gravi danni oculari/irritazione oculare** Provoca grave irritazione oculare.
- **Sensibilizzazione respiratoria o cutanea**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Mutagenicità sulle cellule germinali**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Cancerogenicità** Può provocare il cancro.
- **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola** Può irritare le vie respiratorie.

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- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **11.2 Informazioni su altri pericoli**

· **Proprietà di interferenza con il sistema endocrino**

Nessuno dei componenti è contenuto.

SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Proprietà di interferenza con il sistema endocrino**
Il prodotto non contiene sostanze con proprietà dannose per il sistema endocrinale.
- **12.7 Altri effetti avversi**
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 3 (D) (Classif. secondo le liste): molto pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature, anche in piccole dosi.
Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di quantità minime di prodotto.

SEZIONE 13: considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

SEZIONE 14: Informazioni sul trasporto

- **14.1 Numero ONU o numero ID**
- **ADR, IMDG, IATA** UN1184
- **14.2 Designazione ufficiale ONU di trasporto**
- **ADR** 1184 DICLORURO DI ETILENE
- **IMDG** ETHYLENE DICHLORIDE, MARINE POLLUTANT
- **IATA** ETHYLENE DICHLORIDE

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· **14.3 Classi di pericolo connesso al trasporto**· **ADR**

· **Classe** 3 Liquidi infiammabili
· **Etichetta** 3+6.1

· **IMDG**

· **Class** 3 Liquidi infiammabili
· **Label** 3/6.1

· **IATA**

· **Class** 3 Liquidi infiammabili
· **Label** 3 (6.1)

· **14.4 Gruppo d'imballaggio**

· **ADR, IMDG, IATA** II

· **14.5 Pericoli per l'ambiente**

· **Marine pollutant:** Simbolo (pesce e albero)

· **14.6 Precauzioni speciali per gli utilizzatori**

· **N° identificazione pericolo (Numero Kemler):** Attenzione: Liquidi infiammabili
336
· **Numero EMS:** F-E, S-
· **Segregation groups** (SGG10) Liquid halogenated hydrocarbons
· **Stowage Category** B
· **Stowage Code** SW2 Clear of living quarters.

· **14.7 Trasporto marittimo alla rinfusa conformemente agli atti dell'IMO**

Non applicabile.

· **Trasporto/ulteriori indicazioni:**· **ADR**

· **Quantità limitate (LQ)** 1L
· **Quantità esenti (EQ)** Codice: E2
Quantità massima netta per imballaggio interno: 30 ml
Quantità massima netta per imballaggio esterno: 500 ml
· **Categoria di trasporto** 2
· **Codice di restrizione in galleria** D/E

· **IMDG**

· **Limited quantities (LQ)** 1L

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· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 DICLORURO DI ETILENE, 3 (6.1), II

SEZIONE 15: informazioni sulla regolamentazione

- **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta
- **Categoria Seveso P5c LIQUIDI INFIAMMABILI**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore 5.000 t**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore 50.000 t**

· **ELENCO DELLE SOSTANZE SOGGETTE AD AUTORIZZAZIONE (ALLEGATO XIV)**

Sunset date: 2017-11-22

- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3, 28

· **Regolamento (UE) N. 649/2012**

Annex I Part 1
Annex I Part 3

- **Direttiva 2011/65/UE sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche - Allegato II**

Nessuno dei componenti è contenuto.

· **REGOLAMENTO (UE) 2019/1148**

- **Allegato I - PRECURSORI DI ESPLOSIVI SOGGETTI A RESTRIZIONI (Valore limite superiore ai fini della concessione di licenze a norma dell'articolo 5, paragrafo 3)**

Nessuno dei componenti è contenuto.

· **Allegato II - PRECURSORI DI ESPLOSIVI SOGGETTI A SEGNALAZIONE**

Nessuno dei componenti è contenuto.

· **Regolamento (CE) n. 273/2004 relativo ai precursori di droghe**

Nessuno dei componenti è contenuto.

- **Regolamento (CE) N. 111/2005 recante norme per il controllo del commercio dei precursori di droghe tra la Comunità e i paesi terzi**

Nessuno dei componenti è contenuto.

· **Disposizioni nazionali:**

- **Indicazioni relative alla limitazione delle attività lavorative:**

Il personale non deve essere esposto a questa sostanza pericolosa L'autorità può ammettere nei singoli casi delle eccezioni.

- **Ulteriori disposizioni, limitazioni e decreti proibitivi**

· **Sostanze estremamente preoccupanti (SVHC) ai sensi della regolamento REACH, articolo 57**

107-06-2	1,2-dicloroetano
63450-15-7	POLYVINYL FORMAL

(continua a pagina 10)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 06.01.2025

Numero versione 1

Revisione: 06.01.2025

Denominazione commerciale: FORMVAR SOLUTION 1.00%

(Segue da pagina 9)

15.2 Valutazione della sicurezza chimica: Una valutazione della sicurezza chimica non è stata effettuata.**SEZIONE 16: Altre informazioni**

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

Abbreviazioni e acronimi:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquidi infiammabili – Categoria 2

Acute Tox. 4: Tossicità acuta – Categoria 4

Skin Irrit. 2: Corrosione/irritazione della pelle – Categoria 2

Eye Irrit. 2: Gravi lesioni oculari/irritazione oculare – Categoria 2

Carc. 1B: Cancerogenicità – Categoria 1B

STOT SE 3: Tossicità specifica per organi bersaglio (esposizione singola) – Categoria 3

물질안전보건자료
GHS에 따라

인쇄일자: 2025.01.06

개정: 2025.01.06

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: **FORMVAR SOLUTION 1.00%**
- 상품번호: 15830, 15830-25-SP, 15830-25
- CAS-번호
107-06-2
- EC 의번호:
203-458-1
- 색인 번호:
602-012-00-7
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도
- 제품의 권고 용도와 사용상의 제한: FORMVAR SOLUTION 1.00%
- 제품의 권고 용도와 사용상의 제한: 실험실 화학품
- 안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- Samchang Commercial Co., Ltd.
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298
-
- Daedok Science, Co. Ltd.
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성·위험성

- 순물질 또는 혼합물의 분류



GHS02 화염

인화성 액체 – 구분2

H225 고인화성 액체 및 증기



GHS08 건강에 위험

발암성 – 구분1B

H350 암을 일으킬 수 있음

(2 쪽에 계속)

물질안전보건자료 GHS에 따라

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(1 쪽부터계속)



GHS07

- 급성 독성 - 경구 - 구분4 H302 삼키면 유해함
- 피부 부식성/피부 자극성 - 구분2 H315 피부에 자극을 일으킴
- 심한 눈 손상성/눈 자극성 - 구분2A H319 눈에 심한 자극을 일으킴
- 특정표적장기 독성 - 1회 노출- 구분3 H335 호흡기 자극을 일으킬 수 있음

· 라벨표기 요소

· GHS 라벨 요소 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· GHS 그림문자



GHS02 GHS07 GHS08

· 신호어 위험

· 상표상에 명확히 위험성이 표시된 성분:

1,2-이염화에탄

· 유해·위험문구

- 고인화성 액체 및 증기
- 삼키면 유해함
- 피부에 자극을 일으킴
- 눈에 심한 자극을 일으킴
- 암을 일으킬 수 있음
- 호흡기 자극을 일으킬 수 있음

· 예방조치문구

- 열·스파크·화염·고열로부터 멀리하시오 - 금연
- 폭발 방지용 전기·환기·조명·장비를 사용하시오.
- 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하시오. 피부를 물로 씻으시오/샤워하시오 .
- 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하시오. 계속 씻으시오.
- 밀봉하여 저장하시오.
- (지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하시오.

· 기타 유해성

- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시
107-06-2 1,2-이염화에탄
- 식별 번호
- EC 의번호: 203-458-1
- 색인 번호: 602-012-00-7

(3 쪽에계속)

물질안전보건자료 GHS에 따라

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제품명: FORMVAR SOLUTION 1.00%

(2 쪽부터계속)

· 위 험 요 소:

63450-15-7 POLYVINYL FORMAL

≤2.5%

4 응급조치 요령

· 응급조치요령 내용

· 일 반 적 정 보:

중 독 증 상 은 몇 시 간 이 지 난 뒤 에 발 생 할 수 있 다. 따 라 서 사 고 가 발 생 한 후 에 적 어 도 48 시 간 동 안 은 의 료 진 의 관 찰 을 받 아 야 한 다.

· 흡 입 했 을 때: 환 자 가 의 식 을 잃 었 을 경 우 에 는 안 전 한 자 세 에 서 환 자 를 운 반 한 다.

· 피 부 에 접 촉 했 을 때: 즉 시 물 과 비 누 로 씻 고 잘 행 군 다.

· 눈 에 들 어 갔 을 때: 흐 르 는 물 에 눈 을 몇 분 동 안 씻 어 내 고 나 서, 증 상 이 지 속 될 경 우 에 는 의 사 와 상 담 한 다

· 먹 었 을 때: 즉 시 의 사 의 도 움 을 구 한 다.

· 기 타 의 사 의 주 의 사 항:

· 가 장 중 요 한 급·만 성 증 상 및 영 향 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.

· 즉 각 적 인 의 료 처 치 및 특 별 처 리 가 필 요 함 을 시 사 하 는 징 후 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.

5 폭발·화재시 대처방법

· 소 화 제

· 적 절 한 소 화 제:

이 산 화 탄 소, 진 화 용 석 회 가 루 도 는 물 방 사 를 사 용 하 고, 더 큰 화 재 는 물 을 분 사 하 거 나 알 코 올 형 포 소 화 약 제 로 끈 다.

· 본 화 학 물 질 이 나 혼 합 물 에 서 발 생 하 는 특 별 유 해 성 추 가 적 인 정 보 가 존 재 하 지 않 습 니 다.

· 소 방 관 에 대 한 권 고 사 항

· 화 재 진 압 시 착 용 할 보 호 구 및 예 방 조 치: 특 별 한 조 치 가 필 요 없 음.

6 누출 사고 시 대처방법

· 개 인 적 예 방 조 치, 보 호 장 비 및 응 급 처 치 절 차 안 전 장 비 착 용 하 고, 무 방 비 의 사 람 은 격 리 시 킨 다.

· 환 경 관 련 예 방 조 치:

많 은 물 로 희 석 시 킨 다.

하 수 도 망 / 해 수 면 위 의 물 / 지 하 수 로 도 달 하 지 않 게 한 다.

· 밀 폐 및 정 화 방 법 과 소 재:

액 체 가 혼 합 된 물 질 (모 래, 규 조 토, 산 성 결 합 물, 일 반 결 합 물, 톱 밥) 에 흡 입 되 도 록 한 다.

항 목 13 에 따 라 오 염 된 물 질 을 쓰레 기 로 처 분 한 다.

충 분 한 환 기 가 되 도 록 한 다.

· 타 섹 션 참 조

안 전 관 리 에 대 한 정 보 는 제 7 장 을 참 고 하 시 오.

개 인 보 호 장 비 에 대 한 정 보 는 제 8 장 을 참 고 하 시 오.

쓰 레 기 처 리 에 대 한 정 보 는 제 13 장 을 참 고 하 시 오.

7 취급 및 저장방법

· 취 급:

· 안 전 취 급 을 위 한 예 방 조 치

작 업 장 에 서 는 통 풍 이 잘 되 고 / 습 기 제 거 가 잘 되 게 주 의 한 다.

조 심 스 럽 게 용 기 를 개 봉 하 거 나 취 급 한 다.

연 무 질 이 형 성 되 는 것 을 피 한 다.

(4 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2025.01.06

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제품명: FORMVAR SOLUTION 1.00%

(3 쪽부터계속)

- **화재 및 폭발 사고 예방대책에 관한 정보:**
 발 화 요소는 멀 리 둔 다-금 연.
 열로부터보호한다.
 정 전 기 의 충 전 으로부터 보호한다.
 호흡보호장비를항상비치한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 차 가 운 장 소 에 보 관한다.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필 요없음
- **보 관 조 건 에 관 한 추가적인 정보:**
 용기를새지않게밀폐한채보관한다.
 밀폐된 용기속에서늘하고건조하게보관한다.
 열이나직사광선으로부터보호한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

- **첨단시설 디자인에 대한 추가정보:** 더 이 상 의 자료는 없음. 항 목 7 을 참고하시 오.

· **통제 변수**

- **화학물질의 노출기준, 생물학적 노출기준 등:**

107-06-2 1,2-이염화에탄

OELV (KR)	장기간의값: 10 ppm 발암성 1B
BOELV (EU)	장기간의값: 8.2 mg/m ³ , 2 ppm Skin
PEL (US)	장기간의값: 50 ppm 최고노출기준: 100; 200* ppm *5-min peak in any 3 hrs
REL (US)	단기간의값: 8 mg/m ³ , 2 ppm 장기간의값: 4 mg/m ³ , 1 ppm See Pocket Guide Apps. A and C
TLV (US)	장기간의값: 10 ppm A4

- **추 가 정보:** 제 조 할 당시에 유 효 한 목 록 을 기초로 사용했다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

- 식 료 품, 음 료 수와 사 료 로 부 터 멀 리 떨 어 뜨 려 놓 는 다.
- 더 러 워 지 거 나 음 료 수 가 묻 은 옷 은 즉 시 탈 의 한 다.
- 휴 식 전 이 나 작 업 이 끝 날 때 마 다 손 을 씻 는 다.
- 방 호 복 은 따 로 보 관 한 다.
- 눈 과 피 부 와 의 접 촉 은 피 한 다.

· **호흡기 보호:**

- 단 시 간 또 는 경 미 한 오 염 의 경 우 에 는 호 흡 여 과 기 를 사 용 한 다. 심 각 한 또 는 장 기 간 노 출 시 에 는 호 흡 보 호 장 비 를 사 용 한 다.

(5 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2025.01.06

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제품명: FORMVAR SOLUTION 1.00%

(4 쪽부터계속)

· 손 보호:



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테스트를하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율과저하를고려해서 장갑 재료를 선택한다.

· 장갑의재료

적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· 장갑 재료의 투과 시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

· 눈 보호:



꼭조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
물리적 상태:	액체
색:	제품 표시에 따름
냄새:	에테르종류의
후각역치	알맞지않다.
· pH:	알맞지않다.
· 상태변화	
녹는점/어는점:	-35.5 °C
초기 끓는점과 끓는점 범위:	83.5 °C
· 인화점:	13 °C
· 인화성:	쉽게발화하는
· 자기점화:	413-440 °C
· 분해 온도:	알맞지않다.
· 점화온도:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.
· 인화 또는 폭발 범위의 상한/하한	
아래로:	6.2 Vol %
위로:	15.9 Vol %
· 증기압 의경우 20 °C:	87 hPa
· 밀도 의경우 20 °C:	1.24 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.

(6 쪽에계속)

물질안전보건자료
GHS에 따라

인쇄일자: 2025.01.06

개정: 2025.01.06

제품명: FORMVAR SOLUTION 1.00%

(5 쪽부터계속)

· 용해도:	
물 의 경우 20 °C:	8 g/l
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
역학성 의 경우 20 °C:	0.8 mPas
동점성:	알맞지않다.
VOC (EU)	0.00 %
고체의 함량:	0.0 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:

· LD/LC50-수치에 따른 분류:

107-06-2 1,2-이염화에탄

구강의 LD50 670 mg/kg (rat)

피부의 LD50 2,800 mg/kg (rat)

- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부와점막을자극한다.
- 심한 눈 손상 또는 자극성: 자극
- 감각화: 민감한영향이없는것으로알려져있다.
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
- 발암성 – 구분1B

12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환 경 시스템에서의 행 동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:
- 수질오염등급 3 (목록분류): 심하게수질오염이된

(7 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2025.01.06

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(6 쪽부터계속)

- 지하수나, 하천으로또는하수도망에도달하지않게한다. 역시극소수의양이라도안된다.
- 지하수로아주미세한양이유입되었을경우엔이미식수오염상태이다
- **PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과**
- **PBT(잔류성, 생물농축성, 독성 물질):** 해당사항 없음.
- **vPvB(고 잔류성, 고 생물농축성 물질):** 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.
- **추 천 세정제:** 경우에따라서세제가첨가된물

14 운송에 필요한 정보

<ul style="list-style-type: none"> · 유엔 번호 · ADR, IMDG, IATA 	<p>UN1184</p>
<ul style="list-style-type: none"> · UN 적정 선정명 · ADR · IMDG · IATA 	<p>1184 ETHYLENE DICHLORIDE ETHYLENE DICHLORIDE, MARINE POLLUTANT ETHYLENE DICHLORIDE</p>
<ul style="list-style-type: none"> · 교통 위험 클래스 · ADR 	<div style="display: flex; justify-content: center; gap: 20px;">   </div> <p>3 발화성용액 3+6.1</p>
<ul style="list-style-type: none"> · IMDG 	<div style="display: flex; justify-content: center; gap: 20px;">    </div> <p>3 발화성용액 3/6.1</p>
<ul style="list-style-type: none"> · IATA 	<div style="display: flex; justify-content: center; gap: 20px;">   </div> <p>3 발화성용액 3 (6.1)</p>

(8 쪽에계속)

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제품명: FORMVAR SOLUTION 1.00%

(7 쪽부터계속)

· 용기등급 · ADR, IMDG, IATA	II
· 환경적 유해물질: · 해양오염물질:	심별 (물고기와 나무)
· 이용자 특별 예방조치 · 위험 코드: · EMS-번호: · Segregation groups · Stowage Category · Stowage Code	경고: 발화성용액 336 F-E, S- (SGG10) Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· 운 송/추가 정보:	
· ADR · 한정 수량 (LQ) · Excepted quantities (EQ) · 운송 구분 · 터널 제한 코드	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml 2 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "모범 규제":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 법적 규제현황

· 산업안전보건법에 의한 규제:

· 제조 등 금지물질:

어떠한내용물도 목록화되어있지않다

· 허가대상물질:

어떠한내용물도 목록화되어있지않다

· 관리대상유해물질:

107-06-2 | 1,2-이염화에탄

· 관리대상 유해물질의 종류 유기화합물: 118

· 작업환경측정 대상 유해인자

1A22

· 특수건강진단 대상 유해인자

1A20

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory

KE-10121

(9 쪽에계속)

물질안전보건자료 GHS에 따라

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제품명: FORMVAR SOLUTION 1.00%

(8 쪽부터 계속)

· **화학물질관리법**

· **사고대비물질**

어떠한내용물도목록화되어있지않다

· **금지물질**

어떠한내용물도목록화되어있지않다

· **제한물질**

어떠한내용물도목록화되어있지않다

· **유독물질**

107-06-2 | 1,2-이염화에탄

· **위험물질안전관리법 (위험물 및 지정수량) 제 4: 200 리터**

· **등록 또는 신고 면제대상 화학물질**

어떠한내용물도목록화되어있지않다

· **‘21년까지 등록하여야 할 압, 돌연변이, 생식능력 이상을 일으키거나 일으킬 우려가 있는 기존화학물질**

어떠한내용물도목록화되어있지않다

· **중점관리물질(제2조 관련)**

어떠한내용물도목록화되어있지않다

· **GHS 라벨 요소** 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· **GHS 그림문자**



GHS02 GHS07 GHS08

· **신호어 위험**

· **상표상에 명확히 위험성이 표시된 성분:**

1,2-이염화에탄

· **유해·위험문구**

고인화성 액체 및 증기

삼키면 유해함

피부에 자극을 일으킴

눈에 심한 자극을 일으킴

암을 일으킬 수 있음

호흡기 자극을 일으킬 수 있음

· **예방조치문구**

열·스파크·화염·고열로부터 멀리하시오 - 금연

폭발 방지용 전기·환기·조명·장비를 사용하시오.

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하시오. 피부를 물로 씻으시오/샤워하시오 .

눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하시오. 계속 씻으시오.

밀봉하여 저장하시오.

(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하시오.

· **국내규정:**

· **사용제한에 대한 정보:** 노동자들은 이러한 위험물질을 내버리지 않아야 한다. 개별적인 경우에 관청은 예외를 허가할 수 있다.

· **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

KR

(10 쪽에 계속)

물질안전보건자료
GHS에 따라

인쇄일자: 2025.01.06

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(9 쪽부터 계속)

16 그 밖의 참고사항

이 보고는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다
하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

· 담당자:

· 최초 작성일자: 2025.01.06

· 개정 횟수 및 최종 개정일자: 1 / 2025.01.06

· 약어와 두문자어:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

KR

Veiligheidsinformatieblad
 volgens Verordening (EG) nr. 1907/2006, Artikel 31

datum van de druk: 06.01.2025

Versienummer 1

Herziening van: 06.01.2025

RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

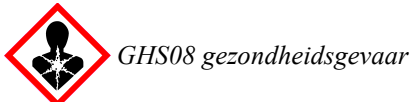
- **1.1 Productidentificatie**
- **Handelsnaam:** FORMVAR SOLUTION 1.00%
- **Artikelnummer:** 15830, 15830-25-SP, 15830-25
- **CAS-nummer:**
107-06-2
- **EC-nummer:**
203-458-1
- **Catalogusnummer:**
602-012-00-7
- **UFI:** YV91-30A0-U004-QJ03
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Aurion**
Binnenhaven 5
6709 PD Wageningen
The Netherlands
Tel: 31 317 415094
Fax: 31 317 415955
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



Flam. Liq. 2 H225 Licht ontvlambare vloeistof en damp.



Carc. 1B H350 Kan kanker veroorzaken.



Acute Tox. 4 H302 Schadelijk bij inslikken.

(Vervolg op blz. 2)

Veiligheidsinformatieblad

volgens Verordening (EG) nr. 1907/2006, Artikel 31

datum van de druk: 06.01.2025

Versienummer 1

Herziening van: 06.01.2025

Handelsnaam: FORMVAR SOLUTION 1.00%

(Vervolg van blz. 1)

Skin Irrit. 2 H315 Veroorzaakt huidirritatie.
Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.
STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

· 2.2 Etiketteringselementen

· Etikettering overeenkomstig Verordening (EG) nr. 1272/2008

De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

· Gevarenpictogrammen



GHS02 GHS07 GHS08

· Signaalwoord Gevaar

· Gevaaraanduidende componenten voor de etikettering:

1,2-dichloorethaan

· Gevarenaanduidingen

H225 Licht ontvlambare vloeistof en damp.

H302 Schadelijk bij inslikken.

H315 Veroorzaakt huidirritatie.

H319 Veroorzaakt ernstige oogirritatie.

H350 Kan kanker veroorzaken.

H335 Kan irritatie van de luchtwegen veroorzaken.

· Veiligheidsaanbevelingen

P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.

P241 Explosie veilige [elektrische/ventilatie-/verlichtings-]apparatuur gebruiken.

P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen [of afdouchen].

P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.

P405 Achter slot bewaren.

P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

· 2.3 Andere gevaren

· Resultaten van PBT- en zPzB-beoordeling

· **PBT:** Niet bruikbaar.

· **zPzB:** Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

· 3.1 Stoffen

· CAS-Nr. omschrijving

107-06-2 1,2-dichloorethaan

· Identificatienummer(s)

· **EC-nummer:** 203-458-1

· **Catalogusnummer:** 602-012-00-7

· Gevaarlijke inhoudstoffen:

63450-15-7	POLYVINYL FORMAL	$\leq 2,5\%$
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(Vervolg op blz. 3)

Veiligheidsinformatieblad

volgens Verordening (EG) nr. 1907/2006, Artikel 31

datum van de druk: 06.01.2025

Versienummer 1

Herziening van: 06.01.2025

Handelsnaam: FORMVAR SOLUTION 1.00%

(Vervolg van blz. 2)

· SVHC	
107-06-2	1,2-dichloorethaan
63450-15-7	POLYVINYL FORMAL

RUBRIEK 4: Eerstehulpmaatregelen

· 4.1 Beschrijving van de eerstehulpmaatregelen

· Algemene informatie:

Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.

· **Na het inademen:** Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

· **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.

· Na oogcontact:

De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.

· **Na inslikken:** Onmiddellijk arts raadplegen.

· **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.

· **4.3 Vermelding van eventueel noodzakelijke onmiddellijke medische verzorging en speciale behandeling**

Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

· 5.1 Blusmiddelen

· Geschikte blusmiddelen:

CO₂, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.

· **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**

Geen verdere relevante informatie verkrijgbaar.

· **5.3 Advies voor brandweerlieden**

· **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

· 6.1 Persoonlijke voorzorgsmaatregelen, beschermingsmiddelen en noodprocedures

Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

· 6.2 Milieuvoorzorgsmaatregelen:

Met veel water verdunnen.

Niet in de riolering/het oppervlaktewater/het grondwater laten terecht komen.

· 6.3 Insluitings- en reinigingsmethoden en -materiaal:

Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.

Besmet materiaal zoals afval volgens punt 13 verwijderen.

Voor voldoende ventilatie zorgen.

· 6.4 Verwijzing naar andere rubrieken

Informatie inzake veilig gebruik - zie hoofdstuk 7.

Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.

Informatie inzake berging - zie hoofdstuk 13.

(Vervolg op blz. 4)

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RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**
 Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
 Tanks voorzichtig openen en behandelen.
 Aërosolvorming vermijden.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**
 Onststekingsbronnen op afstand houden - niet roken.
 Beschermen tegen hitte.
 Maatregelen treffen tegen ontlading van statische elektriciteit.
 Ademhalingstoestellen gereedhouden.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**
 Tanks ondoordringbaar gesloten houden.
 Koel en droog bewaren in goed gesloten vaten.
 Tegen hitte en directe zonnestralen beschermen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **8.1 Controleparameters**
 - **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**
- | | |
|------------------------------------|---|
| 107-06-2 1,2-dichloorethaan | |
| WGW | Lange termijn waarde: 7 mg/m ³ , 1,7 ppm |
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
 - **8.2 Maatregelen ter beheersing van blootstelling**
 - **Passende technische maatregelen** Geen aanvullende gegevens. Zie 7.
 - **Individuele beschermingsmaatregelen, zoals persoonlijke beschermingsmiddelen**
 - **Algemene beschermings- en gezondheidsmaatregelen:**
 Verwijderd houden van eet- en drinkwaren.
 Verontreinigde kleding onmiddellijk uittrekken.
 Vóór de pauze en aan het einde van werktijd handen wassen.
 Beschermende kleding afzonderlijk bewaren.
 Aanraking met de ogen en de huid vermijden.
 - **Bescherming van de ademhalingswegen**
 Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.
 - **Bescherming van de handen**



Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.
 Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.

Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

(Vervolg op blz. 5)

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· Handschoenmateriaal

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.

· Doordringingstijd van het handschoenmateriaal

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

· Bescherming van de ogen/het gezicht

Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen**· Algemene gegevens****· Fysische toestand**

Vloeibaar

· Kleur:

Volgens de produktbeschrijving

· Geur:

Etherachtig

· Geurdrempelwaarde:

Niet bepaald.

· Smeltpunt/vriespunt

-35,5 °C

· Kookpunt of beginkookpunt en kooktraject

83,5 °C (107-06-2 1,2-dichloorethaan)

· Ontvlambaarheid

Licht ontvlambaar.

· Onderste en bovenste explosiegrens**· Onderste:**

6,2 Vol % (107-06-2 1,2-dichloorethaan)

· Bovenste:

15,9 Vol % (107-06-2 1,2-dichloorethaan)

· Vlampunt:

13 °C

· Zelfontbrandingstemperatuur:

413-440 °C (107-06-2 1,2-dichloorethaan)

· Ontledingstemperatuur:

Niet bepaald.

· pH

Niet bepaald.

· Viscositeit**· Kinematische viscositeit**

Niet bepaald.

· Dynamisch bij 20 °C:

0,8 mPas

· Oplosbaarheid**· Water bij 20 °C:**

8 g/l

· Verdelingscoëfficiënt n-octanol/water (logwaarde)

Niet bepaald.

· Dampspanning bij 20 °C:

87 hPa (107-06-2 1,2-dichloorethaan)

· Dichtheid en/of relatieve dichtheid**· Dichtheid bij 20 °C:**1,24 g/cm³**· Relatieve dichtheid**

Niet bepaald.

· Dampdichtheid

Niet bepaald.

· 9.2 Overige informatie**· Voorkomen:****· Vorm:**

Vloeistof

· Belangrijke gegevens over de gezondheids- en milieubescherming en over de veiligheid**· Ontstekingstemperatuur:**

Niet bepaald.

· Ontploffingseigenschappen:

Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

· Oplosmiddelgehalte:**· VOC (EG)**

0,00 %

· Gehalte aan vaste bestanddelen:

0,0 %

(Vervolg op blz. 6)

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· Toestandsverandering	
· Verdampingssnelheid	Niet bepaald.
· Informatie inzake fysische gevarenklassen	
· Ontpofbare stoffen	Niet van toepassing
· Ontvlambare gassen	Niet van toepassing
· Aerosolen	Niet van toepassing
· Oxiderende gassen	Niet van toepassing
· Gassen onder druk	Niet van toepassing
· Ontvlambare vloeistoffen	Licht ontvlambare vloeistof en damp.
· Ontvlambare vaste stoffen	Niet van toepassing
· Zelfontledende stoffen en mengsels	Niet van toepassing
· Pyrofore vloeistoffen	Niet van toepassing
· Pyrofore vaste stoffen	Niet van toepassing
· Voor zelfverhitting vatbare stoffen en mengsels	Niet van toepassing
· Stoffen en mengsels die in contact met water ontvlambare gassen ontwikkelen	Niet van toepassing
· Oxiderende vloeistoffen	Niet van toepassing
· Oxiderende vaste stoffen	Niet van toepassing
· Organische peroxiden	Niet van toepassing
· Bijtend voor metalen	Niet van toepassing
· Ongevoelig gemaakte ontpofbare stoffen	Niet van toepassing

RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** Geen verdere relevante informatie verkrijgbaar.
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over gevarenklassen als omschreven in Verordening (EG) nr. 1272/2008**
- **Acute toxiciteit** Schadelijk bij inslikken.

· Indelingsrelevantie LD/LC50-waarden:

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Oraal	LD50	670 mg/kg (rat)
Dermaal	LD50	2.800 mg/kg (rat)

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Veroorzaakt huidirritatie.
- **Ernstig oogletsel/oogirritatie** Veroorzaakt ernstige oogirritatie.
- **Sensibilisatie van de luchtwegen/de huid**
Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Carcinogeniteit** Kan kanker veroorzaken.
- **Giftigheid voor de voortplanting** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij eenmalige blootstelling** Kan irritatie van de luchtwegen veroorzaken.
- **STOT bij herhaalde blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

(Vervolg op blz. 7)

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· **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

· **11.2 Informatie over andere gevaren**

· **Hormoonontregelende eigenschappen**

geen der bestanddelen staat op de lijst.

RUBRIEK 12: Ecologische informatie

· **12.1 Toxiciteit**

· **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.

· **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.

· **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.

· **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.

· **12.5 Resultaten van PBT- en zPzB-beoordeling**

· **PBT:** Niet bruikbaar.

· **zPzB:** Niet bruikbaar.

· **12.6 Hormoonontregelende eigenschappen**

Het product bevat geen stoffen met hormoonontregelende eigenschappen.

· **12.7 Andere schadelijke effecten**

· **Verdere ecologische informatie:**

· **Algemene informatie:**

Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/ reprotoxiciteit/bioaccumulerend vermogen/ toxiciteit of persistentie)

Niet lozen in grondwater, oppervlaktewater of riolering, ook niet in kleine hoeveelheden.

Gevaar voor water klasse 3 (D) (Lijstclassificatie): gevaar voor water groot

Gevaar voor drinkwater zelfs bij het uitlopen van zeer geringe hoeveelheden in de ondergrond.

RUBRIEK 13: Instructies voor verwijdering

· **13.1 Afvalverwerkingsmethoden**

· **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terecht komen.

· **Niet gereinigde verpakkingen:**

· **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

· **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

· **14.1 VN-nummer of ID-nummer**

· **ADR, IMDG, IATA** UN1184

· **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**

· **ADR** 1184 ETHYLEENDICHLORIDE

· **IMDG** ETHYLENE DICHLORIDE, MARINE POLLUTANT

· **IATA** ETHYLENE DICHLORIDE

(Vervolg op blz. 8)

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· **14.3 Transportgevarenklasse(n)**

· **ADR**



· **klasse** 3 Brandbare vloeistoffen
 · **Etiket** 3+6.1

· **IMDG**



· **Class** 3 Brandbare vloeistoffen
 · **Label** 3/6.1

· **IATA**



· **Class** 3 Brandbare vloeistoffen
 · **Label** 3 (6.1)

· **14.4 Verpakkingsgroep:**

· **ADR, IMDG, IATA** II

· **14.5 Milieugevaren:**

· **Marine pollutant:** Symbool (vis en boom)

· **14.6 Bijzondere voorzorgen voor de gebruiker** Waarschuwing: Brandbare vloeistoffen

· **Gevaarsidentificatienummer (Kemler-getal):** 336

· **EMS-nummer:** F-E, S-

· **Segregation groups** (SGG10) Liquid halogenated hydrocarbons

· **Stowage Category** B

· **Stowage Code** SW2 Clear of living quarters.

· **14.7 Zeevervoer in bulk overeenkomstig IMO-instrumenten**

Niet bruikbaar.

· **Transport/verdere gegevens:**

· **ADR**

· **Beperkte hoeveelheden (LQ)** 1L

· **Uitgezonderde hoeveelheden (EQ)** Code: E2

Grootste netto hoeveelheid per binnenvpakking: 30 ml

Grootste netto hoeveelheid per buitenverpakking: 500 ml

· **Vervoerscategorie** 2

· **Tunnelbeperkingscode** D/E

· **IMDG**

· **Limited quantities (LQ)** 1L

(Vervolg op blz. 9)

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- | | |
|---|---|
| <ul style="list-style-type: none"> · Excepted quantities (EQ) | <ul style="list-style-type: none"> Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml |
| <ul style="list-style-type: none"> · VN "Model Regulation": | <ul style="list-style-type: none"> UN 1184 ETHYLEENDICHLORIDE, 3 (6.1), II |

RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

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· **SZW-lijst van mutagene stoffen**

geen der bestanddelen staat op de lijst.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

geen der bestanddelen staat op de lijst.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

geen der bestanddelen staat op de lijst.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

geen der bestanddelen staat op de lijst.

· **Lijst Zeer Zorgwekkende Stoffen (ZZS)**

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· **Lijst van Potentieel Zeer Zorgwekkende Stoffen**

geen der bestanddelen staat op de lijst.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Seveso-categorie P5c ONTVLAMBARE VLOEISTOFFEN**

· **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen** 5.000 t

· **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen** 50.000 t

· **LIJST VAN AUTORISATIEPLICHTIGE STOFFEN (BIJLAGE XIV)**

Sunset date: 2017-11-22

· **Verordening (EG) nr. 1907/2006 BIJLAGE XVII Beperkingsvoorwaarden:** 3, 28

· **Verordening (EU) Nr. 649/2012**

Annex I Part 1

Annex I Part 3

· **Richtlijn 2011/65/EU betreffende beperking van het gebruik van bepaalde gevaarlijke stoffen in elektrische en elektronische apparatuur - Bijlage II**

geen der bestanddelen staat op de lijst.

· **VERORDENING (EU) 2019/1148**

· **Bijlage I - PRECURSOREN VOOR EXPLOSIEVEN WAARVOOR EEN BEPERKING GELDT (Bovengrenswaarde ten behoeve van vergunningverlening op grond van artikel 5, lid 3)**

geen der bestanddelen staat op de lijst.

· **Bijlage II - PRECURSOREN VOOR EXPLOSIEVEN DIE MOETEN WORDEN GEMELD**

geen der bestanddelen staat op de lijst.

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· **Verordening (EG) nr. 273/2004 inzake drugsprecursoren**

geen der bestanddelen staat op de lijst.

· **Verordening (EG) Nr. 111/2005 houdende voorschriften voor het toezicht op de handel tussen de Gemeenschap en derde landen in drugsprecursoren**

geen der bestanddelen staat op de lijst.

· **Nationale voorschriften:**

· **Aanwijzingen m.b.t. tewerkstellingsbeperking:**

Werknemers mogen aan deze gevaarlijke stof niet blootgesteld worden. In uitzonderingsgevallen kan de overheid speciale vergunningen afgeven.

· **Gevaarklasse v. water:**

Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/reprotoxiciteit/bioaccumulerend vermogen/ toxiciteit of persistentie)

· **Aanvullende voorschriften, beperkingen en verbodsverordeningen**

· **Zeer zorgwekkende stoffen (SVHC) volgens REACH, artikel 57**

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63450-15-7	POLYVINYL FORMAL

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Ontvlambare vloeistoffen – Categorie 2

Acute Tox. 4: Acute toxiciteit – Categorie 4

Skin Irrit. 2: Huidcorrosie/-irritatie – Categorie 2

Eye Irrit. 2: Ernstig oogletsel/oogirritatie – Categorie 2

Carc. 1B: Kankerverwekkendheid – Categorie 1B

STOT SE 3: Specifieke doelorgaantoxiciteit bij eenmalige blootstelling – Categorie 3

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/06/2025

Reviewed on 01/06/2025

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25-SP, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS07

Acute Toxicity - Oral 4

H302 Harmful if swallowed.

Skin Irritation 2

H315 Causes skin irritation.

Eye Irritation 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: **FORMVAR SOLUTION 1.00%**

(Contd. of page 1)

· **Hazard pictograms**

GHS02 GHS07 GHS08

· **Signal word** *Danger*· **Hazard-determining components of labeling:**

ETHYLENE DICHLORIDE

· **Hazard statements***Highly flammable liquid and vapor.**Harmful if swallowed.**Causes skin irritation.**Causes serious eye irritation.**Suspected of causing cancer.**May cause respiratory irritation.*· **Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Avoid breathing dust/fume/gas/mist/vapors/spray**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**Rinse mouth.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**IF exposed or concerned: Get medical advice/attention.**Specific treatment (see on this label).**Take off contaminated clothing and wash it before reuse.**If skin irritation occurs: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**In case of fire: Use CO2, powder or water spray to extinguish.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 3

Fire = 3

Reactivity = 0

(Contd. on page 3)

US

Safety Data Sheet

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
107-06-2 ETHYLENE DICHLORIDE
- **Identification number(s)**
- **EC number:** 203-458-1
- **Index number:** 602-012-00-7

· **Dangerous components:**

63450-15-7	POLYVINYL FORMAL	≤2.5%
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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1:	
	50 ppm
· PAC-2:	
	200 ppm
· PAC-3:	
	300 ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.

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- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

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PEL Long-term value: 50 ppm
Ceiling limit value: 100; 200* ppm
*5-min peak in any 3 hrs

REL Short-term value: 8 mg/m³, 2 ppm
Long-term value: 4 mg/m³, 1 ppm
See Pocket Guide Apps. A and C

TLV Long-term value: 10 ppm
A4

- **Additional information:** *The lists that were valid during the creation were used as basis.*

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

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9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Liquid
Color:	According to product specification
Odor:	Ether-like
Odor threshold:	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range:	-35.5 °C (-31.9 °F)
Boiling point/Boiling range:	83.5 °C (182.3 °F)

- **Flash point:** 13 °C (55.4 °F)

- **Flammability:** Highly flammable.

- **Auto igniting:** 413-440 °C (775.4-824 °F)

- **Decomposition temperature:** Not determined.

- **Ignition temperature:** Not determined.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

Lower:	6.2 Vol %
Upper:	15.9 Vol %

- **Vapor pressure at 20 °C (68 °F):** 87 hPa (65.3 mm Hg)

- **Density at 20 °C (68 °F):** 1.24 g/cm³ (10.3478 lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

Water at 20 °C (68 °F): 8 g/l

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic at 20 °C (68 °F):	0.8 mPas
Kinematic:	Not determined.
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal

Solids content: 0.0 %

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.

- **Chemical stability**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **Possibility of hazardous reactions** No dangerous reactions known.

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- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

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Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

2B

- **NTP (National Toxicology Program)**

R

- **OSHA-Ca (Occupational Safety Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Assessment by list): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** UNI184

· **UN proper shipping name**
· **DOT** Ethylene dichloride
· **ADR** 1184 ETHYLENE DICHLORIDE
· **IMDG** ETHYLENE DICHLORIDE, MARINE POLLUTANT
· **IATA** ETHYLENE DICHLORIDE

· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids
· **Label** 3, 6.1

· **ADR**



· **Class** 3 Flammable liquids
· **Label** 3+6.1

· **IMDG**



· **Class** 3 Flammable liquids
· **Label** 3/6.1

· **IATA**



· **Class** 3 Flammable liquids

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· Label	3 (6.1)
· Packing group · DOT, ADR, IMDG, IATA	II
· Environmental hazards: · Marine pollutant:	Yes (DOT) Symbol (fish and tree)
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Stowage Code	Warning: Flammable liquids 336 F-E, S- (SGG10) Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Hazardous substance: · Remarks:	On passenger aircraft/rail: 1 L On cargo aircraft only: 60 L 100 lbs, 45.4 kg Special marking with the symbol (fish and tree).
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

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· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

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· **Proposition 65**· **Chemicals known to cause cancer:**

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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

B2

· **TLV (Threshold Limit Value)**

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

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· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).· **Hazard pictograms**

GHS02

GHS07

GHS08

· **Signal word** Danger· **Hazard-determining components of labeling:**

ETHYLENE DICHLORIDE

· **Hazard statements**

Highly flammable liquid and vapor.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

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If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO₂, powder or water spray to extinguish.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Date of preparation / last revision** 01/06/2025 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

*OSHA: Occupational Safety **Health***

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 2: Flammable liquids – Category 2

Acute Toxicity - Oral 4: Acute toxicity – Category 4

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3