

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/16/2018

Reviewed on 10/16/2018

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 0.25%
- **Article number:** 15810
- **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: sgkcck@aol.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

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

.....



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

.....



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 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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· 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 for extinction: CO2, powder or water spray.**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

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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

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, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **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:** Do not allow to enter sewers/ surface or ground water.

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- **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 item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **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 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.
- **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 item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:****107-06-2 ETHYLENE DICHLORIDE**

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/m ³ , 2 ppm Long-term value: 4 mg/m ³ , 1 ppm See Pocket Guide Apps. A and C

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TLV Long-term value: 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 (-31.9 °F)

Boiling point/Boiling range: 84 °C (183.2 °F)

· **Flash point:** 13 °C (55.4 °F)

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· Flammability (solid, gaseous):	Not flammable.
· Ignition temperature:	440 °C (824 °F)
· Decomposition temperature:	Not determined.
· Auto igniting:	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:	16 Vol %
· Vapor pressure at 20 °C (68 °F):	87 hPa (65.3 mm Hg)
· Density at 20 °C (68 °F):	1.25 g/cm ³ (10.43125 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.
- **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)

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- **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)**

Substance is not 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.

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.

14 Transport information

- | | |
|----------------------------------|--------------------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1184 |
| · UN proper shipping name | |
| · DOT | Ethylene dichloride |
| · ADR | 1184 Ethylene dichloride |
| · IMDG, IATA | ETHYLENE DICHLORIDE |

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· **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
 · **Label** 3 (6.1)

· **Packing group**· **DOT, ADR, IMDG, IATA** II· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **Danger code (Kemler):** 336· **EMS Number:** 3-03· **Segregation groups** Liquid halogenated hydrocarbons· **Stowage Category** B· **Stowage Code** 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** On passenger aircraft/rail: 1 L

On cargo aircraft only: 60 L

· **Hazardous substance:** 100 lbs, 45.4 kg

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- | | |
|--|---|
| <ul style="list-style-type: none"> · ADR · 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"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <ul style="list-style-type: none"> 1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <ul style="list-style-type: none"> 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):**

Substance is not listed.

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

107-06-2 | ETHYLENE DICHLORIDE

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

Substance is listed.

- **TSCA new (21st Century Act) (Substances not listed)**

63450-15-7 | POLYVINYL FORMAL

- **Proposition 65**

- **Chemicals known to cause cancer:**

107-06-2 | ETHYLENE DICHLORIDE

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

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

B2

- **TLV (Threshold Limit Value established by ACGIH)**

A4

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

107-06-2 | ETHYLENE DICHLORIDE

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

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· **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 for extinction: CO2, powder or water spray.**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.*

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· **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.

· **Date of preparation / last revision** 10/16/2018 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial 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

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

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

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

Carc. 2: Carcinogenicity – Category 2

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

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- **Product identifier**
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- **Article number:** 15810
- **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: sgkcck@aol.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

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

.....



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

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AU

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Trade name: **FORMVAR SOLUTION 0.25%**

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GHS07

*Acute Tox. 4 H302 Harmful if swallowed.**Skin Irrit. 2 H315 Causes skin irritation.**Eye Irrit. 2A H319 Causes serious eye irritation.**STOT SE 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

GHS07

GHS08

· **Signal word** *Danger*

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

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/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/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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

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In case of fire: Use for extinction: CO₂, powder or water spray.

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.

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

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

- **SVHC**

107-06-2	ETHYLENE DICHLORIDE
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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:** *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

- **Extinguishing media**
- **Suitable extinguishing agents:** *CO₂, sand, extinguishing powder. Do not use water.*
- **For safety reasons unsuitable extinguishing agents:** *Water with full jet*
- **Special hazards arising from the substance or mixture** *No further relevant information available.*
- **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.

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Trade name: FORMVAR SOLUTION 0.25%

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- **Environmental precautions:** 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 item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **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 fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
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 container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

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

- **Control parameters**

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

107-06-2 ETHYLENE DICHLORIDE

NES	Long-term value: 40 mg/m ³ , 10 ppm
WES	Long-term value: 40 mg/m ³ , 10 ppm

- **Additional information:** The lists valid during the making 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.

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- **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

9 Physical and Chemical Properties

- **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:	84 °C

- **Flash point:** 13 °C

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 440 °C

- **Decomposition temperature:** Not determined.

- **Auto-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 %
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Upper:	16 Vol %
· Vapour pressure at 20 °C:	87 hPa
· Density at 20 °C:	1.25 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.
· Solvent content:	
VOC (EC)	0.00 %
· 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 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** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
Carc. 2

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.

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- **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.
- **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.

14 Transport information

- | | |
|---|---|
| <ul style="list-style-type: none"> · UN-Number · ADG, IMDG, IATA | UN1184 |
| <ul style="list-style-type: none"> · UN proper shipping name · ADG · IMDG, IATA | 1184 ETHYLENE DICHLORIDE
ETHYLENE DICHLORIDE |
| <ul style="list-style-type: none"> · Transport hazard class(es) · ADG |  |
| <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids.
3+6.1 |
| <ul style="list-style-type: none"> · IMDG |  |
| <ul style="list-style-type: none"> · Class | 3 Flammable liquids. |

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Trade name: FORMVAR SOLUTION 0.25%

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· Label	3/6.1
· IATA	
	
· Class	3 Flammable liquids.
· Label	3 (6.1)
· Packing group	II
· ADG, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	336
· EMS Number:	3-03
· Segregation groups	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 Chemical Substances**

Substance is listed.

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

S6

· **GHS label elements**

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

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Trade name: **FORMVAR SOLUTION 0.25%**

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· **Hazard pictograms**

GHS02 GHS07 GHS08

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

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/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/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): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove victim to fresh air and keep at rest in a position 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 for extinction: CO₂, powder or water spray.**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.*· **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

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· **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
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· **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.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport 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

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: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

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

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

Carc. 2: Carcinogenicity – Category 2

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

AU

Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 10/16/2018

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 0.25%
- **Article number:** 15810
- **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: sgkcck@aol.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 - 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.

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).

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· 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 for extinction: CO₂, powder or water spray.**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

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· **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**

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, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **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:** 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 item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents

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- **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 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.
- **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 item 7.
- **Control parameters**

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

107-06-2 ETHYLENE DICHLORIDE

EL	Short-term value: 2 ppm Long-term value: 1 ppm IARC 2B
----	--

EV	Long-term value: 40 mg/m ³ , 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.

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Trade name: FORMVAR SOLUTION 0.25%

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· **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: 84 °C

· **Flash point:** 13 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 440 °C

· **Decomposition temperature:** Not determined.

· **Auto igniting:** 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: 16 Vol %

· **Vapor pressure at 20 °C:** 87 hPa

· **Density at 20 °C:** 1.25 g/cm³

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· 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.
- **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.

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- **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.

14 Transport information

- **UN-Number**

- **DOT, TDG, IMDG, IATA**

UN1184

- **UN proper shipping name**

- **DOT**

Ethylene dichloride

- **TDG**

1184 Ethylene dichloride

- **IMDG, IATA**

ETHYLENE DICHLORIDE

- **Transport hazard class(es)**

- **DOT**



- **Class**

3 Flammable liquids

- **Label**

3, 6.1

- **TDG (Transport dangerous goods):**



- **Class**

3 Flammable liquids

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· **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, IMDG, IATA** II

· **Environmental hazards:** Not applicable.

· **Special precautions for user** Warning: Flammable liquids
 · **Danger code (Kemler):** 336
 · **EMS Number:** 3-03
 · **Segregation groups** Liquid halogenated hydrocarbons
 · **Stowage Category** B
 · **Stowage Code** 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** On passenger aircraft/rail: 1 L
 On cargo aircraft only: 60 L
 · **Hazardous substance:** 100 lbs, 45.4 kg

· **TDG**
 · **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

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15 Regulatory information

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

· **Sara**

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

Substance is not listed.

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

107-06-2 ETHYLENE DICHLORIDE

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

Substance is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance 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.

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.

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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 for extinction: CO2, powder or water spray.

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.

· **Date of the latest revision of the safety data sheet** 10/16/2018 / -

· **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

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

Safety data sheet
according to 1907/2006/EC, Article 31

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Revision: 16.10.2018

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

- **1.1 Product identifier**
- **Trade name:** FORMVAR SOLUTION 0.25%
- **Article number:** 15810
- **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: sgkcck@aol.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 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/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, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **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:** 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 item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **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 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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· 7.3 **Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.· 8.1 **Control parameters**· **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

· **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: 84 °C

· Flash point: 13 °C

· Flammability (solid, gas): Not applicable.

· Ignition temperature: 440 °C

· Decomposition temperature: Not determined.

· Auto-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: 16 Vol %

· Vapour pressure at 20 °C: 87 hPa

· Density at 20 °C: 1.25 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.

· Solvent content:

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.

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- **10.4 Conditions to avoid** No further relevant information available.
- **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.
- **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.

SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN1184

· **14.2 UN proper shipping name**

· **ADR**

1184 ETHYLENE DICHLORIDE

· **IMDG, IATA**

ETHYLENE DICHLORIDE

· **14.3 Transport hazard class(es)**

· **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)

· **14.4 Packing group**

· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Danger code (Kemler):**

336

· **EMS Number:**

3-03

· **Segregation groups**

Liquid halogenated hydrocarbons

· **Stowage Category**

B

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· 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**

· **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 (ANNEX XIV)**

Sunset date: 2017-11-22

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 28, 40

· **Regulation (EU) No 649/2012**

Annex I Part 1

Annex I Part 3

· **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**

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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.

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· Abbreviations and acronyms:

ADR: Accord européen sur le transport 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

SVHC: Substances of Very High Concern

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

GB

Bezpečnostní list

podle 1907/2006/ES, Článek 31

Datum vydání: 16.10.2018

Revize: 16.10.2018

ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

- **1.1 Identifikátor výrobku**
- **Obchodní označení:** FORMVAR SOLUTION 0.25%
- **Číslo výrobku:** 15810
- **Číslo CAS:**
107-06-2
- **Číslo ES:**
203-458-1
- **Indexové číslo:**
602-012-00-7
- **1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití**
Další relevantní informace nejsou k dispozici.
- **Použití látky / přípravku** Laboratorní chemikálie
- **1.3 Podrobné údaje o dodavateli bezpečnostního listu**
- **Identifikace výrobce/dovozce:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Obor poskytující informace:** Product safety department
- **1.4 Telefonní číslo pro naléhavé situace:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ODDÍL 2: Identifikace nebezpečnosti

- **2.1 Klasifikace látky nebo směsi**
- **Klasifikace v souladu s nařízením (ES) č. 1272/2008**



GHS02 plamen

Flam. Liq. 2 H225 Vysoce hořlavá kapalina a páry.



GHS08 nebezpečnost pro zdraví

Carc. 1B H350 Může vyvolat rakovinu.



GHS07

Acute Tox. 4 H302 Zdraví škodlivý při požití.

Skin Irrit. 2 H315 Dráždí kůži.

Eye Irrit. 2 H319 Způsobuje vážné podráždění očí.

STOT SE 3 H335 Může způsobit podráždění dýchacích cest.

- **2.2 Prvky označení**
- **Označování v souladu s nařízením (ES) č. 1272/2008** Látka je klasifikována a označena podle nařízení CLP.

(pokračování na straně 2)

Bezpečnostní list

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Obchodní označení: FORMVAR SOLUTION 0.25%

(pokračování strany 1)

· Výstražné symboly nebezpečnosti



GHS02 GHS07 GHS08

· Signální slovo Nebezpečí

· Nebezpečné komponenty k etiketování:

1,2-Dichlorethan

· Standardní věty o nebezpečnosti

H225 Vysoce hořlavá kapalina a páry.

H302 Zdraví škodlivý při požití.

H315 Dráždí kůži.

H319 Způsobuje vážné podráždění očí.

H350 Může vyvolat rakovinu.

H335 Může způsobit podráždění dýchacích cest.

· Pokyny pro bezpečné zacházení

P210 Chraňte před teplem, horkými povrchy, jiskrami, otevřeným ohněm a jinými zdroji zapálení.
Zákaz kouření.

P241 Používejte elektrické/ventilační/osvětlovací/zařízení do výbušného prostředí.

P303+P361+P353 PŘI STYKU S KŮŽÍ (nebo s vlasy): Veškeré kontaminované části oděvu okamžitě svlékněte.
Opláchněte kůži vodou/osprchujte.

P305+P351+P338 PŘI ZASAŽENÍ OČÍ: Několik minut opatrně vyplachujte vodou. Vyjměte kontaktní čočky,
jsou-li nasazeny a pokud je lze vyjmout snadno. Pokračujte ve vyplachování.

P405 Skladujte uzamčené.

P501 Obsah/nádobu likvidujte v souladu s místními/regionálními/národními/mezinárodními předpisy.

· 2.3 Další nebezpečnost

· Výsledky posouzení PBT a vPvB

· PBT: Nedá se použít.

· vPvB: Nedá se použít.

ODDÍL 3: Složení/informace o složkách

· 3.1 Chemická charakteristika: Látky

· Číslo CAS:

107-06-2 1,2-Dichlorethan

· Identifikační číslo(čísla)

· Číslo ES: 203-458-1

· Indexové číslo: 602-012-00-7

· SVHC

107-06-2	1,2-Dichlorethan
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ODDÍL 4: Pokyny pro první pomoc

· 4.1 Popis první pomoci

· Všeobecné pokyny:

Příznaky otravy se mohou projevit až po mnoha hodinách, proto je nutný lékařský dohled nejméně 48 hodin po nehodě.

· Při nadýchání: Při bezvědomí uložit a přepravit ve stabilní poloze na boku.

(pokračování na straně 3)

Bezpečnostní list podle 1907/2006/ES, Článek 31

Datum vydání: 16.10.2018

Revize: 16.10.2018

Obchodní označení: FORMVAR SOLUTION 0.25%

(pokračování strany 2)

- **Při styku s kůží:** Ihned omýt vodou a mýdlem a dobře opláchnout.
- **Při zasažení očí:**
Oči s otevřenými víčky vyplachovat po více minut proudem tekoucí vody. Při přetrvávajících potížích se poradit s lékařem.
- **Při požití:** Ihned vyhledat lékaře.
- **4.2 Nejdůležitější akutní a opožděné symptomy a účinky** Další relevantní informace nejsou k dispozici.
- **4.3 Pokyn týkající se okamžité lékařské pomoci a zvláštního ošetření**
Další relevantní informace nejsou k dispozici.

ODDÍL 5: Opatření pro hašení požáru

- **5.1 Hasiva**
- **Vhodná hasiva:** CO₂, písek, hasící prášek. Nepoužít vodu.
- **Nevhodná hasiva:** Plný proud vody
- **5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi** Další relevantní informace nejsou k dispozici.
- **5.3 Pokyny pro hasiče**
- **Zvláštní ochranné prostředky pro hasiče:** Nejsou nutná žádná zvláštní opatření.

ODDÍL 6: Opatření v případě náhodného úniku

- **6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy**
Nosit ochrannou výstroj. Nechráněné osoby se nesmí přibližovat.
- **6.2 Opatření na ochranu životního prostředí:**
Nenechat proniknout do kanalizace/povrchových vod/podzemních vod.
- **6.3 Metody a materiál pro omezení úniku a pro čištění:**
Sebrat s materiály, vázícími kapaliny (písek, šterkový písek, pojidla kyselin, universální pojidla, piliny).
Kontaminovaný materiál odstranit jako odpad podle bodu 13.
Zajistit dostatečné větrání.
Nesplachovat vodou nebo čistícími prostředky, obsahujícími vodu.
- **6.4 Odkaz na jiné oddíly**
Informace o bezpečném zacházení viz kapitola 7.
Informace o osobní ochranné výstroji viz kapitola 8.
Informace k odstranění viz kapitola 13.

ODDÍL 7: Zacházení a skladování

- **7.1 Opatření pro bezpečné zacházení**
Na pracovišti zabezpečit dobré větrání a odsávání.
Nádrž opatrně otevřít a zacházet s ní opatrně.
Zamezit vytváření aerosolů.
- **Upozornění k ochraně před ohněm a explozí:**
Nepřibližovat se ze zápalnými zdroji - nekouřit.
Zajistit proti elektrostatickému náboji.
Mít připravené ochranné dýchací přístroje.
- **7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí**
- **Pokyny pro skladování:**
- **Požadavky na skladovací prostory a nádoby:** Skladovat na chladném místě.
- **Upozornění k hromadnému skladování:** Není nutné.
- **Další údaje k podmínkám skladování:**
Nádrž držet neprodyšně uzavřenou.
Skladovat v dobře uzavřených nádobách v chladu a suchu.

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· 7.3 **Specifické konečné / specifická konečná použití** Další relevantní informace nejsou k dispozici.

ODDÍL 8: Omezování expozice / osobní ochranné prostředky

· **Technická opatření:** Žádné další údaje, viz bod 7.

· 8.1 Kontrolní parametry

· **Kontrolní parametry:**

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NPK	Krátkodobá hodnota: 20 mg/m ³ Dlouhodobá hodnota: 10 mg/m ³ D, I, P
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· **Další upozornění:** Jako podklad sloužily při zhotovení platné listiny.

· 8.2 Omezování expozice

· **Osobní ochranné prostředky:**

· **Všeobecná ochranná a hygienická opatření:**

Zdržovat od potravin, nápojů a krmiv.

Zašpiněné, nasáknuté šaty ihned vysvléci.

Před přestávkami a po práci umýt ruce.

Ochranný oděv odděleně přechovávat.

Zamezit styku s pokožkou a zrakem.

· **Ochrana dýchacích orgánů:**

Při krátkodobém nebo nízkém zatížení použít dýchací přístroj s filtrem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.

· **Ochrana rukou:**



Ochranné rukavice

Materiál rukavic musí být nepropustný a odolný proti produktu / látce / směsi.

Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.

Výběr materiálu rukavic proveďte podle času průniku, permeability a degradace.

· **Materiál rukavic**

Správný výběr rukavic nezávisí jen na materiálu, ale také na dalších kritériích, která se liší podle výrobce.

· **Doba průniku materiálem rukavic**

Je nutno u výrobce rukavic zjistit a dodržovat přesné časy průniku materiálem ochranných rukavic.

· **Ochrana očí:**



Uzavřené ochranné brýle

ODDÍL 9: Fyzikální a chemické vlastnosti

· **9.1 Informace o základních fyzikálních a chemických vlastnostech**

· **Všeobecné údaje**

· **Vzhled:**

Skupenství:

Tekutina

Barva:

Podle označení produktu

(pokračování na straně 5)

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· Zápach:	<i>Etherovitý</i>
· Prahová hodnota zápachu:	<i>Není určeno.</i>
· Hodnota pH:	<i>Není určeno.</i>
· Změna stavu	
Bod tání/bod tuhnutí:	<i>-35,5 °C</i>
Počáteční bod varu a rozmezí bodu varu:	<i>84 °C</i>
· Bod vzplanutí:	<i>13 °C</i>
· Hořlavost (pevné látky, plyny):	<i>Nedá se použít.</i>
· Zápalná teplota:	<i>440 °C</i>
· Teplota rozkladu:	<i>Není určeno.</i>
· Teplota samovznícení:	<i>Není určeno.</i>
· Výbušné vlastnosti:	<i>I když produktu nehrozí nebezpečí exploze, je přesto možné nebezpečí exploze ve směsi par se vzduchem.</i>
· Meze výbušnosti:	
Dolní mez:	<i>6,2 Vol %</i>
Horní mez:	<i>16 Vol %</i>
· Tlak páry při 20 °C:	<i>87 hPa</i>
· Hustota při 20 °C:	<i>1,25 g/cm³</i>
· Relativní hustota	<i>Není určeno.</i>
· Hustota páry:	<i>Není určeno.</i>
· Rychlost odpařování	<i>Není určeno.</i>
· Rozpustnost ve / směsitelnost s vodě při 20 °C:	<i>8 g/l</i>
· Rozdělovací koeficient: n-oktanol/voda:	<i>Není určeno.</i>
· Viskozita:	
Dynamicky při 20 °C:	<i>0,8 mPas</i>
Kinematicky:	<i>Není určeno.</i>
· Obsah ředidel:	
VOC (EC)	<i>0,00 %</i>
Obsah netěkavých složek:	<i>0,0 %</i>
· 9.2 Další informace	<i>Další relevantní informace nejsou k dispozici.</i>

ODDÍL 10: Stálost a reaktivita

- **10.1 Reaktivita** Další relevantní informace nejsou k dispozici.
- **10.2 Chemická stabilita**
- **Termický rozklad / Podmínky, kterých je nutno se vyvarovat:**
Nedochází k rozkladu při doporučeném způsobu použití.
- **10.3 Možnost nebezpečných reakcí** Žádné nebezpečné reakce nejsou známy.
- **10.4 Podmínky, kterým je třeba zabránit** Další relevantní informace nejsou k dispozici.
- **10.5 Neslučitelné materiály:** Další relevantní informace nejsou k dispozici.
- **10.6 Nebezpečné produkty rozkladu:** Nejsou známy žádné nebezpečné produkty při rozkladu.

CZ

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ODDÍL 11: Toxikologické informace

11.1 Informace o toxikologických účincích

Akutní toxicita

Zdraví škodlivý při požití.

Zařazení relevantní hodnoty LD/LC 50:

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Orálně	LD50	670 mg/kg (rat)
Pokožkou	LD50	2.800 mg/kg (rat)

Primární dráždivé účinky:

Žíravost/dráždivost pro kůži

Dráždí kůži.

Vážné poškození očí / podráždění očí

Způsobuje vážné podráždění očí.

Senzibilizace dýchacích cest / senzibilizace kůže

Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci)

Mutagenita v zárodečných buňkách Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Karcinogenita

Může vyvolat rakovinu.

Toxicita pro reprodukci Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Toxicita pro specifické cílové orgány – jednorázová expozice

Může způsobit podráždění dýchacích cest.

Toxicita pro specifické cílové orgány – opakovaná expozice

Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Nebezpečnost při vdechnutí Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

ODDÍL 12: Ekologické informace

12.1 Toxicita

Aquatická toxicita: Další relevantní informace nejsou k dispozici.

12.2 Perzistence a rozložitelnost Další relevantní informace nejsou k dispozici.

12.3 Bioakumulační potenciál Další relevantní informace nejsou k dispozici.

12.4 Mobilita v půdě Další relevantní informace nejsou k dispozici.

Další ekologické údaje:

Všeobecná upozornění:

Třída ohrožení vody 3 (zařazení v listině): silně ohrožuje vodu

Nesmí vniknout do spodní vody, povodí nebo do kanalizace, ani v malých množstvích.

Ohrožuje pitnou vodu už při proniknutí nepatrného množství do zeminy.

12.5 Výsledky posouzení PBT a vPvB

PBT: Nedá se použít.

vPvB: Nedá se použít.

12.6 Jiné nepříznivé účinky Další relevantní informace nejsou k dispozici.

ODDÍL 13: Pokyny pro odstraňování

13.1 Metody nakládání s odpady

Doporučení: Nesmí se odstraňovat společně s odpady z domácnosti. Nepřipustit únik do kanalizace.

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- **Kontaminované obaly:**
- **Doporučení:** Odstranění podle příslušných předpisů.

ODDÍL 14: Informace pro přepravu

· 14.1 UN číslo

· ADR, IMDG, IATA

UN1184

· 14.2 Oficiální (OSN) pojmenování pro přepravu

· ADR

1184 ETHYLENDICHLORID

· IMDG, IATA

ETHYLENE DICHLORIDE

· 14.3 Třída/třídy nebezpečnosti pro přepravu

· ADR



· třída

3 Hořlavé kapaliny

· Etiketa

3+6.1

· IMDG



· Class

3 Hořlavé kapaliny

· Label

3/6.1

· IATA



· Class

3 Hořlavé kapaliny

· Label

3 (6.1)

· 14.4 Obalová skupina

· ADR, IMDG, IATA

II

· 14.5 Nebezpečnost pro životní prostředí:

Nedá se použít.

· 14.6 Zvláštní bezpečnostní opatření pro uživatele

Varování: Hořlavé kapaliny

· Kemlerovo číslo:

336

· EMS-skupina:

3-03

· Segregation groups

Liquid halogenated hydrocarbons

· Stowage Category

B

· Stowage Code

SW2 Clear of living quarters.

· 14.7 Hromadná přeprava podle přílohy II úmluvy

MARPOL a předpisu IBC

Nedá se použít.

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· **Přeprava/další údaje:**

· **ADR**

· **Omezené množství (LQ)**

1L

· **Vyňatá množství (EQ)**

Kód: E2

Nejvyšší čisté množství na vnitřní obal: 30 ml

Nejvyšší čisté množství na vnější obal: 500 ml

· **Přepavní kategorie**

2

· **Kód omezení pro tunely:**

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

ODDÍL 15: Informace o předpisech

· **15.1 Předpisy týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi**

· **Rady 2012/18/EU**

· **Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I** Látka neobsažena.

· **Kategorie Seveso P5c** HOŘLAVÉ KAPALINY

· **Kvalifikační množství (v tunách) při uplatnění požadavků pro podlimitní množství 5.000 t**

· **Kvalifikační množství (v tunách) při uplatnění požadavků pro nadlimitní množství 50.000 t**

· **SEZNAM LÁTEK PODLEHAJÍCÍCH POVOLENÍ (PŘÍLOHA XIV)**

Sunset date: 2017-11-22

· **Rady (ES) č. 1907/2006 PŘÍLOHA XVII** Omezující podmínky: 3, 28, 40

· **Rady (EU) č. 649/2012**

Annex I Part 1

Annex I Part 3

· **Národní předpisy:**

· **Upozornění na omezení práce:**

Pracovníci nesmí přijít do styku s touto nebezpečnou látkou. V jednotlivých případech se mohou úřady povolit vyjímku.

· **Jiná ustanovení, omezení a zákazy**

· **Látky vzbuzující mimořádné obavy (SVHC) podle REACH, čl. 57**

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· **15.2 Posouzení chemické bezpečnosti:** Posouzení chemické bezpečnosti nebylo provedeno.

ODDÍL 16: Další informace

Údaje se opírají o dnešní stav našich vědomostí, nepředstavují však záruku vlastností produktu a nevznikají tak žádné smluvní právní vztahy.

· **Zkratky a akronymy:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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*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**SVHC: Substances of Very High Concern**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 2: Hořlavé kapaliny – Kategorie 2**Acute Tox. 4: Akutní toxicita – Kategorie 4**Skin Irrit. 2: Žíravost/dráždivost pro kůži – Kategorie 2**Eye Irrit. 2: Vážné poškození očí / podráždění očí – Kategorie 2**Carc. 1B: Karcinogenita – Kategorie 1B**STOT SE 3: Toxicita pro specifické cílové orgány (jednorázová expozice) – Kategorie 3*

CZ

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

- **1.1 Productidentificatie**
- **Handelsnaam:** FORMVAR SOLUTION 0.25%
- **Artikelnummer:** 15810
- **CAS-nummer:**
107-06-2
- **EC-nummer:**
203-458-1
- **Catalogusnummer:**
602-012-00-7
- **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: sgkcck@aol.com
www.emsdiasum.com
- **Aurion**
Binnenhaven 5
6709 PD Wageningen
The Netherlands
Tel: 31 317 415094
Fax: 31 317 415955
email: info@aurion.nl
- **Inlichtinggevendende 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**



GHS02 vlam

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



GHS08 gezondheidsgevaar

Carc. 1B H350 Kan kanker veroorzaken.



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.

(Vervolg op blz. 2)

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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 Explosieveilige elektrische-/ventilatie-/verlichtings- apparatuur gebruiken.

P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen/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 Chemische karakterisering: Stoffen

· CAS-Nr. omschrijving

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· Identificatienummer(s)

· **EC-nummer:** 203-458-1

· **Catalogusnummer:** 602-012-00-7

(Vervolg op blz. 3)

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· **SVHC**

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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 de vereiste onmiddellijke medische verzorging en speciale behandeling**

Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

· **5.1 Blusmiddelen**

· **Geschikte blusmiddelen:** CO₂, zand, bluspoeder. Geen water gebruiken.

· **Blusmiddelen die uit veiligheidsoogpunt niet geschikt zijn:** Krachtige waterstraal

· **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, beschermde uitrusting en noodprocedures**

Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

· **6.2 Milieuvoorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

· **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.

Niet met water of waterachtige reinigingsmiddelen wegspoelen.

· **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.

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.

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- **Informatie m.b.t. brand- en ontploffingsgevaar:**
*Onststekingsbronnen op afstand houden - niet roken.
 Maatregelen treffen tegen ontlading van statische elektriciteit.
 Ademhalingsstoestellen 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.*
- **7.3 Specifiek eindgebruik** *Geen verdere relevante informatie verkrijgbaar.*

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** *Geen aanvullende gegevens. Zie 7.*

· 8.1 Controleparameters

- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

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WGW	Lange termijn waarde: 7 mg/m ³
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- **Aanvullende gegevens:** *Als basis dienden lijsten die bij opstelling geldig waren.*

· 8.2 Maatregelen ter beheersing van blootstelling

· **Persoonlijke beschermingsvoorzieningen:**

· **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.*

· **Ademhalingsbescherming:**

- Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.*

· **Handbescherming:**



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 chemicaliën mengsel afgegeven worden.*

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

· **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.*

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· Oogbescherming:



Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vloeistof
Kleur:	Volgens de produktbeschrijving
Geur:	Etherachtig
Geurdrempelwaarde:	Niet bepaald.

· pH-waarde: Niet bepaald.

· Toestandsverandering

Smelt-/vriespunt:	-35,5 °C
Beginkookpunt en kooktraject:	84 °C

· Vlampunt: 13 °C

· Ontvlambaarheid (vast, gas): Niet bruikbaar.

· Ontstekingstemperatuur: 440 °C

· Ontledingstemperatuur: Niet bepaald.

· Zelfontbrandingstemperatuur: Niet bepaald.

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

· Ontploffingsgrenzen:

Onderste:	6,2 Vol %
Bovenste:	16 Vol %

· Dampspanning bij 20 °C: 87 hPa

Dichtheid bij 20 °C:	1,25 g/cm ³
Relatieve dichtheid	Niet bepaald.
Dampdichtheid	Niet bepaald.
Verdampingsnelheid	Niet bepaald.

· Oplosbaarheid in/mengbaarheid met

Water bij 20 °C: 8 g/l

· Verdelingscoëfficiënt: n-octanol/water: Niet bepaald.

· Viscositeit

Dynamisch bij 20 °C:	0,8 mPas
Kinematisch:	Niet bepaald.

· Oplosmiddelgehalte:

VOC (EG) 0,00 %

Gehalte aan vaste bestanddelen: 0,0 %

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· **9.2 Overige informatie** *Geen verdere relevante informatie verkrijgbaar.*

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 toxicologische effecten**
- **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.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen** *Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **Kankerverwekkendheid**
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.*
- **Gevaar bij inademing** *Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*

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.*
- **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)

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- Gevaar voor water klasse 3 (D) (Lijstclassificatie): gevaar voor water groot
 Niet lozen in grondwater, oppervlaktewater of riolering, ook niet in kleine hoeveelheden.
 Gevaar voor drinkwater zelfs bij het uitlopen van zeer geringe hoeveelheden in de ondergrond.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
 - **PBT:** Niet bruikbaar.
 - **zPzB:** Niet bruikbaar.
 - **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- **14.1 VN-nummer**
- **ADR, IMDG, IATA** UN1184
- **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**
- **ADR** 1184 ETHYLEENDICHLORIDE
- **IMDG, IATA** ETHYLENE DICHLORIDE
- **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

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· 14.5 Milieugevaren:	Niet bruikbaar.
· 14.6 Bijzondere voorzorgen voor de gebruiker	Waarschuwing: Brandbare vloeistoffen
· Kemler-getal:	336
· EMS-nummer:	3-03
· Segregation groups	Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code	Niet bruikbaar.
· Transport/verdere gegevens:	
· ADR	
· Beperkte hoeveelheden (LQ)	1L
· Uitgezonderde hoeveelheden (EQ)	Code: E2 Grootste netto hoeveelheid per binnenverpakking: 30 ml Grootste netto hoeveelheid per buitenverpakking: 500 ml
· Vervoerscategorie	2
· Tunnelbeperkingscode	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
· VN "Model Regulation":	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

De stof is niet aanwezig.

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

De stof is niet aanwezig.

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

De stof is niet aanwezig.

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

De stof is niet aanwezig.

· 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

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· **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 3, 28, 40

· **Verordening (EU) Nr. 649/2012**

Annex I Part 1

Annex I Part 3

· **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/bioacumulerend vermogen/ toxiciteit of persistentie)

· **Aanvullende voorschriften, beperkingen en verbodsverordeningen**

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

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· **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 européen sur le transport 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

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

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

- **1.1 Identificateur de produit**
- **Nom du produit:** FORMVAR SOLUTION 0.25%
- **Code du produit:** 15810
- **No CAS:**
107-06-2
- **Numéro CE:**
203-458-1
- **Numéro index:**
602-012-00-7
- **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: sgkcck@aol.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/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 clef.

P501 Éliminer le contenu/récipient 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 Caractérisation chimique: 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

· SVHC

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RUBRIQUE 4: Premiers secours

· 4.1 Description des 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.

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- **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, sable, poudre d'extinction. Ne pas utiliser d'eau.
- **Produits extincteurs déconseillés pour des raisons de sécurité:** Jet d'eau à grand débit
- **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:**
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.
Ne pas rincer à l'eau ou aux produits nettoyants aqueux.
- **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.
- **Préventions des incendies et des explosions:**
Tenir à l'abri des sources d'inflammation - ne pas fumer.
Prendre des mesures contre les charges électrostatiques.
Tenir des appareils de protection respiratoire prêts.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.
- **Indications concernant le stockage commun:** Pas nécessaire.

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- **Autres indications sur les conditions de stockage:**
Tenir les emballages hermétiquement fermés.
Stocker au frais et au sec dans des fûts bien fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**
Sans autre indication, voir point 7.

- **8.1 Paramètres de contrôle**

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

107-06-2 1,2-dichloroéthane

VME	Valeur à long terme: 40 mg/m ³ , 10 ppm
CIB	

- **Remarques supplémentaires:**
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Equipement de protection individuel:**
- **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

- **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.
- **Protection des yeux:**



Lunettes de protection hermétiques

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RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles

· Indications générales

· Aspect:

Forme:	Liquide
Couleur:	Selon désignation produit
Odeur:	Genre éther
Seuil olfactif:	Non déterminé.

· valeur du pH: Non déterminé.

· Changement d'état

Point de fusion/point de congélation:	-35,5 °C
Point initial d'ébullition et intervalle d'ébullition:	84 °C

· Point d'éclair 13 °C

· Inflammabilité (solide, gaz): Non applicable.

· Température d'inflammation: 440 °C

· Température de décomposition: Non déterminé.

· Température d'auto-inflammabilité: Non déterminé.

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

· Limites d'explosion:

Inférieure:	6,2 Vol %
Supérieure:	16 Vol %

· Pression de vapeur à 20 °C: 87 hPa

· Densité à 20 °C: 1,25 g/cm³

· Densité relative: Non déterminé.

· Densité de vapeur: Non déterminé.

· Taux d'évaporation: Non déterminé.

· Solubilité dans/miscibilité avec l'eau à 20 °C:

8 g/l

· Coefficient de partage: n-octanol/eau: Non déterminé.

· Viscosité:

Dynamique à 20 °C:	0,8 mPas
Cinématique:	Non déterminé.

· Teneur en solvants:

VOC (CE) 0,00 %

Teneur en substances solides: 0,0 %

· 9.2 Autres informations Pas d'autres informations importantes disponibles.

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.

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- **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 effets toxicologiques

- **Toxicité aiguë**
Nocif en cas d'ingestion.

· Valeurs LD/LC50 déterminantes pour la classification:

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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.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **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 - exposition unique**
Peut irriter les voies respiratoires.
- **Toxicité spécifique pour certains organes cibles - 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.

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.
- **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.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

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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.

RUBRIQUE 14: Informations relatives au transport

- | | |
|--|--|
| <ul style="list-style-type: none"> · 14.1 Numéro ONU · ADR, IMDG, IATA | <p style="margin: 0;">UN1184</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG, IATA | <p style="margin: 0;">1184 DICHLORURE D'ÉTHYLÈNE
ETHYLENE DICHLORIDE</p> |
| <ul style="list-style-type: none"> · 14.3 Classe(s) de danger pour le transport · ADR | <div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 10px 0 0 20px;">· Classe</p> <p style="margin: 0 0 0 20px;">· Étiquette</p> <p style="margin: 0 0 0 20px;">3 Liquides inflammables.
3+6.1</p> |
| <ul style="list-style-type: none"> · IMDG | <div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 10px 0 0 20px;">· Class</p> <p style="margin: 0 0 0 20px;">· Label</p> <p style="margin: 0 0 0 20px;">3 Liquides inflammables.
3/6.1</p> |
| <ul style="list-style-type: none"> · IATA | <div style="display: flex; align-items: center; gap: 10px;">   </div> <p style="margin: 10px 0 0 20px;">· Class</p> <p style="margin: 0 0 0 20px;">· Label</p> <p style="margin: 0 0 0 20px;">3 Liquides inflammables.
3 (6.1)</p> |
| <ul style="list-style-type: none"> · 14.4 Groupe d'emballage · ADR, IMDG, IATA | <p style="margin: 0;">II</p> |
| <ul style="list-style-type: none"> · 14.5 Dangers pour l'environnement: | <p style="margin: 0;">Non applicable.</p> |
| <ul style="list-style-type: none"> · 14.6 Précautions particulières à prendre par l'utilisateur · Indice Kemler: · No EMS: · Segregation groups · Stowage Category | <p style="margin: 0;">Attention: Liquides inflammables.</p> <p style="margin: 0 0 0 20px;">336</p> <p style="margin: 0 0 0 20px;">3-03</p> <p style="margin: 0 0 0 20px;">Liquid halogenated hydrocarbons</p> <p style="margin: 0 0 0 20px;">B</p> |

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· Stowage Code	SW2 Clear of living quarters.
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC	Non applicable.
· Indications complémentaires de transport:	
· ADR	IL
· Quantités limitées (LQ)	Code: E2
· Quantités exceptées (EQ)	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
· IMDG	IL
· Limited quantities (LQ)	Code: E2
· Excepted quantities (EQ)	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)
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Sunset date: 2017-11-22

· RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3, 28, 40
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· Règlement (CE) N° 649/2012

Annex I Part 1

Annex I Part 3

- **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
--

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- **15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.**

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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 européen sur le transport 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

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

· **1.1 Produktidentifikator**

· **Handelsname:** FORMVAR SOLUTION 0.25%

· **Artikelnummer:** 15810

· **CAS-Nummer:**

107-06-2

· **EG-Nummer:**

203-458-1

· **Indexnummer:**

602-012-00-7

· **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: sgkcck@aol.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 Gesundheitsgefährlich 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 Gesundheitsgefährlich 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 Explosionssgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.

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

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

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 Chemische Charakterisierung: Stoffe

· CAS-Nr. Bezeichnung

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

- **SVHC**

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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, Sand, Löschpulver. Kein Wasser verwenden.
- **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl
- **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:** 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.
Nicht mit Wasser oder wäßrigen Reinigungsmitteln wegspülen.
- **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

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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.
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.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

- **8.1 Zu überwachende Parameter**

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

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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**

- **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 unluftunabhängiges Atemschutzgerät verwenden.

- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.

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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.

- **Augenschutz:**



Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

- **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

- **Allgemeine Angaben**

- **Aussehen:**

Form:	Flüssigkeit
Farbe:	Gemäß Produktbezeichnung
Geruch:	Etherartig
Geruchsschwelle:	Nicht bestimmt.

- **pH-Wert:** Nicht bestimmt.

- **Zustandsänderung**

Schmelzpunkt/Gefrierpunkt:	-35,5 °C
Siedebeginn und Siedebereich:	84 °C

- **Flammpunkt:** 13 °C

- **Entzündbarkeit (fest, gasförmig):** Nicht anwendbar.

- **Zündtemperatur:** 440 °C

- **Zersetzungstemperatur:** Nicht bestimmt.

- **Selbstentzündungstemperatur:** Nicht bestimmt.

- **Explosive Eigenschaften:** Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.

- **Explosionsgrenzen:**

Untere:	6,2 Vol %
Obere:	16 Vol %

- **Dampfdruck bei 20 °C:** 87 hPa

Dichte bei 20 °C:	1,25 g/cm ³
Relative Dichte	Nicht bestimmt.
Dampfdichte	Nicht bestimmt.
Verdampfungsgeschwindigkeit	Nicht bestimmt.

- **Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C:** 8 g/l

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- | | |
|--|-----------------|
| · Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt. | |
| · Viskosität: | |
| Dynamisch bei 20 °C: | 0,8 mPas |
| Kinematisch: | Nicht bestimmt. |
| · Lösemittelgehalt: | |
| VOC (EU) | 0,00 % |
| · Festkörpergehalt: 0,0 % | |
| · 9.2 Sonstige Angaben Keine weiteren relevanten Informationen verfügbar. | |

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.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
Gesundheitsschädlich bei Verschlucken.

- **Einstufungsrelevante LD/LC50-Werte:**

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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.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** 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.

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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.
- **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.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

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.

ABSCHNITT 14: Angaben zum Transport

- | | |
|---|--|
| <ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA | <p>UN1184</p> |
| <ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · IMDG, IATA | <p>1184 ETHYLENDICHLORID
ETHYLENE DICHLORIDE</p> |
| <ul style="list-style-type: none"> · 14.3 Transportgefahrenklassen | |
| <ul style="list-style-type: none"> · ADR | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> |
| <ul style="list-style-type: none"> · Klasse · Gefahrzettel | <p>3 Entzündbare flüssige Stoffe
3+6.1</p> |
| <ul style="list-style-type: none"> · IMDG | |
| <ul style="list-style-type: none"> · Class | <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>3 Entzündbare flüssige Stoffe</p> |

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· Label	3/6.1
· IATA	
	
· Class	3 Entzündbare flüssige Stoffe
· Label	3 (6.1)
· 14.4 Verpackungsgruppe	
· ADR, IMDG, IATA	II
· 14.5 Umweltgefahren:	Nicht anwendbar.
· 14.6 Besondere Vorsichtsmaßnahmen für den Verwender	Achtung: Entzündbare flüssige Stoffe
· Kemler-Zahl:	336
· EMS-Nummer:	3-03
· Segregation groups	Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code	Nicht anwendbar.
· 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

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 · **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen:** 3, 28, 40

 · **Verordnung (EU) Nr. 649/2012**

Annex I Part 1

Annex I Part 3

 · **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	99,8

 · **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**

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 · **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 européen sur le transport 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

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

Scheda di dati di sicurezza
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SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** FORMVAR SOLUTION 0.25%

· **Articolo numero:** 15810

· **Numero CAS:**

107-06-2

· **Numeri CE:**

203-458-1

· **Numero indice:**

602-012-00-7

· **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: sgkcck@aol.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.

Skin Irrit. 2 H315 Provoca irritazione cutanea.

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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 calde, scintille, fiamme libere o altre fonti di accensione. Non 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): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/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 Caratteristiche chimiche: Sostanze**

· **Numero CAS**

107-06-2 1,2-dicloroetano

· **Numeri di identificazione**

· **Numeri CE:** 203-458-1

· **Numero indice:** 602-012-00-7

· **SVHC**

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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 antincendio

· **5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:** *CO2, sabbia, polvere. Non usare acqua.*

· **Mezzi di estinzione inadatti per motivi di sicurezza:** *Getti d'acqua*

· **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:** *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.

Non dilavare con acqua o detergenti liquidi.

· **6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un 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.

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.

Adottare provvedimenti contro cariche elettrostatiche.

Tener pronto il respiratore.

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

SEZIONE 8: Controllo dell'esposizione/protezione individuale

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.
- **8.1 Parametri di controllo**

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

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TWA	Valore a lungo termine: 40,5 mg/m ³ , 10 ppm
A4	

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

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **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.

· **Maschera protettiva:**

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

· **Guanti protettivi:**



Guanti protettivi

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

A causa della mancanza di tests 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.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

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· **Occhiali protettivi:**

Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

Forma:

Liquido

Colore:

In conformità con la denominazione del prodotto

· Odore:

Simile all'etere

· Soglia olfattiva:

Non definito.

· valori di pH:

Non definito.

· Cambiamento di stato

Punto di fusione/punto di congelamento: -35,5 °C

Punto di ebollizione iniziale e intervallo di ebollizione: 84 °C

· Punto di infiammabilità:

13 °C

· Infiammabilità (solidi, gas):

Non applicabile.

· Temperatura di accensione:

440 °C

· Temperatura di decomposizione:

Non definito.

· Temperatura di autoaccensione:

Non definito.

· Proprietà esplosive:

Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapore/aria esplosive.

· Limiti di infiammabilità:

Inferiore:

6,2 Vol %

Superiore:

16 Vol %

· Tensione di vapore a 20 °C:

87 hPa

· Densità a 20 °C:

1,25 g/cm³

· Densità relativa

Non definito.

· Densità di vapore:

Non definito.

· Velocità di evaporazione

Non definito.

· Solubilità in/Miscibilità con acqua a 20 °C:

8 g/l

· Coefficiente di ripartizione: n-ottanolo/acqua: Non definito.

· Viscosità:

Dinamica a 20 °C:

0,8 mPas

Cinematica:

Non definito.

· Tenore del solvente:

VOC (CE)

0,00 %

· Contenuto solido:

0,0 %

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· 9.2 Altre informazioni

Non sono disponibili altre informazioni.

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 sugli effetti tossicologici**
- **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/irritazione cutanea**
Provoca irritazione cutanea.
- **Lesioni oculari gravi/irritazioni oculari gravi**
Provoca grave irritazione oculare.
- **Sensibilizzazione respiratoria o cutanea**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle 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.
- **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.

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.

(continua a pagina 7)

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

Stampato il: 16.10.2018

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(Segue da pagina 6)

- **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.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

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.

SEZIONE 14: Informazioni sul trasporto

- | | |
|--|---------------------------|
| · 14.1 Numero ONU | |
| · ADR, IMDG, IATA | UN1184 |
| · 14.2 Nome di spedizione dell'ONU | |
| · ADR | 1184 DICLORURO DI ETILENE |
| · IMDG, IATA | ETHYLENE DICHLORIDE |
| · 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) |

(continua a pagina 8)

Scheda di dati di sicurezza
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· 14.4 Gruppo di imballaggio · ADR, IMDG, IATA	II
· 14.5 Pericoli per l'ambiente:	Non applicabile.
· 14.6 Precauzioni speciali per gli utilizzatori · Numero Kemler: · Numero EMS: · Segregation groups · Stowage Category · Stowage Code	Attenzione: Liquidi infiammabili 336 3-03 Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· 14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR · Quantità limitate (LQ) · Quantità esenti (EQ) · Categoria di trasporto · Codice di restrizione in galleria	1L Codice: E2 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 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 "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, 40

- Regolamento (UE) N. 649/2012

Annex I Part 1
Annex I Part 3

- 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.

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

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Revisione: 16.10.2018

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

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

107-06-2	1,2-dicloroetano
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· **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 européen sur le transport 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

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

기압점: 2018.10.16

개정: 2018.10.16

1 화학제품과 회사에 관한 정보

- **제품 식별자**
 - **제품명:** FORMVAR SOLUTION 0.25%
 - **상품번호:** 15810
 - **CAS-번호**
107-06-2
 - **EC 의번호:**
203-458-1
 - **색인 번호:**
602-012-00-7
 - **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
 - **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
 - **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
 - **제조사/수입자/유통업자 정보:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.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**



화염

인화성 액체 – 구분 2

H225 고인화성 액체 및 증기



건강에 위험

발암성 – 구분 1B

H350 암을 일으킬 수 있음

(2 쪽에 계속)

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제품명: FORMVAR SOLUTION 0.25%

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급성 독성 - 경구 - 구분 4 H302 삼키면 유해함
 피부 부식성/피부 자극성 - 구분 2 H315 피부에 자극을 일으킴
 심한 눈 손상성/눈 자극성 - 구분 2 H319 눈에 심한 자극을 일으킴
 특정표적장기 독성 - 1회 노출 - 구분 3 H335 호흡기계 자극을 일으킬 수 있음

· 라벨표기 요소

· GHS 라벨 요소

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

· 그림문자



GHS02 GHS07 GHS08

· 신호어 위험

· **상표상에명확히위험성이표시된성분:**

1,2-이염화에탄

· **유해.위험 문구**

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

· **예방조치 문구**

열·스파크·화염·고열로부터 멀리하십시오 - 금연
 폭발 방지용 전기·환기·조명·장비를 사용하십시오.
 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗으십시오. 피부를 물로 씻으십시오/샤워하십시오.
 눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.
 잠금장치가 있는 저장장소에 저장하십시오.
 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 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

· **화 학 적 특 성:** 화학물질
 · CAS-번호표시
 107-06-2 1,2-이염화에탄
 · 식별 번호
 · EC 의번호: 203-458-1
 · 색인 번호: 602-012-00-7

KR

(3 쪽에계속)

물질안전보건자료

GHS에 따라

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4 응급조치 요령

· 응급조치요령 내용

· 일반적 정보:

중독 증상은 몇 시간 이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간 동안은 의료진의 관찰을 받아야 한다.

· **흡입했을 때:** 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.

· **피부에 접촉했을 때:** 즉시 물과 비누로 씻고 잘 행군다.

· **눈에 들어갔을 때:** 흐르는 물에 눈을 몇 분 동안 씻어 내고 나서, 증상이 지속될 경우에는 의사와 상담한다.

· **먹었을 때:** 즉시 의사의 도움을 구한다.

· 기타 의사의 주의사항:

· **가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.

· **즉각적인 의료처리 및 특별처리가 필요함을 시사하는 징후** 추가적인 정보가 존재하지 않습니다.

5 폭발·화재시 대처방법

· 소화제

· **적절한 소화제:** 이산화탄소, 모래, 석회가루를 사용하고, 물을 사용하지 않는다.

· **부적절한 소화제:** 플레트용 물

· **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.

· **소방관에 대한 권고사항**

· **화재 진압 시 착용할 보호구 및 예방조치:** 특별한 조치가 필요없음.

6 누출 사고 시 대처방법

· **개인적 예방조치, 보호장비 및 응급처리 절차** 안전장비 착용하고, 무방비 의사람은 격리시킨다.

· **환경 관련 예방조치:** 하수도망/해수면위의물/지하수로도달하지않게한다.

· 밀폐 및 정화 방법과 소재:

액체가 혼합된 물질 (모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.

항목 13에 따라 오염된 물질을 쓰레기로 처분한다.

충분한 환기가 되도록 한다.

물이나 묽은 세척제로 씻어 내지 마십시오

· 타 섹션 참조

안전관리에 대한 정보는 제7장을 참고하십시오.

개인보호장비에 대한 정보는 제8장을 참고하십시오.

쓰레기처리에 대한 정보는 제13장을 참고하십시오.

7 취급 및 저장방법

· 취급:

· 안전 취급을 위한 예방조치

작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.

조심스럽게 용기를 개봉하거나 취급한다.

연무질이 형성되는 것을 피한다.

· 화재 및 폭발 사고 예방대책에 관한 정보:

발화요소는 멀리 둔다-금연.

정전기의 충전으로부터 보호한다.

호흡보호장비를 항상 비치한다.

(4 쪽에 계속)

물질안전보건자료 GHS에 따라

기압점: 2018.10.16

개정: 2018.10.16

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(3 쪽부터계속)

- 혼합위험성 등 안전 저장 조건
- 보관:
 - 안전한 저장 방법: 차 가운 장소에 보관한다.
 - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필 요없음
 - 보관 조건에 관한 추가적인 정보:
 - 용기를새지않게밀폐한채보관한다.
 - 밀폐된 용기속에서늘 하고건 조 하게보관 한다.
 - 구체적 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이상 의자료는 없음. 항 목 7 을 참고하시 오.
- 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

107-06-2 1,2-이염화어탄

TLV (KR)	장기간의값: 10 ppm
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: 40 mg/m ³ , 10 ppm

· 추가 정보: 제 조 할 당시에 유 효 한 목 록 을 기 초 로 사 용 했 다.

- 노출 통제
- 개인 보호구

· 일반적보호조치및위생조치:

- 식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.
- 더러워지거나음료수가 묻은 옷은 즉시 탈의한다.
- 휴식전이나 작업이 끝날때마다 손을 씻는다.
- 방호복은 따로보관한다.
- 눈과 피부와의 접촉은 피한다.

· 호흡기 보호:

단 시간 또는 경미한 오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.

· 손 보호:



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율 과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의재료

적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선택되어야한다.

· 장갑 재료 의 투과 시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

(5 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2018.10.16

개정: 2018.10.16

제품명: FORMVAR SOLUTION 0.25%

· **눈 보호:**

(4 쪽부터계속)



· **확조이는보안경**

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: 84 °C

· 인화점: 13 °C

· 인화성(고체, 기체): 해당사항 없음.

· 점화온도: 440 °C

· 분해 온도: 알맞지않다.

· 자기점화: 알맞지않다.

· **폭발위험:** 이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

· **인화 또는 폭발 범위의 상한/하한**

· 아래로: 6.2 Vol %

· 위로: 16 Vol %

· 증기압 의경우 20 °C: 87 hPa

· 밀도 의경우 20 °C: 1.25 g/cm³

· 비중: 알맞지않다.

· 증기밀도: 알맞지않다.

· 증발 속도: 알맞지않다.

· **용해도:**

· 물 의경우 20 °C: 8 g/l

· n 옥탄올/물 분배계수: 알맞지않다.

· **점도:**

· 역학성 의경우 20 °C: 0.8 mPas

· 동점성: 알맞지않다.

· **용매내용물**

· VOC (EU) 0.00 %

· 고체의 함량: 0.0 %

(6 쪽에계속)

물질안전보건자료

GHS에 따라

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(5 쪽부터계속)

· 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: 피부와접막을자극한다.
- 심한 눈 손상 또는 자극성: 자극
- 감각화: 민감한영향이없는것으로알려져있다.
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
발암성 - 구분 1B

12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:
수질오염등급 3 (목록분류): 심하게수질오염이된
지하수나, 하천으로또는 하수도망에도달하지않게한다. 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.

KR
(7 쪽에계속)

기압점: 2018.10.16

개정: 2018.10.16




제품명: FORMVAR SOLUTION 0.25%

(6 쪽부터계속)

13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와 함께 처리되어서는 안 된다. 하수도망으로 유입되어서는 안 된다.
- 비위생적 포장:
- 권고: 당국의 지침에 입각한 쓰레기 처리.

14 운송에 필요한 정보

· 유엔 번호 · ADR, IMDG, IATA	UN1184
· UN 적정 선적명 · ADR · IMDG, IATA	1184 ETHYLENE DICHLORIDE ETHYLENE DICHLORIDE
· 교통 위험 클래스 · ADR	
	
· 등급 · 위험물 라벨	3 발화성용액 3+6.1
· IMDG	
	
· Class · Label	3 발화성용액 3/6.1
· IATA	
	
· Class · Label	3 발화성용액 3 (6.1)
· 용기등급 · ADR, IMDG, IATA	II
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치 · 위험 코드: · EMS-번호: · Segregation groups · Stowage Category	경고: 발화성용액 336 3-03 Liquid halogenated hydrocarbons B

(8 쪽에계속)

물질안전보건자료

GHS에 따라

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(7 쪽부터계속)

· Stowage Code	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)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· 운송 구분 · 터널 제한 코드	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:	성분이포함되어있지않다
· 허가대상물질:	성분이포함되어있지않다
· 관리대상유해물질:	107-06-2 1,2-이염화에탄
· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률	
· Korean Existing Chemical Inventory	KE-10121
· 화학물질관리법	
· 사고대비물질	성분이포함되어있지않다
· 금지물질	성분이포함되어있지않다
· 제한물질	성분이포함되어있지않다
· 유독물질	107-06-2 1,2-이염화에탄
· 허가물질	107-06-2 1,2-이염화에탄
· GHS 라벨 요소	
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.	

(9 쪽에계속)

물질안전보건자료 GHS에 따라

기압점: 2018.10.16

개정: 2018.10.16

제품명: FORMVAR SOLUTION 0.25%

(8 쪽부터계속)

· **그림문자**



GHS02 GHS07 GHS08

· **신호어 위험**

· **상표상에명확히위험성이표시된성분:**

1,2-이염화에탄

· **유해.위험 문구**

고인화성 액체 및 증기

삼키면 유해함

피부에 자극을 일으킴

눈에 심한 자극을 일으킴

압을 일으킬 수 있음

호흡기계 자극을 일으킬 수 있음

· **예방조치 문구**

열·스파크·화염·고열로부터 멀리하시오 - 금연

폭발 방지용 전기·환기·조명·장비를 사용하시오.

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

눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하시오. 계속 씻으시오.

잠금장치가 있는 저장장소에 저장하시오.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· **국내규정:**

· **사용제한에 대한 정보:**

노동자들은이러한위험물질을내버리지말아야한다. 개별적인경우에관청은예외를허가할수있다.

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

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

· **최초 작성일자:** 2018.10.16

· **개정 횟수 및 최종 개정일자:** 1 / 2018.10.16

· **약어와 두문자어:**

ADR: Accord européen sur le transport 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

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

物質安全資料表

根據 GB/T 16483-2008, GB/T 17519-2013

打印日期 2018.10.16

在 2018.10.16 審核

1 化學品及企業標識

- 產品識別者
- 化學品中文(英文)名稱, 化學品俗名或商品名: FORMVAR SOLUTION 0.25%
- 商品編號: 15810
- CAS 編號:
107-06-2
- 歐盟編號:
203-458-1
- 歐盟編號:
602-012-00-7
- 相應純物質或者混合物的相關下位用途及禁止用途 無相關詳細資料。
- 原材料的應用/準備工作進行 實驗室化學物
- 安全技術說明書內供應商詳細信息
- 企業名稱:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- 可獲取更多資料的部門: Product safety department
- 緊急聯繫電話號碼:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 危險性概述

· 緊急情況概述:

根據產品規格, 液體, 高度易燃液體和蒸氣。吞食有害。皮膚接觸可能有害。造成皮膚刺激。造成嚴重眼睛刺激。可能致癌。可能造成呼吸道刺激。

· GHS危險性類別



火焰

易燃液體 第2級

H225 高度易燃液體和蒸氣



健康危險

致癌物質 第1B級

H350 可能致癌



急毒性物質(吞食) 第4級

H302 吞食有害

腐蝕/刺激皮膚物質 第2級

H315 造成皮膚刺激

嚴重損傷/刺激眼睛物質 第2A級

H319 造成嚴重眼睛刺激

特定標的器官系統毒性物質(單一暴露) 第3級

H335 可能造成呼吸道刺激

急毒性物質(皮膚) 第5級

H313 皮膚接觸可能有害

(在 2 頁繼續)

物質安全資料表

根據 GB/T 16483-2008, GB/T 17519-2013

打印日期 2018.10.16

在 2018.10.16 審核

化學品中文(英文)名稱, 化學品俗名或商品名 : FORMVAR SOLUTION 0.25%

(在 1 頁繼續)

· 標籤因素

· GHS標籤元素 本化學物質根據化學物質分類及標記全球協調制度(GHS)進行了分類及標記。

· 圖示



GHS02 GHS07 GHS08

· 名稱 危險

· 標籤上辨別危險的成份:

1,2- 二氯化乙烯

· 危險字句

高度易燃液體和蒸氣

吞食有害

皮膚接觸可能有害

造成皮膚刺激

造成嚴重眼睛刺激

可能致癌

可能造成呼吸道刺激

· 警戒字句

· 預防措施

遠離熱源/火花/明火/熱表面。 - 禁止抽菸。

使用防爆的電氣/通風/照明/設備。

· 事故響應

如皮膚(或頭髮)沾染: 立即移除或脫掉所有沾染的衣物。用水沖洗/淋洗皮膚。

如進入眼睛: 用水小心清洗數分鐘。如帶隱形眼鏡且可方便地取出, 取出隱型眼鏡。繼續清洗。

· 安全貯存

加鎖存放。

· 廢棄處置

按照地方/區域/國家/國際法規處理內容物之廢棄/容器。

· 其他有害性

· PBT(殘留性、生物濃縮性、毒性物質) 及 vPvB(高殘留性、高生物濃縮性物質)評價結果

· PBT(殘留性、生物濃縮性、毒性物質) 不適用的

· vPvB(高殘留性、高生物濃縮性物質): 不適用的

3 成分/組成資訊

· 純品

· CAS號 化學名, 通用名

107-06-2 1,2- 二氯化乙烯

· 鑒別編號:

· 歐盟編號: 203-458-1

· 歐盟編號: 602-012-00-7

4 急救措施

· 應急措施要領

· 總說明: 中毒的症狀可能會在幾個小時以後才出現;因此在發生事故之後起碼要有 48 小時的醫療觀察。

· 吸入: 萬一病人不清醒時,請讓病人側躺以便移動。

· 皮膚接觸: 馬上用水和肥皂進行徹底的沖洗。

(在 3 頁繼續)

物質安全資料表

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打印日期 2018.10.16

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化學品中文(英文)名稱, 化學品俗名或商品名: FORMVAR SOLUTION 0.25%

(在 2 頁繼續)

- **眼睛接觸:** 張開眼睛在流水下沖洗數分鐘. 如果症狀仍然持續,請諮詢醫生.
- **食入:** 馬上召喚醫生.
- **給醫生的資料:**
- **最重要的急慢性症狀及其影響** 無相關詳細資料.
- **需要及時的醫療處理及特別處理的症狀** 無相關詳細資料.

5 消防措施

- **滅火方法**
- **滅火的方法和滅火劑:** 使用二氧化碳 (CO₂)、沙粒、滅火粉末. 切勿使用水.
- **為了安全,不適當的滅火劑會:** 使用全噴嘴的水
- **特別危險性** 無相關詳細資料.
- **特殊滅火方法**
- **消防人員特殊的防護裝備:** 沒有要求特別的措施.

6 洩漏應急處理

- **保護措施** 帶上保護儀器. 讓未受到保護的人們遠離.
- **環境保護措施:** 切勿讓其進入下水道/水面或地下水.
- **密封及淨化方法和材料:**
吸收液體粘合原料 (沙粒、矽藻土、酸性粘合劑、通用粘合劑、鋸屑).
根據第 13 條條款棄置受汙染物.
確保有足夠的通風裝置.
切勿用水或水溶清潔劑來沖清.
- **參照其他部分**
有關安全處理的資料請參閱第 7 節.
有關個人保護裝備的資料請參閱第 8 節.
有關棄置的資料請參閱第 13 節.

7 操作處置與儲存

- **操作處置**
- **儲存**
確保工作間有良好的通風/排氣裝置.
小心打開及處理貯藏器.
防止氣溶膠的形成.
- **有關火災及防止爆炸的資料:**
遠離火源 - 切勿吸煙.
防靜電.
提供呼吸保護裝置.
- **混合危險性等安全儲存條件**
- **儲存:**
· **儲存庫和容器須要達到的要求:** 儲存在陰涼的位置.
- **有關使用一個普通的儲存設施來儲存的資料:** 不需要.
- **有關儲存條件的更多資料:**
將容器密封.
儲存密封的貯藏器內,並放在陰涼、幹爽的位置.
- **具體的最終用戶** 無相關詳細資料.

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8 接觸控制和個體防護

· **工程控制方法:** 沒有進一步數據, 見第 7 項.

· **控制變數**

· **在工作場需要監控的限值成分**

107-06-2 1,2- 二氯化乙烯

PEL (TW) PC-TWA: 40 mg/m³, 10 ppm

OEL (CN) PC-STEL: 15 mg/m³

PC-TWA: 7 mg/m³

· **額外的資料:** 制作期間有效的清單將作為基礎來使用.

· **遺漏控制**

· **個人防護設備:**

· **一般保護和衛生措施:**

遠離食品、飲料和飼料.

立即除去所有的不潔的和被汙染的衣服.

在休息之前和工作完畢後請清洗雙手.

分開儲存保護性衣服.

避免和眼睛及皮膚接觸.

· **呼吸系統防護:**

如果會短暫接觸或在低汙染的情況下, 請使用呼吸過濾裝置. 如果會深入或較長時間接觸, 請使用獨立的呼吸保護裝置.

· **手防護:**



保護手套

手套的物料必須是不滲透性的, 且能抵抗該產品/物質/添加劑.

基於缺乏測試, 對於產品/制劑/化學混合物, 並不會提供手套材料的建議

選擇手套材料時, 請注意材料的滲透時間, 滲濾率和降解參數

· **手套材料** 選擇合適的手套不單取決於材料, 亦取決於質量特征, 以及來自哪一間生產廠家

· **滲入手套材料的時間** 請向勞保手套生產廠家獲取準確的破裂時間並觀察實際的破裂時間

· **眼睛防護:**



密封的護目鏡

9 理化特性

· **有關基本物理及化學特性的資訊**

· **一般說明**

· **外觀:**

· **形狀:** 液體

· **顏色:** 根據產品規格

· **氣味:** 類似醚

· **嗅覺閾限** 未決定.

· **pH值:** 未決定.

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· 條件的更改	
熔點:	-35.5 °C
沸點/初沸點和沸程:	84 °C
· 閃點:	13 °C
· 可燃性 (固體、氣體):	不適用的
· 點火溫度:	440 °C
· 分解溫度:	未決定.
· 自燃溫度:	未決定.
· 爆炸的危險性:	該產品並非爆炸性的然而有可能形成可爆炸性的空氣/蒸汽混合物
· 爆炸極限:	
較低:	6.2 Vol %
較高:	16 Vol %
· 蒸氣壓 在 20 °C:	87 hPa
· 密度 在 20 °C:	1.25 g/cm ³
· 相對密度	未決定.
· 蒸氣密度	未決定.
· 蒸發速率	未決定.
· 溶解性	
水 在 20 °C:	8 g/l
· n-辛醇/水分配係數:	未決定.
· 黏性:	
動態 在 20 °C:	0.8 mPas
運動學的:	未決定.
固體成份:	0.0 %
· 其他資訊	無相關詳細資料。

10 穩定性和反應性

- 反應性 無相關詳細資料。
- 穩定性
- 熱分解/要避免的情況: 如果遵照規格使用則不會分解.
- 有害反應可能性 未有已知的危險反應.
- 應避免的條件 無相關詳細資料。
- 不相容的物質: 無相關詳細資料。
- 危險的分解產物: 未知有危險的分解產品.

11 毒理學資訊

- 對毒性學影響的資訊
- 急性毒性:

· 與分類相關的 LD/ LC50 值:

107-06-2 1,2- 二氯化乙烯

口腔	LD50	670 mg/kg (rat)
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皮膚 LD50 2,800 mg/kg (rat)

- **主要的刺激性影響:**
- **皮膚:** 刺激皮膚和粘膜.
- **在眼睛上面:** 刺激的影響.
- **致敏作用:** 沒有已知的敏化影響.
- **對以下組別可能產生影響的資料:**
- **CMR作用 (致癌、導致基因突變、對生殖系統有害)**
- **致癌物質 第1B級**

12 生態學資訊

- **生態毒性**
- **水生毒性:** 無相關詳細資料。
- **持久性和降解性** 無相關詳細資料。
- **環境系統習性:**
- **潛在的生物累積性** 無相關詳細資料。
- **土壤內移動性** 無相關詳細資料。
- **額外的生態學資料:**
- **總括注解:**
- 水危害級別 3 (德國規例) (評估): 對水是極其危害的
- 即使是小量, 不要讓該產品接觸地下水、水道或汗水系統.
- 即使是極其小量的產品滲入地下也會對飲用水造成危險.
- **PBT(殘留性、生物濃縮性、毒性物質) 及 vPvB(高殘留性、高生物濃縮性物質) 評價結果**
- **PBT(殘留性、生物濃縮性、毒性物質)** 不適用的
- **vPvB(高殘留性、高生物濃縮性物質):** 不適用的
- **其他副作用** 無相關詳細資料。

13 廢棄處置

- **廢棄處置方法**
- **建議:** 不能將該產品和家居垃圾一起丟棄. 不要讓該產品接觸汗水系統.
- **受污染的容器和包裝:**
- **建議:** 必須根據官方的規章來丟棄.

14 運輸資訊

- **聯合國危險貨物編號(UN號)**
- **ADR, IMDG, IATA** UN1184
- **UN適當裝船名**
- **ADR** 1184 ETHYLENE DICHLORIDE
- **IMDG, IATA** ETHYLENE DICHLORIDE

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· 運輸危險等級

· ADR



· 級別 3 易燃液體
· 標籤 3+6.1

· IMDG



· Class 3 易燃液體
· Label 3/6.1

· IATA



· Class 3 易燃液體
· Label 3 (6.1)

· 包裝組別

· ADR, IMDG, IATA II

· 危害環境: 不適用的

· 用戶特別預防措施 警告: 易燃液體
· 危險編碼: 336
· EMS 號碼: 3-03
· Segregation groups Liquid halogenated hydrocarbons
· Stowage Category B
· Stowage Code SW2 Clear of living quarters.

· MARPOL73/78(針對船舶引起的海洋污染預防協約)
附件書2及根據IBC Code(國際裝船貨物編碼)的大量
運送 不適用的

· 運輸/額外的資料:

· 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

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· UN "標準規定": UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 法規資訊

· 對相應純物質或者混合物的安全、保健及環境法規/法律

· 中國現有化學物質名錄

有列出物質。

· GHS標識元素 本化學物質根據化學物質分類及標記全球協調制度(GHS)進行了分類及標記。

· 圖示



GHS02 GHS07 GHS08

· 名稱 危險

· 標籤上辨別危險的成份:

1,2- 二氯化乙烯

· 危險字句

高度易燃液體和蒸氣

吞食有害

皮膚接觸可能有害

造成皮膚刺激

造成嚴重眼睛刺激

可能致癌

可能造成呼吸道刺激

· 警戒字句

· 預防措施

遠離熱源/火花/明火/熱表面。 - 禁止抽菸。

使用防爆的電氣/通風/照明/設備。

· 事故響應

如皮膚(或頭髮)沾染: 立即移除或脫掉所有沾染的衣物。用水沖洗/淋洗皮膚。

如進入眼睛: 用水小心清洗數分鐘。如帶隱形眼鏡且可方便地取出, 取出隱形眼鏡。繼續清洗。

· 安全貯存

加鎖存放。

· 廢棄處置

按照地方/區域/國家/國際法規處理內容物之廢棄/容器。

· 國家的規章:

· 有關使用限制的資料: 禁止員工接觸該危險物料。在某些情況可由當局作出例外決定。

· 化學物質安全性評價: 尚未進行化學物質安全性評價

16 其他資訊

該資料是基於我們目前的知識。然而,這並不構成對任何特定產品特性的擔保並且不建立一個法律上有效的合同關係。

· 縮寫:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: 持久性生物累積性有毒物質

vPvB: very Persistent and very Bioaccumulative

易燃液體 第2級: Flammable liquids – Category 2

急毒性物質(吞食) 第4級: Acute toxicity – Category 4

急毒性物質(皮膚) 第5級: Acute toxicity – Category 5

腐蝕/刺激皮膚物質 第2級: Skin corrosion/irritation – Category 2

嚴重損傷/刺激眼睛物質 第2A級: Serious eye damage/eye irritation – Category 2A

致癌物質 第1B級: Carcinogenicity – Category 1B

特定標的器官系統毒性物質(單一暴露) 第3級: Specific target organ toxicity (single exposure) – Category 3

-TW-

Ficha de dados de segurança
em conformidade com 1907/2006/CE, Artigo 31°

data da impressão 16.10.2018

Revisão: 16.10.2018

SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

- **1.1 Identificador do produto**
- **Nome comercial:** FORMVAR SOLUTION 0.25%
- **Código do produto:** 15810
- **Nº CAS:**
107-06-2
- **Número CE:**
203-458-1
- **Número de índice:**
602-012-00-7
- **1.2 Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas**
Não existe mais nenhuma informação relevante disponível.
- **Utilização da substância / da preparação** Químicos de laboratório
- **1.3 Identificação do fornecedor da ficha de dados de segurança**
- **Fabricante/fornecedor:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Entidade para obtenção de informações adicionais:** Product safety department
- **1.4 Número de telefone de emergência:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECÇÃO 2: Identificação dos perigos

- **2.1 Classificação da substância ou mistura**
- **Classificação em conformidade com o Regulamento (CE) n.º 1272/2008**



GHS02 chama

Flam. Liq. 2 H225 Líquido e vapor facilmente inflamáveis.



GHS08 perigo para a saúde

Carc. 1B H350 Pode provocar cancro.



GHS07

Acute Tox. 4 H302 Nocivo por ingestão.

Skin Irrit. 2 H315 Provoca irritação cutânea.

Eye Irrit. 2 H319 Provoca irritação ocular grave.

STOT SE 3 H335 Pode provocar irritação das vias respiratórias.

- **2.2 Elementos do rótulo**
- **Rotulagem em conformidade com o Regulamento (CE) n.º 1272/2008**
A substância classificou-se e está etiquetado em conformidade com o regulamento CLP.

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· **Pictogramas de perigo**

GHS02 GHS07 GHS08

· **Palavra-sinal Perigo**· **Componentes determinantes para os perigos constantes do rótulo:**

1,2-dicloroetano

· **Advertências de perigo**

H225 Líquido e vapor facilmente inflamáveis.

H302 Nocivo por ingestão.

H315 Provoca irritação cutânea.

H319 Provoca irritação ocular grave.

H350 Pode provocar cancro.

H335 Pode provocar irritação das vias respiratórias.

· **Recomendações de prudência**

P210 Manter afastado do calor, superfícies quentes, faíscas, chamas abertas e outras fontes de ignição. Não fumar.

P241 Utilizar equipamento eléctrico/de ventilação/de iluminação/à prova de explosão.

P303+P361+P353 SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água/tomar um duche.

P305+P351+P338 SE ENTRAR EM CONTACTO COM OS OLHOS: enxaguar cuidadosamente com água durante vários minutos. Se usar lentes de contacto, retire-as, se tal lhe for possível. Continuar a enxaguar.

P405 Armazenar em local fechado à chave.

P501 Eliminar o conteúdo/recipiente de acordo com a legislação local/regional/nacional/internacional.

· **2.3 Outros perigos**· **Resultados da avaliação PBT e mPmB**· **PBT:** Não aplicável.· **mPmB:** Não aplicável.

SECÇÃO 3: Composição/informação sobre os componentes

· **3.1 Caracterização química: Substâncias**· **Designação CAS n°**

107-06-2 1,2-dicloroetano

· **Número(s) de identificação**· **Número CE:** 203-458-1· **Número de índice:** 602-012-00-7· **SVHC**

107-06-2 1,2-dicloroetano

SECÇÃO 4: Medidas de primeiros socorros

· **4.1 Descrição das medidas de primeiros socorros**· **Indicações gerais:**

Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.

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- **Em caso de inalação:**
Se a vítima estiver inconsciente, posicioná-la e transportá-la com estabilidade, deitada lateralmente.
- **Em caso de contacto com a pele:** *Lavar imediatamente com água e sabão e enxaguar abundantemente.*
- **Em caso de contacto com os olhos:**
Enxaguar os olhos durante alguns minutos sob água corrente, mantendo as pálpebras abertas. Em caso de persistência dos sintomas, consultar o médico.
- **Em caso de ingestão:** *Consultar imediatamente o médico*
- **4.2 Sintomas e efeitos mais importantes, tanto agudos como retardados**
Não existe mais nenhuma informação relevante disponível.
- **4.3 Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários**
Não existe mais nenhuma informação relevante disponível.

SECÇÃO 5: Medidas de combate a incêndios

- **5.1 Meios de extinção**
- **Meios adequados de extinção:** *CO2, areia, pó extintor. Não usar água.*
- **Meios de extinção que não devam ser utilizados por razões de segurança:** *Água em jacto*
- **5.2 Perigos especiais decorrentes da substância ou mistura**
Não existe mais nenhuma informação relevante disponível.
- **5.3 Recomendações para o pessoal de combate a incêndios**
- **Equipamento especial de protecção:** *Não são necessárias medidas especiais.*

SECÇÃO 6: Medidas a tomar em caso de fugas acidentais

- **6.1 Precauções individuais, equipamento de protecção e procedimentos de emergência**
Usar equipamento de protecção. Manter as pessoas desprotegidas afastadas.
- **6.2 Precauções a nível ambiental:** *Evitar que penetre na canalização / águas superficiais / águas subterrâneas.*
- **6.3 Métodos e materiais de confinamento e limpeza:**
*Recolher com produtos que absorvam líquidos (areia, seixos, absorventes universais, serradura).
Eliminar residualmente as substâncias contaminadas como um resíduo segundo o Ponto 13.
Assegurar uma ventilação adequada.
Não limpar com água ou produtos de limpeza aquosos.*
- **6.4 Remissão para outras secções**
*Para informações sobre uma manipulação segura, ver o capítulo 7.
Para informações referentes ao equipamento de protecção individual, ver o capítulo 8.
Para informações referentes à eliminação residual, ver o capítulo 13.*

SECÇÃO 7: Manuseamento e armazenagem

- **7.1 Precauções para um manuseamento seguro**
*Assegurar uma boa ventilação / exaustão no local de trabalho.
Abrir e manusear o recipiente com cuidado
Evitar a formação de aerossóis.*
- **Precauções para prevenir incêndios e explosões:**
*Manter afastado de fontes de ignição - não fumar.
Proteger contra descargas electrostáticas.
Manter uma máscara de respiração sempre preparada.*
- **7.2 Condições de armazenagem segura, incluindo eventuais incompatibilidades**
- **Armazenagem:**
- **Requisitos para espaços ou contentores para armazenagem:** *Armazenar num local fresco.*
- **Avisos para armazenagem conjunta:** *Não necessário.*

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- **Outros avisos sobre as condições de armazenagem:**
Manter o recipiente hermeticamente fechado.
Armazenar em recipientes bem fechados, em local fresco e seco.
- **7.3 Utilização(ões) final(is) específica(s)** Não existe mais nenhuma informação relevante disponível.

SECÇÃO 8: Controlo da exposição/Protecção individual

- **Indicações adicionais para concepção de instalações técnicas:** Não existem outras informações, ver ponto 7.

· 8.1 Parâmetros de controlo

- **Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado:**

107-06-2 1,2-dicloroetano

VLE	Valor para exposição longa: 10 ppm A4; Lesão hepática; náuseas
-----	---

- **Indicações adicionais:** Foram utilizadas como base as listas válidas à data da elaboração.

· 8.2 Controlo da exposição

· Equipamento de protecção individual:

· Medidas gerais de protecção e higiene:

- Manter afastado de alimentos, bebidas e forragens.
- Despir imediatamente a roupa contaminada e embebida.
- Lavar as mãos antes das pausas e no fim do trabalho.
- Guardar o vestuário de protecção separadamente.
- Evitar o contacto com os olhos e com a pele.

· Protecção respiratória:

Utilizar uma máscara respiratória se a exposição for reduzida ou durante um curto espaço de tempo; se esta for mais prolongada ou mais intensa, utilizar uma máscara respiratória independente do ar ambiente.

· Protecção das mãos:



Luvas de protecção

O material das luvas tem de ser impermeável e resistente ao produto / à substância / preparação.

Uma vez que não foram realizados testes nesta área, não podemos recomendar um determinado tipo de material para as luvas que seja adequado para o produto / a preparação / a mistura de químicos.

Escolher o material das luvas tendo em consideração a durabilidade, a permeabilidade e a degradação.

· Material das luvas

A escolha das luvas mais adequadas não depende apenas do material, mas também de outras características qualitativas e varia de fabricante para fabricante.

· Tempo de penetração no material das luvas

Deve informar-se sobre a validade exacta das suas luvas junto do fabricante e respeitá-la.

· Protecção dos olhos:



Óculos de protecção totalmente fechados

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SECÇÃO 9: Propriedades físico-químicas

· **9.1 Informações sobre propriedades físicas e químicas de base**

· **Informações gerais**

· **Aspeto:**

Forma:

Líquido

Cor:

Conforme a designação do produto

· **Odor:**

tipo éter

· **Limiar olfactivo:**

Não classificado.

· **valor pH:**

Não classificado.

· **Mudança do estado:**

Ponto de fusão/ponto de congelação: -35,5 °C

Ponto de ebulição inicial e intervalo de ebulição: 84 °C

· **Ponto de inflamação:**

13 °C

· **Inflamabilidade (sólido, gás):**

Não aplicável.

· **Temperatura de ignição:**

440 °C

· **Temperatura de decomposição:**

Não classificado.

· **Temperatura de autoignição:**

Não classificado.

· **Propriedades explosivas:**

O produto não é explosivo. Contudo, é possível a formação de misturas explosivas ar/vapor.

· **Limites de explosão:**

Inferior:

6,2 Vol %

Superior:

16 Vol %

· **Pressão de vapor em 20 °C:**

87 hPa

· **Densidade em 20 °C:**

1,25 g/cm³

· **Densidade relativa**

Não classificado.

· **Densidade de vapor**

Não classificado.

· **Taxa de evaporação:**

Não classificado.

· **Solubilidade em / miscibilidade com água em 20 °C:**

8 g/l

· **Coefficiente de partição: n-octanol/água**

Não classificado.

· **Viscosidade:**

Dinâmico em 20 °C:

0,8 mPas

Cinemático:

Não classificado.

· **Percentagem de solvente:**

VOC (UE)

0,00 %

Percentagem de substâncias sólidas:

0,0 %

· **9.2 Outras informações**

Não existe mais nenhuma informação relevante disponível.

SECÇÃO 10: Estabilidade e reactividade

· **10.1 Reactividade** Não existe mais nenhuma informação relevante disponível.

· **10.2 Estabilidade química**

· **Decomposição térmica / condições a evitar:** Não existe decomposição se usado de acordo com as especificações.

· **10.3 Possibilidade de reações perigosas** Não se conhecem reações perigosas.

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- **10.4 Condições a evitar** Não existe mais nenhuma informação relevante disponível.
- **10.5 Materiais incompatíveis:** Não existe mais nenhuma informação relevante disponível.
- **10.6 Produtos de decomposição perigosos:** Não se conhecem produtos de decomposição perigosos.

SECÇÃO 11: Informação toxicológica

- **11.1 Informações sobre os efeitos toxicológicos**
- **Toxicidade aguda**
Nocivo por ingestão.

- **Valores LD/LC50 relevantes para a classificação:**

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por via oral	LD50	670 mg/kg (rat)
por via dérmica	LD50	2.800 mg/kg (rat)

- **Efeito de irritabilidade primário:**
- **Corrosão/irritação cutânea**
Provoca irritação cutânea.
- **Lesões oculares graves/irritação ocular**
Provoca irritação ocular grave.
- **Sensibilização respiratória ou cutânea**
Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- **Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)**
- **Mutagenicidade em células germinativas**
Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- **Carcinogenicidade**
Pode provocar cancro.
- **Toxicidade reprodutiva** Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- **Toxicidade para órgãos-alvo específicos (STOT) - exposição única**
Pode provocar irritação das vias respiratórias.
- **Toxicidade para órgãos-alvo específicos (STOT) - exposição repetida**
Com base nos dados disponíveis, os critérios de classificação não são preenchidos.
- **Perigo de aspiração** Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

SECÇÃO 12: Informação ecológica

- **12.1 Toxicidade**
- **Toxicidade aquática:** Não existe mais nenhuma informação relevante disponível.
- **12.2 Persistência e degradabilidade** Não existe mais nenhuma informação relevante disponível.
- **12.3 Potencial de bioacumulação** Não existe mais nenhuma informação relevante disponível.
- **12.4 Mobilidade no solo** Não existe mais nenhuma informação relevante disponível.
- **Outras indicações ecológicas:**
- **Indicações gerais:**
Classe de perigo para a água 3 (D) (classificação pelas listas): muito perigoso para a água
Não deixar chegar às águas subterrâneas, aos cursos de água nem à canalização, nem em pequenas quantidades.
Perigo de poluição da água potável mesmo se forem derramadas quantidades muito pequenas no subsolo.
- **12.5 Resultados da avaliação PBT e mPmB**
- **PBT:** Não aplicável.
- **mPmB:** Não aplicável.
- **12.6 Outros efeitos adversos** Não existe mais nenhuma informação relevante disponível.

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SECÇÃO 13: Considerações relativas à eliminação

- 13.1 Métodos de tratamento de resíduos
- **Recomendação:** Não se pode eliminar juntamente com o lixo doméstico. Não permita que chegue à canalização.
- **Embalagens contaminadas:**
- **Recomendação:** Eliminação residual conforme o regulamento dos serviços públicos.

SECÇÃO 14: Informações relativas ao transporte

- 14.1 Número ONU
- ADR, IMDG, IATA

UN1184

- 14.2 Designação oficial de transporte da ONU

- ADR
- IMDG, IATA

1184 DICLORETO DE ETILENO
ETHYLENE DICHLORIDE

- 14.3 Classes de perigo para efeitos de transporte

- ADR



- Classe
- Rótulo

3 Líquidos inflamáveis
3+6.1

- IMDG



- Class
- Label

3 Líquidos inflamáveis
3/6.1

- IATA



- Class
- Label

3 Líquidos inflamáveis
3 (6.1)

- 14.4 Grupo de embalagem

- ADR, IMDG, IATA

II

- 14.5 Perigos para o ambiente:

Não aplicável.

- 14.6 Precauções especiais para o utilizador

- N° Kemler:
- N° EMS:
- Segregation groups
- Stowage Category

Atenção: Líquidos inflamáveis
336
3-03
Liquid halogenated hydrocarbons
B

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· Stowage Code	SW2 Clear of living quarters.
· 14.7 Transporte a granel em conformidade com o anexo II da Convenção MARPOL e o Código IBC	Não aplicável.
· Transporte/outras informações:	
· ADR	
· Quantidades Limitadas (LQ)	1L
· Quantidades exceptuadas (EQ)	Código: E2 Quantidade líquida máxima por embalagem interior: 30 ml Quantidade líquida máxima por embalagem exterior: 500 ml
· Categoria de transporte	2
· Código de restrição em túneis	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 DICLORETO DE ETILENO, 3 (6.1), II

SECÇÃO 15: Informação sobre regulamentação

- **15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente**
- **Diretiva 2012/18/UE**
- **Substâncias perigosas designadas - ANEXO I** A substância não está listada.
- **Categoria "Seveso" P5c LÍQUIDOS INFLAMÁVEIS**
- **Quantidades-limiar (em toneladas), para a aplicação de requisitos de nível inferior 5.000 t**
- **Quantidades-limiar (em toneladas), para a aplicação de requisitos de nível superior 50.000 t**

· **LISTA DAS SUBSTÂNCIAS SUJEITAS A AUTORIZAÇÃO (ANEXO XIV)**

Sunset date: 2017-11-22

· **Regulamento (CE) n.º 1907/2006 ANEXO XVII** Condições de limitação: 3, 28, 40· **Regulamento (UE) N.º 649/2012**

Annex I Part 1

Annex I Part 3

· **Disposições nacionais:**· **Avisos para limitação da exposição no local de trabalho:**

Os trabalhadores não devem ser expostos a substâncias perigosas. Em casos isolados os serviços públicos podem permitir exceções.

· **outros regulamentos, restrições e decretos que proibem**· **Substâncias que suscitam elevada preocupação (SVHC) em conformidade com REACH, artigo 57**

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· **15.2 Avaliação da segurança química:** Não foi realizada nenhuma Avaliação de Segurança Química.

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SECÇÃO 16: Outras informações

As informações fornecidas baseiam-se no estado actual dos nossos conhecimentos, embora não representem uma garantia das propriedades do produto e não fundamentam uma relação contratual.

· Abreviaturas e acrónimos:

ADR: Accord européen sur le transport 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

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Líquidos inflamáveis – Categoria 2

Acute Tox. 4: Toxicidade aguda – Categoria 4

Skin Irrit. 2: Corrosão/irritação cutânea – Categoria 2

Eye Irrit. 2: Lesões oculares graves/irritação ocular – Categoria 2

Carc. 1B: Carcinogenicidade – Categoria 1B

STOT SE 3: Toxicidade para órgãos-alvo específicos (exposição única) – Categoria 3

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

· 1.1 Identificador del producto

· **Nombre comercial:** FORMVAR SOLUTION 0.25%

· **Número del artículo:** 15810

· **Número CAS:**

107-06-2

· **Número CE:**

203-458-1

· **Número de clasificación:**

602-012-00-7

· **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: sgkcck@aol.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) n° 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 un material eléctrico, de ventilación o de iluminación/antideflagrante.

P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.

P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.

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 Caracterización química: Sustancias

· Denominación N° CAS

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· Número(s) de identificación

· Número CE: 203-458-1

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

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· SVHC

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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:

Limpia 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, arena, polvo extintor. No utilizar agua.

· Sustancias extintoras inapropiadas por razones de seguridad: Agua a pleno chorro

· 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:

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.

No enjuagar con agua ni productos de limpieza acuosos.

· 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.

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.

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- Evitar la formación de aerosoles.
- **Prevención de incendios y explosiones:**
 - Mantener alejadas las fuentes de encendido. No fumar.
 - 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.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**
 - Sin datos adicionales, ver punto 7.

· 8.1 Parámetros de control

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

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LEP	Valor de larga duración: 20 mg/m ³ , 5 ppm
	CIB, r

- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.
- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **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 manos:**



Guantes de protección

- El material del guante deberá ser impermeable y resistente al producto / sustancia / 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.
- **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.

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· Protección de ojos:



Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

· 9.1 Información sobre propiedades físicas y químicas básicas

· Datos generales

· Aspecto:

Forma:

Líquido

Color:

Según denominación del producto

· Olor:

Eféreo

· Umbral olfativo:

No determinado.

· valor pH:

No determinado.

· Cambio de estado

Punto de fusión/punto de congelación:

-35,5 °C

Punto inicial de ebullición e intervalo de ebullición:

84 °C

· Punto de inflamación:

13 °C

· Inflamabilidad (sólido, gas):

No aplicable.

· Temperatura de ignición:

440 °C

· Temperatura de descomposición:

No determinado.

· Temperatura de auto-inflamación:

No determinado.

· Propiedades explosivas:

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

· Límites de explosión:

Inferior:

6,2 Vol %

Superior:

16 Vol %

· Presión de vapor a 20 °C:

87 hPa

· Densidad a 20 °C:

1,25 g/cm³

· Densidad relativa

No determinado.

· Densidad de vapor

No determinado.

· Tasa de evaporación:

No determinado.

· Solubilidad en / miscibilidad con agua a 20 °C:

8 g/l

· Coeficiente de reparto: n-octanol/agua:

No determinado.

· Viscosidad:

Dinámica a 20 °C:

0,8 mPas

Cinemática:

No determinado.

· Concentración del disolvente:

VOC (CE)

0,00 %

Contenido de cuerpos sólidos:

0,0 %

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· 9.2 Otros datos

No existen más datos relevantes disponibles.

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 los efectos toxicológicos
- 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 o irritación ocular graves
Provoca irritación ocular grave.
- Sensibilización respiratoria o cutánea
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)
- 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 de aspiración A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

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.

(se continua en página 7)

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- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
 Nivel de riesgo para el agua 3 (clasificación de listas): muy peligroso para el agua
 No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados, ni siquiera en pequeñas cantidades.
 Una cantidad ínfima vertida en el subsuelo ya representa un peligro para el agua potable.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

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.

SECCIÓN 14: Información relativa al transporte



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

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· Label	3 (6.1)
· 14.4 Grupo de embalaje · ADR, IMDG, IATA	II
· 14.5 Peligros para el medio ambiente:	No aplicable.
· 14.6 Precauciones particulares para los usuarios · Número Kemler: · Número EMS: · Segregation groups · Stowage Category · Stowage Code	Atención: Líquidos inflamables 336 3-03 Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· 14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR · Cantidades limitadas (LQ) · Cantidades exceptuadas (EQ)	1L Código: E2 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 500 ml
· Categoría de transporte · Código de restricción del túnel	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
· "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 XI)
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Sunset date: 2017-11-22

· REGLAMENTO (CE) n° 1907/2006 ANEXO XVII Restricciones: 3, 28, 40

· Reglamento (UE) No 649/2012

Annex I Part 1

Annex I Part 3

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· **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
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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 européen sur le transport 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

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

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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Omarbetad: 16.10.2018

AVSNITT 1: Namnet på ämnet/blandningen och bolaget/företaget

- **1.1 Produktbeteckning**
- **Handelsnamn:** FORMVAR SOLUTION 0.25%
- **Artikelnummer:** 15810
- **CAS-nummer:**
107-06-2
- **EG-nummer:**
203-458-1
- **Indexnummer:**
602-012-00-7
- **1.2 Relevanta identifierade användningar av ämnet eller blandningen och användningar som det avråds från**
Ingen ytterligare relevant information finns till förfogande.
- **Ämnets användning / tillredningen** Laboratoriekemikalier
- **1.3 Närmare upplysningar om den som tillhandahåller säkerhetsdatablad**
- **Tillverkare/leverantör:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Område där upplysningar kan inhämtas:** Product safety department
- **1.4 Telefonnummer för nödsituationer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

AVSNITT 2: Farliga egenskaper

- **2.1 Klassificering av ämnet eller blandningen**
- **Klassificering enligt förordning (EG) nr 1272/2008**



GHS02 flamma

Flam. Liq. 2 H225 Mycket brandfarlig vätska och ånga.



GHS08 hälsofara

Carc. 1B H350 Kan orsaka cancer.



GHS07

Acute Tox. 4 H302 Skadligt vid förtäring.

Skin Irrit. 2 H315 Irriterar huden.

Eye Irrit. 2 H319 Orsakar allvarlig ögonirritation.

STOT SE 3 H335 Kan orsaka irritation i luftvägarna.

- **2.2 Märkningsuppgifter**
- **Märkning enligt förordning (EG) nr 1272/2008** Ämnet är klassificerat och märkt enligt CLP-förordningen.

(Fortsättning på sida 2)

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(Fortsättning från sida 1)

· Faropiktogram



GHS02 GHS07 GHS08

· Signalord Fara

· Riskbestämmande komponenter för etikettering:

1,2-diklorethan

· Faroangivelser

H225 Mycket brandfarlig vätska och ånga.

H302 Skadligt vid förtäring.

H315 Irriterar huden.

H319 Orsakar allvarlig ögonirritation.

H350 Kan orsaka cancer.

H335 Kan orsaka irritation i luftvägarna.

· Skyddsangivelser

P210 Får inte utsättas för värme, heta ytor, gnistor, öppna lågor och andra antändningskällor.
Rökning förbjuden.

P241 Använd explosionssäker elektrisk/ventilations-/belysnings-/utrustning.

P303+P361+P353 VID HUDKONTAKT (även håret): Ta omedelbart av alla nedstänkta kläder. Skölj huden med vatten/duscha.

P305+P351+P338 VID KONTAKT MED ÖGONEN: Skölj försiktigt med vatten i flera minuter. Ta ur eventuella kontaktlinser om det går lätt. Fortsätt att skölja.

P405 Förvaras inlåst.

P501 Innehållet / behållaren avfallshanteras enligt lokala / regionala / nationella / internationella föreskrifter.

· 2.3 Andra faror

· Resultat av PBT- och vPvB-bedömningen

· PBT: Ej användbar.

· vPvB: Ej användbar.

AVSNITT 3: Sammansättning/information om beståndsdelar

· 3.1 Kemisk karakterisering: Ämnen

· CAS-nr. beteckning

107-06-2 1,2-diklorethan

· Identifikationsnummer

· EG-nummer: 203-458-1

· Indexnummer: 602-012-00-7

· SVHC

107-06-2 | 1,2-diklorethan

AVSNITT 4: Åtgärder vid första hjälpen

· 4.1 Beskrivning av åtgärder vid första hjälpen

· Allmänna hänvisningar:

Förgiftningssymptom kan uppträda först efter många timmar. Av denna anledning krävs läkarövervakning i minst 48 timmar efter ett olycksfall.

· Vid inandning: Vid medvetlöshet lägg och transportera patient stabilt i framstupa sidoläge.

(Fortsättning på sida 3)

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(Fortsättning från sida 2)

- **Vid kontakt med huden:** Tvätta omedelbart med vatten och tvål och spola därefter noggrant.
- **Vid kontakt med ögonen:**
Spola ögonen öppna i flera minuter under rinnande vatten. Om besvär kvarstår, kontakta läkare.
- **Vid förtäring:** Kontakta läkare omedelbart.
- **4.2 De viktigaste symptomen och effekterna, både akuta och fördröjda**
Ingen ytterligare relevant information finns till förfogande.
- **4.3 Angivande av omedelbar medicinsk behandling och särskild behandling som eventuellt krävs**
Ingen ytterligare relevant information finns till förfogande.

AVSNITT 5: Brandbekämpningsåtgärder

- **5.1 Släckmedel**
- **Lämpliga släckningsmedel:** CO₂, sand, släckningspulver. Använd inget vatten.
- **Släckningsmedel som är olämpliga av säkerhetsskäl:** Vatten med full stråle
- **5.2 Särskilda faror som ämnet eller blandningen kan medföra**
Ingen ytterligare relevant information finns till förfogande.
- **5.3 Råd till brandbekämpningspersonal**
- **Speciell skyddsutrustning:** Inga speciella åtgärder krävs.

AVSNITT 6: Åtgärder vid oavsiktliga utsläpp

- **6.1 Personliga skyddsåtgärder, skyddsutrustning och åtgärder vid nödsituationer**
Använd skyddsutrustning. Håll oskyddade personer på avstånd.
- **6.2 Miljöskyddsåtgärder:** Förhindra produkten att tränga ner i avloppsnät/ytvatten/grundvatten.
- **6.3 Metoder och material för inneslutning och sanering:**
Sug upp med vätskebindande material (sand, kiselgur, syrabindemedel, universalbindemedel, sågspån).
Omhändertat förorenat material som avfall enligt punkt 13.
Se till att ventilationen är tillräcklig.
Spola ej bort med vatten eller vattenhaltiga rengöringsmedel.
- **6.4 Hänvisning till andra avsnitt**
Information beträffande säker hantering se kapitel 7.
Information beträffande personlig skyddsutrustning se kapitel 8.
Information beträffande avfallshantering se kapitel 13.

AVSNITT 7: Hantering och lagring

- **7.1 Försiktighetsmått för säker hantering**
Sörj för god ventilation/utsug på arbetsplatsen.
Öppna behållaren försiktigt och hantera den varsamt.
Undvik bildning av aerosol.
- **Hänvisningar beträffande brand- och explosionsskydd:**
Håll åtskild från antändningskällor - rök ej.
Vidta åtgärder mot elektrostatisk uppladdning.
Håll andningsskyddsutrustning i beredskap.
- **7.2 Förhållanden för säker lagring, inklusive eventuell oförenlighet**
- **Lagring:**
- **Krav på lagerutrymmen och behållare:** Förvaras svalt.
- **Hänvisningar beträffande sammanlagring:** Erfordras ej.
- **Ytterligare uppgifter till lagringsvillkoren:**
Förvara behållaren tätt tillsluten.
Förvaras svalt och torrt i väl tillslutet emballage.

(Fortsättning på sida 4)

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· 7.3 Specifik slutanvändning Ingen ytterligare relevant information finns till förfogande.

AVSNITT 8: Begränsning av exponeringen/personligt skydd

· Ytterligare hänvisningar beträffande utformning av tekniska anläggningar: Inga övriga uppgifter, se punkt 7.

· 8.1 Kontrollparametrar

· Ämnen med yrkeshygieniska gränsvärden som bör övervakas:

107-06-2 1,2-diklorethan

OEL	Korttidsvärde: 20 mg/m ³ , 5 ppm
	Nivågränsvärde: 4 mg/m ³ , 1 ppm
	C, H

· Ytterligare hänvisningar: De vid framställningen gällande listorna har använts som utgångspunkt.

· 8.2 Begränsning av exponeringen

· Personlig skyddsutrustning:

· Allmänna skydds- och hygienåtgärder:

Undvik kontakt med livsmedel, drycker och fodermedel.

Nedsmutsade, indränkta klädesplagg skall omedelbart tas av.

Tvätta händerna före raster och efter arbetet.

Skyddsdräkter förvaras separat.

Undvik kontakt med ögonen och huden.

· Andningsskydd:

Vid kortvarig eller ringa belastning - använd andningsfilterutrustning; vid intensiv resp. längre exponering - använd andningsskyddsutrustning som är oberoende av omgivningsluften.

· Handskydd:



Skyddshandskar

Handskmaterialet måste vara tätt och beständigt mot produkt/ämne/tillredning.

Handskmaterialrekommendationer kan inte ges för produkt/tillredning/kemikalielösning, då inga tester genomförts.

Val av handskmaterial beaktande penetrationstider, permeationskvoter och degradation.

· Handskmaterial

Val av lämplig handske är inte enbart beroende av material utan även av andra kvalitetskriterier och varierar från en tillverkare till nästa.

· Handskmaterialets penetreringstid

Exakt penetreringstid fastställs av skyddshandskarnas tillverkare och skall beaktas.

· Ögonskydd:



Tättslutande skyddsglasögon

SE

(Fortsättning på sida 5)

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(Fortsättning från sida 4)

AVSNITT 9: Fysikaliska och kemiska egenskaper

· 9.1 Information om grundläggande fysikaliska och kemiska egenskaper

· Allmänna uppgifter

· Utseende:

Form:	Vätska
Färg:	Enligt produktbeteckning
Lukt:	Eteraktig
Lukttröskel:	Ej bestämd.

· pH-värde: Ej bestämd.

· Tillståndsändring

Smältpunkt/frys punkt:	-35,5 °C
Initial kokpunkt och kokpunktsintervall:	84 °C

· Flampunkt: 13 °C

· Brandfarlighet (fast form, gas): Ej användbar.

· Tändtemperatur: 440 °C

· Sönderfallstemperatur: Ej bestämd.

· Självtändningstemperatur: Ej bestämd.

· Explosiva egenskaper: Produkten är ej explosionsfarlig, men bildning av explosionsfarliga ångluft-blandningar är möjlig.

· Explosionsgränser:

Nedre:	6,2 Vol %
Övre:	16 Vol %

· Ångtryck vid 20 °C: 87 hPa

· Densitet vid 20 °C: 1,25 g/cm³

· Relativ densitet: Ej bestämd.

· Ångdensitet: Ej bestämd.

· Avdunstningshastighet: Ej bestämd.

· Löslighet i / blandbarhet med

Vatten vid 20 °C: 8 g/l

· Fördelningskoefficient: n-oktanol/vatten: Ej bestämd.

· Viskositet:

Dynamisk vid 20 °C:	0,8 mPas
Kinematisk:	Ej bestämd.

· Lösningssmedelhalt:

VOC (EG) 0,00 %

Andel av fasta partiklar: 0,0 %

· 9.2 Annan information Ingen ytterligare relevant information finns till förfogande.

AVSNITT 10: Stabilitet och reaktivitet

· 10.1 Reaktivitet Ingen ytterligare relevant information finns till förfogande.

· 10.2 Kemisk stabilitet

· Termisk sönderdelning / förhållanden som bör undvikas: Inget sönderfall vid ändamålsenlig användning.

· 10.3 Risken för farliga reaktioner Inga farliga reaktioner kända.

(Fortsättning på sida 6)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

Datum för utskrift: 16.10.2018

Omarbetad: 16.10.2018

Handelsnamn: FORMVAR SOLUTION 0.25%

(Fortsättning från sida 5)

- **10.4 Förhållanden som ska undvikas** Ingen ytterligare relevant information finns till förfogande.
- **10.5 Oförenliga material:** Ingen ytterligare relevant information finns till förfogande.
- **10.6 Farliga sönderdelningsprodukter:** Inga farliga sönderfallsprodukter kända.

AVSNITT 11: Toxikologisk information

- **11.1 Information om de toxikologiska effekterna**
- **Akut toxicitet**
Skadligt vid förtäring.

- **Klassificeringsrelevanta LD/LC50-värden:**

107-06-2 1,2-dikloretan

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

- **Primär retningseffekt:**
- **Frätande/irriterande på huden**
Irriterar huden.
- **Allvarlig ögonskada/ögonirritation**
Orsakar allvarlig ögonirritation.
- **Luftvägs-/hudsensibilisering**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **CMR-effekter (cancerframkallande, mutagena och reproduktionstoxiska egenskaper)**
- **Mutagenitet i könsceller**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **Cancerogenitet**
Kan orsaka cancer.
- **Reproduktionstoxicitet**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **Specifik organtoxicitet – enstaka exponering**
Kan orsaka irritation i luftvägarna.
- **Specifik organtoxicitet – upprepad exponering**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **Fara vid aspiration** Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.

AVSNITT 12: Ekologisk information

- **12.1 Toxicitet**
- **Akvatisk toxicitet:** Ingen ytterligare relevant information finns till förfogande.
- **12.2 Persistens och nedbrytbarhet** Ingen ytterligare relevant information finns till förfogande.
- **12.3 Bioackumuleringsförmåga** Ingen ytterligare relevant information finns till förfogande.
- **12.4 Rörlighet i jord** Ingen ytterligare relevant information finns till förfogande.
- **Ytterligare ekologiska hänvisningar:**
- **Allmänna hänvisningar:**
Vattenföroreningsklass 3 (värdering enligt listan): stor risk för vattenförorening.
Låt ej tränga ner i grundvatten, vattendrag eller avloppsnätet, inte ens i små mängder.
Risk för förorening av dricksvattnet redan när mycket små mängder tränger ner i marken.
- **12.5 Resultat av PBT- och vPvB-bedömningen**
- **PBT:** Ej användbar.
- **vPvB:** Ej användbar.
- **12.6 Andra skadliga effekter** Ingen ytterligare relevant information finns till förfogande.

SE

(Fortsättning på sida 7)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

Datum för utskrift: 16.10.2018

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Handelsnamn: FORMVAR SOLUTION 0.25%

(Fortsättning från sida 6)

AVSNITT 13: Avfallshantering

- **13.1 Avfallsbehandlingsmetoder**
- **Rekommendation:** Får inte deponeras ihop med hushållsavfall. Får inte tömmas i avloppsnätet.
- **Ej rengjorda förpackningar:**
- **Rekommendation:** Avfallshanteras enligt myndigheters föreskrifter.

AVSNITT 14: Transportinformation

- | | |
|--|--|
| · 14.1 UN-nummer
· ADR, IMDG, IATA | UN1184 |
| · 14.2 Officiell transportbenämning
· ADR
· IMDG, IATA | 1184 ETYLENDIKLORID
ETHYLENE DICHLORIDE |
| · 14.3 Faroklass för transport
· ADR | |
|  | |
| · Klass
· Etikett | 3 Brandfarliga vätskor
3+6.1 |
| · IMDG | |
|  | |
| · Class
· Label | 3 Brandfarliga vätskor
3/6.1 |
| · IATA | |
|  | |
| · Class
· Label | 3 Brandfarliga vätskor
3 (6.1) |
| · 14.4 Förpackningsgrupp
· ADR, IMDG, IATA | II |
| · 14.5 Miljöfaror: | Ej användbar. |
| · 14.6 Särskilda skyddsåtgärder
· Kemler-tal:
· EMS-nummer:
· Segregation groups
· Stowage Category | Varning: Brandfarliga vätskor
336
3-03
Liquid halogenated hydrocarbons
B |

(Fortsättning på sida 8)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 7)

· Stowage Code	SW2 Clear of living quarters.
· 14.7 Bulktransport enligt bilaga II till Marpol 73/78 och IBC-koden	Ej användbar.
· Transport / ytterligare uppgifter:	
· ADR	
· Begränsade mängder (LQ)	1L
· Reducerade mängder (EQ)	Kod: E2 Högsta nettomängd per innerförpackning: 30 ml Högsta nettomängd per ytterförpackning: 500 ml
· Transportkategori	2
· Tunnelrestriktionskod	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 ETYLENDIKLORID, 3 (6.1), II

AVSNITT 15: Gällande föreskrifter

- **15.1 Föreskrifter/lagstiftning om ämnet eller blandningen när det gäller säkerhet, hälsa och miljö**
- **Direktiv 2012/18/EU**
- **Namngivna farliga ämnen - BILAGA I** Ämnet är inte listat.
- **Seveso-kategorier P5c** BRANDFARLIGA VÄTSKOR
- **Tröskelvärden (i ton) för tillämpning av krav för lägre nivå** 5.000 t
- **Tröskelvärden (i ton) för tillämpning av krav för övre nivå** 50.000 t

· **FÖRTECKNING ÖVER ÄMNEN FÖR VILKA DET KRÄVS TILLSTÅND (BILAGA XIV)**

Sunset date: 2017-11-22

- **Förordning (EG) nr 1907/2006 BILAGA XVII** Villkor: 3, 28, 40

- **Förordning (EU) nr 649/2012**

Annex I Part 1

Annex I Part 3

- **Nationella föreskrifter:**

- **Hänvisningar beträffande inskränkning av sysselsättning:**
Arbetstagare får inte utsättas för detta farliga ämne. I enstaka fall kan myndigheten medge undantag.

- **Ämnen som inger mycket stora betänkligheter (SVHC) enligt REACH, artikel 57**

107-06-2 | 1,2-diklorethan

- **15.2 Kemikaliesäkerhetsbedömning:** En kemikaliesäkerhetsbedömning har ej gjorts.

AVSNITT 16: Annan information

Uppgifterna är baserade på våra aktuella kunskaper. De representerar emellertid ingen som helst garanti beträffande produktens egenskaper och utgör ingen grund för ett avtalat rättsförhållande.

- **Förkortningar och akronymer:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

(Fortsättning på sida 9)

Säkerhetsdatablad
Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 8)

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
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Brandfarliga vätskor – Kategori 2
Acute Tox. 4: Akut toxicitet – Kategori 4
Skin Irrit. 2: Frätande eller irriterande på huden – Kategori 2
Eye Irrit. 2: Allvarlig ögonskada eller ögonirritation – Kategori 2
Carc. 1B: Cancerogenitet – Kategori 1B
STOT SE 3: Specifik organotoxicitet (enstaka exponering) – Kategori 3

SE

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.16

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1 การระบุสาร/ การทำ/ และของบริษัท / บริษัทที่เข้าถือครอง

- 1.1 ลักษณะเฉพาะของผลิตภัณฑ์
- ชื่อทางการค้า **FORMVAR SOLUTION 0.25%**
- เลขที่รายชื่อ 15810
- เลขที่ CAS: 107-06-2
- จำนวน EC: 203-458-1
- เลขที่ EU: 602-012-00-7
- 1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุให้ใช้และที่ไม่ควรให้ใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- การประยุกต์ใช้สาร/ การทำ เคมีภัณฑ์ห้องทดลอง
- 1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
- ผู้ผลิต/ ผู้จัดหา
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- ข้อมูลรายละเอียดเพิ่มเติมหาได้จาก Product safety department
- 1.4 หมายเลขโทรศัพท์ฉุกเฉิน:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 การระบุสิ่งที่เป็นอันตราย

- 2.1 การจำแนกประเภทของสารหรือสารผสม
- การแบ่งประเภทตามข้อบังคับ (จีซี) เลขที่ 1272/2008



เปลวไฟ

Flam. Liq. 2 H225 ของเหลวและไอที่ไวไฟสูง



สิ่งอันตรายต่อสุขภาพ

Carc. 1B H350 อาจเป็นเหตุให้เกิดมะเร็ง



Acute Tox. 4 H302 เป็นอันตรายหากกลืนเข้าไป

Skin Irrit. 2 H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง

Eye Irrit. 2 H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา

STOT SE 3 H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

- 2.2 องค์ประกอบของฉลาก

- ฉลากตามระเบียบ (EC) เลขที่ 1272/2008 สารได้รับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP

(ต่อที่หน้า 2)

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แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.16

การปรับปรุงใหม่ : 2018.10.16

ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 1)

· ภาพสัญลักษณ์สิ่งที่เป็นอันตราย



GHS02 GHS07 GHS08

· สัญลักษณ์ คำ อันตราย

· ส่วนประกอบที่ระบุอันตรายบนฉลาก

เอทิลีนไดคลอไรด์

· ประกาศสิ่งที่เป็นอันตราย

H225 ของเหลวและไอที่ไวไฟสูง

H302 เป็นอันตรายหากกลืนเข้าไป

H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง

H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา

H350 อาจเป็นเหตุให้เกิดมะเร็ง

H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

· ประกาศการป้องกันระดับระวังภัย

P210 เก็บให้ห่างจากความร้อน/ ประกายไฟ/เปลวไฟ/ ผิวที่ร้อน - ห้ามสูบบุหรี่

P241 ใช้อุปกรณ์ไฟฟ้า/ ระบายอากาศ/ไฟฟ้า/ อุปกรณ์เครื่องใช้ชนิดกันระเบิด

P303+P361+P353 หากสัมผัสถูกผิวหนัง (หรือเส้นผม) ถอดเสื้อผ้าที่เปื้อนทั้งหมดทันที ล้างผิวด้วยน้ำ/อาบน้ำ

P305+P351+P338 หากเข้าตา : ชะล้างด้วยน้ำอย่างระมัดระวังเป็นเวลาหลายๆนาที ถอดคอนแทกซ์เลนส์ถ้ายังอยู่ที่เดิมและสะดวกที่จะทำก็ให้ชะล้างต่อไป

P405 เก็บในที่ใส่กุญแจปิด

P501 ทิ้งสิ่งที่บรรจุ/ภาชนะที่บรรจุตามกฎหมายของท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ

· 2.3 อันตรายอื่นๆ

· ผลของ PBT และการประเมิน vPvB

· PBT: ไม่สามารถใช้ได้

· vPvB: ไม่สามารถใช้ได้

3 ส่วนประกอบ/ ข้อมูลรายละเอียดของส่วนผสมต่างๆ

· 3.1 คุณลักษณะทางเคมี: สาร

· การระบุเลขที่ CAS

107-06-2 เอทิลีนไดคลอไรด์

· เลขที่ที่ระบุ

· จำนวน EC: 203-458-1

· เลขที่ EU: 602-012-00-7

4 มาตรการการปฐมพยาบาลเบื้องต้น

· 4.1 คำอธิบายถึงมาตรการปฐมพยาบาล

· ข้อมูลรายละเอียดทั่วไป

อาการจากพิษอาจเกิดขึ้นหลังจากนั้นหลายชั่วโมงดังนั้นจะต้องเฝ้าติดตามดูอาการทางการแพทย์อย่างน้อย 48 ชั่วโมงหลังจากอุบัติเหตุ

· หลังจากการสูดหายใจเข้าไป ในกรณีที่คุณใช้ไม่รู้สึกรู้ตัวให้ขนย้ายคนไปอย่างมั่นคงในท่าตะแคงด้านข้าง

· หลังจากการสัมผัสถูกผิวหนัง ล้างด้วยน้ำและสบู่แล้วฟอกให้ทั่วทันที

· หลังจากการสัมผัสถูกตา ชะล้างที่เปิดอยู่ใตุน้ำที่กำลังไหลเป็นเวลาหลายๆนาทีถ้าอาการไม่ดีขึ้นให้ปรึกษาแพทย์

· หลังจากการกลืนเข้าไป: พบแพทย์โดยทันที

· 4.2 อาการสำคัญส่วนใหญ่และผลกระทบ ทั้งชนิดเฉียบพลันและค่อยๆ แสดงอาการ

ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

(ต่อหน้า 3)

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.16

การปรับปรุงใหม่ : 2018.10.16

ชื่อทางการค้า FORMVAR SOLUTION 0.25%

- 4.3 ข้อบ่งชี้ของอาการที่ต้องเข้ารับการรักษาจากแพทย์ทันทีและการบำบัดพิเศษที่จำเป็น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

(ต่อที่หน้า 2)

5 มาตรการการดับเพลิง

- 5.1 สารที่ใช้ดับเพลิง
- สารดับเพลิงที่เหมาะสม คาร์บอนไดออกไซด์ทรายผงดับไฟอย่าใช้น้ำ
- สารดับเพลิงที่ไม่ควรใช้ด้วยเหตุผลด้านความปลอดภัย น้ำฉีดพ่นเป็นลำ
- 5.2 อันตรายเฉพาะอย่างที่เกิดจากสารหรือส่วนผสม ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 5.3 คำแนะนำสำหรับพนักงานดับเพลิง
- อุปกรณ์ป้องกันภัย ไม่ต้องมีมาตรการพิเศษ

6 มาตรการลดอุบัติเหตุ

- 6.1 การป้องกันส่วนบุคคล อุปกรณ์ป้องกัน และขั้นตอนดำเนินการเมื่อเกิดกรณีฉุกเฉิน สวมอุปกรณ์ป้องกันภัยกันคนที่ไม่ใช้อุปกรณ์ป้องกันออกไป
- 6.2 การให้ความคุ้มครองสิ่งแวดล้อมล่วงหน้า: อย่าปล่อยให้เข้าไปในท่อน้ำทิ้ง/ น้ำบนดินหรือใต้ดิน
- 6.3 วิธีดำเนินการและวัสดุสำหรับการบรรจุและการทำความสะอาด: ดูดซับด้วยวัสดุที่สามารถยึดของเหลวไว้ (ทรายไดอะโตไมท์ที่ตัวยึดเกาะกรดตัวยึดทั่วๆ ไปซีลีย) ทิ้งวัสดุที่ปนเปื้อนเป็นของเสียตามรายการในบัญชี 13 ตรวจสอบให้แน่ใจว่ามีภาวะระบายอากาศที่ดีพอ อย่านัดด้วยน้ำหรือน้ำยาทำความสะอาดที่มีน้ำเป็นส่วนผสม
- 6.4 การอ้างอิงถึงส่วนอื่น ดูข้อมูลรายละเอียดเรื่องความปลอดภัยในการขนถ่ายจากส่วนที่ 7 ดูข้อมูลรายละเอียดเรื่องอุปกรณ์ป้องกันส่วนบุคคลจากส่วนที่ 8 ดูข้อมูลรายละเอียดเรื่องการจัดจากส่วนที่ 13

7 การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันล่วงหน้าสำหรับการจัดการด้านความปลอดภัย ทำให้แน่ใจว่าสถานที่ทำงานมีการระบายอากาศ/ ไอเสียที่ดี เปิดและถือภาชนะรองรับอย่างระมัดระวัง ป้องกันการเกิดละอองสารฟุ้ง
- ข้อมูลรายละเอียดเกี่ยวกับการป้องกันอัคคีภัยและการระเบิด ออกจากแหล่งที่ติดไฟอย่าสูบบุหรี่ ป้องกันให้พ้นจากประกายไฟฟาสถิตย์ เก็บอุปกรณ์ป้องกันสำหรับการช่วยหายใจให้มีพร้อมใช้งาน
- 7.2 เงื่อนไขในการเก็บรักษาอย่างปลอดภัย, รวมถึงสิ่งที่เข้ากันไม่ได้ใดๆ
- การจัดเก็บ
- ข้อกำหนดที่ต้องปฏิบัติตามสำหรับห้องเก็บและภาชนะบรรจุ เก็บในบริเวณที่เย็น
- ข้อมูลรายละเอียดด้านการจัดเก็บในสถานที่จัดเก็บรวม ไม่ได้กำหนด
- ข้อมูลรายละเอียดเพิ่มเติมด้านสภาพการจัดเก็บ เก็บโดยปิดผนึกอย่างแน่นหนา เก็บในที่เย็นสภาพแห้งในภาชนะบรรจุที่ปิดผนึกอย่างดี
- 7.3 การระบุถึงการสิ้นสุดการใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

8 การควบคุมการทิ้งในลักษณะเปิด / การป้องกันภัยส่วนบุคคล

- ข้อมูลรายละเอียดเสริมสำหรับการออกแบบสิ่งอำนวยความสะดวกทางเทคนิค ไม่มีข้อมูลนอกเหนือจากนี้ดูรายการ 7 (ต่อที่หน้า 4)

-TH-

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.16

การปรับปรุงใหม่ : 2018.10.16

ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 3)

8.1 การควบคุมตัวแปร

ส่วนผสมพร้อมค่าขอบเขตที่ต้องเฝ้าดูในสถานที่ปฏิบัติงาน

107-06-2 เอทิลีนไดคลอไรด์

PEL (US)	ค่าระยะยาว: 50 ppm Ceiling limit value: 100; 200* ppm *5-min peak in any 3 hrs
REL (US)	ค่าระยะสั้น: 8 mg/m ³ , 2 ppm ค่าระยะยาว: 4 mg/m ³ , 1 ppm See Pocket Guide Apps. A and C
TLV (US)	ค่าระยะยาว: 40 mg/m ³ , 10 ppm

ข้อมูลรายละเอียดเสริม รายการถูกต้องระหว่างที่จัดทำโดยอาศัยการใช้งานเป็นหลัก

8.2 การควบคุมการสัมผัส

อุปกรณ์ป้องกันภัยส่วนบุคคล

มาตรการการป้องกันและสุขอนามัยทั่วไป

- เก็บให้ห่างจากสิ่งของที่เป็นอาหาร เครื่องดื่ม และอาหารสัตว์
- ให้ถอดเสื้อผ้าที่เปื้อนและเจือปนออกทันที
- ล้างมือก่อนที่จะหยุดพักและเมื่อสิ้นสุดเวลาทำงาน
- เก็บชุดป้องกันแยกต่างหาก
- หลีกเลี่ยงการสัมผัสถูกตาและผิวหนัง

การป้องกันการสูดหายใจเข้าไป

ในกรณีที่อยู่เป็นเวลานานหรืออากาศเป็นพิษระดับต่ำ ใช้หน้ากากกรองเพื่อช่วยหายใจในกรณีที่มีความเข้มข้นสูงหรืออยู่เป็นเวลานาน ให้ใช้เครื่องป้องกันที่มีอุปกรณ์ช่วยหายใจในตัว

การป้องกันมือ



ถุงมือป้องกัน

วัสดุของถุงมือจะต้องไม่ให้อากาศผ่านเข้าออกและทนทานต่อผลิตภัณฑ์/ สาร/ การผลิต เนื่องจากขาดการทดสอบจึงไม่มีคำแนะนำสำหรับวัสดุที่ใช้ทำถุงมือสำหรับผลิตภัณฑ์/ การผลิต/ ของผสมเคมี เลือกวัสดุสำหรับถุงมือโดยพิจารณาจากเวลาที่ใช้ในการซึมผ่านอัตราการแพร่และการเสื่อม

วัสดุที่ใช้ทำถุงมือ

การเลือกใช้ถุงมือที่เหมาะสมไม่เพียงแต่ขึ้นอยู่กับวัสดุแต่ยังขึ้นกับมาตรฐานด้านคุณภาพและข้อแตกต่างระหว่างผู้ผลิตแต่ละแห่ง

เวลาที่ใช้ในการทะลุผ่านวัสดุที่ใช้ทำถุงมือ

ผู้ผลิตถุงมือป้องกันจะต้องทดสอบหาเวลาแน่นอนที่ใช้ในการทะลุผ่านและจะต้องมีการตรวจสอบติดตาม

การป้องกันตา



แว่นตาที่ขอบปิดสนิท

9 คุณสมบัติทางกายภาพและเคมี

9.1 ข้อมูลคุณสมบัติพื้นฐานทางกายภาพและเคมี

ข้อมูลรายละเอียดทั่วไป

ลักษณะ :

รูปสีฐาน

สี

กลิ่น

ของเหลว

ตามรายละเอียดของผลิตภัณฑ์

คล้ายอีเทอร์

(ต่อหน้า 5)

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

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ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 4)

· เกณฑ์กลิ่น :	ไม่ได้กำหนดไว้.
· ค่า pH	ไม่ได้กำหนดไว้.
· การเปลี่ยนแปลงสถานะ จุดหลอมเหลว/ ขอบเขตการหลอมละลาย จุดเดือด/ ขอบเขตการเดือด	-35.5 °C 84 °C
· จุดวาบไฟ	13 °C
· ความสามารถติดไฟ (ของแข็งแกส)	ไม่สามารถใช้ได้
· อุณหภูมิจุดระเบิด	440 °C
· อุณหภูมิสลายตัว	ไม่ได้กำหนดไว้.
· การเผาไหม้ด้วยตัวเอง	ไม่ได้กำหนดไว้.
· อันตรายจากการระเบิด	ผลิตภัณฑ์ไม่ได้เป็นสารระเบิดอย่างไรก็ตามอาจเป็นไปได้ที่การผสมของอากาศ/ ไอจะทำให้เกิดการ
· ขอบเขตการระเบิด ขั้นต่ำ ขั้นสูง	6.2 Vol % 16 Vol %
· ความดันไอ ที่ 20 °C	87 hPa
· ความหนาแน่น ที่ 20 °C · ความหนาแน่นสัมพัทธ์ · ความหนาแน่นของไอ · อัตราการระเหย	1.25 g/cm ³ ไม่ได้กำหนดไว้. ไม่ได้กำหนดไว้. ไม่ได้กำหนดไว้.
· ความสามารถในการละลายใน / ความสามารถผสมเป็นสารละลายเนื้อเดียวทุกส่วนผสมกับน้ำ ที่ 20 °C	8 g/l
· สัมประสิทธิ์การแยกตัว (เฮน-ออกทานอล/น้ำ)	ไม่ได้กำหนดไว้.
· ความหนืด (ไดนามิค) พลศาสตร์ ที่ 20 °C (คิเนเมติก) จลนศาสตร์	0.8 mPas ไม่ได้กำหนดไว้.
· ปริมาณส่วนประกอบตัวทำละลาย VOC (EC)	0.00 %
· ส่วนประกอบที่เป็นของแข็ง · 9.2 ข้อมูลอื่นๆ	0.0 % ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

10 ความเสถียรและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาโต้ตอบ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.2 เสถียรภาพทางเคมี
- การสลายตัวด้วยความร้อน / เจือจางที่ต้องหลีกเลี่ยง ไม่มีการสลายตัวถ้าใช้ตามรายละเอียดที่ระบุไว้
- 10.3 ความเป็นไปได้ของการเกิดปฏิกิริยาอันตราย ไม่มีปฏิกิริยาเป็นอันตรายที่รู้จัก
- 10.4 เจือจางเพื่อการหลีกเลี่ยง ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.5 วัสดุที่เข้ากันไม่ได้: ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.6 อันตรายจากการสลายตัวของผลิตภัณฑ์: ไม่มีสารจากการสลายตัวที่เป็นอันตรายที่รู้จัก

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(ต่อหน้า 6)

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

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การปรับปรุงใหม่ : 2018.10.16

ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 5)

11 ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา

· ความเป็นพิษอย่างสาหัส:

เป็นอันตรายหากกลืนเข้าไป

· การจัดแบ่งตามค่า LD/LC50

107-06-2 เอทิลีนไดคลอไรด์

ทางปาก	LD50	670 mg/kg (rat)
ทางผิวหนัง	LD50	2,800 mg/kg (rat)

· อาการระคายเคืองเบื้องต้น

· บนผิวหนัง

เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง

· ที่ดวงตา

เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา

· การทำให้แพ้

12 ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา

12.1 ความเป็นพิษ

· ความเป็นพิษที่เกี่ยวกับน้ำ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

· 12.2 การคงอยู่และการย่อยสลาย ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

· 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

· 12.4 การเปลี่ยนแปลงในดิน ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

· ข้อมูลรายละเอียดเสริมเกี่ยวกับนิเวศวิทยา

· หมายเหตุทั่วไป

เป็นอันตรายต่อน้ำชั้น 3 (กฎข้อบังคับของเยอรมัน)(การประเมินค่าตามรายการ):เป็นอันตรายสูงที่สุดกับน้ำ
 อย่ายปล่อยให้ผลิตภัณฑ์ไปถึงน้ำผิวดินเส้นทางน้ำหรือระบบระบายน้ำเสียแม้ว่าจะเป็นปริมาณเล็กน้อยเท่านั้น
 เป็นอันตรายต่อน้ำดื่มแม้จะร่วงลงในพื้นดินเป็นปริมาณที่น้อยมากก็ตาม

12.5 ผลของ PBT และการประเมิน vPvB

· PBT: ไม่สามารถใช้ได้

· vPvB: ไม่สามารถใช้ได้

· 12.6 ผลข้างเคียงอื่นๆ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

13 การพิจารณาการจัด

13.1 วิธีการกำจัดของเสีย

· คำแนะนำ ต้องไม่ทิ้งไปพร้อมกับขยะจากบ้านเรือนอย่าปล่อยให้ผลิตภัณฑ์เข้าถึงระบบระบายน้ำเสีย

· ภาชนะบรรจุที่ยังไม่ได้ล้างทำความสะอาด

· คำแนะนำ การกำจัดจะต้องทำตามกฎระเบียบที่เป็นทางการ

14 ข้อมูลรายละเอียดในการขนส่ง

14.1 เลขที่ UN

· ADR, IMDG, IATA UN1184

14.2 ชื่อการจัดส่งสินค้าที่เหมาะสมของ UN

· ADR 1184 ETHYLENE DICHLORIDE

· IMDG, IATA ETHYLENE DICHLORIDE

(ต่อหน้า 7)

TH

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.16

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ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 6)

14.3 ชั้นเรียนอันตรายจากการขนส่ง

ADR



- ประเภท 3 ของเหลวติดไฟได้
- ฉลากสิ่งที่เป็นอันตราย 3+6.1

IMDG



- Class 3 ของเหลวติดไฟได้
- Label 3/6.1

IATA



- Class 3 ของเหลวติดไฟได้
- Label 3 (6.1)

14.4 กลุ่มของภาชนะบรรจุ

- ADR, IMDG, IATA II

14.5 สิ่งที่เป็นอันตรายต่อสภาพแวดล้อม

ไม่สามารถใช้ได้

14.6 การป้องกันพิเศษล่วงหน้าสำหรับผู้ใช้

- คำเตือน !: ของเหลวติดไฟได้
- รหัสความอันตราย: 336
- หมายเลข EMS 3-03
- Segregation groups Liquid halogenated hydrocarbons
- Stowage Category B
- Stowage Code SW2 Clear of living quarters.

14.7 การขนส่งขนาดใหญ่ตามภาคผนวก 2 ของ MARPOL73/78 และรหัส IBC

ไม่สามารถใช้ได้

การขนส่ง/ข้อมูลรายละเอียดเสริม

ADR

- ปริมาณที่จำกัด (LQ) 1L
- Excepted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml
- หมวดหมู่การขนส่ง 2
- รหัสควบคุมการผ่านอุโมงค์ 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

(ต่อหน้า 8)

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

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การปรับปรุงใหม่ : 2018.10.16

ชื่อทางการค้า FORMVAR SOLUTION 0.25%

(ต่อหน้า 7)

· “กฎระเบียบต้นแบบ” ของ UN

UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 ข้อมูลรายละเอียดของกฎระเบียบ

- 15.1 ความปลอดภัย สุขภาพและระเบียบ/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม
- บัญชีรายชื่อวัตถุอันตราย

· กรมวิชาการเกษตร

ชนิดที่ 4

· กรมประมง

สารที่ไม่ได้อยู่ในรายการ

· กรมปศุสัตว์

สารที่ไม่ได้อยู่ในรายการ

· อาหารและยา

ชนิดที่ 4

· กรมโรงงานอุตสาหกรรม

ชนิดที่ 3

· กรมธุรกิจพลังงาน

สารที่ไม่ได้อยู่ในรายการ

· กฎหมายของประเทศ

· ข้อมูลรายละเอียดเกี่ยวกับขอบเขตการใช้งาน

ไม่อนุญาตให้คนงานเข้าไปสัมผัสกับวัตถุอันตรายข้อยกเว้นอาจทำได้เมื่อได้รับอนุญาตจากผู้มีอำนาจในบางกรณี

· 15.2 การประเมินความปลอดภัยของสารเคมี: ไม่ได้ดำเนินการตามการประเมินความปลอดภัยของสารเคมี

16 ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดนี้ใช้ความรู้ปัจจุบันของเราเป็นหลักอย่างไรก็ตามข้อมูลนี้ไม่ใช่การรับประกันจากสถาบันต่อคุณสมบัติเฉพาะของผลิตภัณฑ์และไม่สามารถยืนยันการบังคับใช้ตามกฎหมายที่เกี่ยวข้องกับสัญญา

· คำย่อและชื่อย่อที่ผสมขึ้น

ADR: Accord européen sur le transport 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