

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/21/2017

Reviewed on 02/21/2017

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: 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. 1B H350 May cause 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.**May cause cancer.**May cause respiratory irritation.*· **Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. No smoking.**Use explosion-proof electrical/ventilating/lighting/equipment.**Avoid breathing dust/fume/gas/mist/vapors/spray**Wear protective gloves/protective clothing/eye protection/face protection.**Ground/bond container and receiving equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Specific treatment (see on this label).**IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**If skin irritation occurs: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**Rinse mouth.**In case of fire: Use for extinction: CO2, powder or water spray.**Take off contaminated clothing and wash it before reuse.**Store locked up.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**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

- **Dangerous components:**

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

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

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, 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.

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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
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1:

50 ppm

· PAC-2:

200 ppm

· PAC-3:

300 ppm

7 Handling and storage

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

8 Exposure controls/personal protection

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

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- **Control parameters**

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

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

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

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

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

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9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Liquid

Color: According to product specification

- **Odor:** Ether-like

- **Odor threshold:** Not determined.

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

- **Change in condition**

Melting point/Melting range: -35.5 °C (-32 °F)

Boiling point/Boiling range: 84 °C (183 °F)

- **Flash point:** 13 °C (55 °F)

- **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 mm Hg)

- **Density at 20 °C (68 °F):** 1.25 g/cm³ (10.431 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.

- **Solvent content:**

Organic solvents: 0.0 %

VOC content: 0.0 g/l / 0.00 lb/gl

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

10 Stability and reactivity

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

- **Chemical stability**

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

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

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

11 Toxicological information

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

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

107-06-2 ETHYLENE DICHLORIDE

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2800 mg/kg (rat)

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

- **Carcinogenic categories**

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

2B

- **NTP (National Toxicology Program)**

R

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

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.

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13 Disposal considerations

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

14 Transport information

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

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· Packing group · DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category · Stowage Code	Warning: Flammable liquids 336 3-03 Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Hazardous substance:	On passenger aircraft/rail: 1 L On cargo aircraft only: 60 L 100 lbs, 45.4 kg
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

107-06-2 ETHYLENE DICHLORIDE

· TSCA (Toxic Substances Control Act):

Substance is listed.

· 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.

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· **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).

· **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.

May cause cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

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

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

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

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

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

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

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

Continue rinsing.

Specific treatment (see on this label).

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

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

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Trade name: FORMVAR SOLUTION 1.00%

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Take off contaminated clothing and wash it before reuse.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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 preparation / last revision** 02/21/2017 / -

· **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. 1B: Carcinogenicity – Category 1B

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

Safety Data Sheet

according to WHS Regulations

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Revision: 21.02.2017

1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals

- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: 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)

- 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.

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GHS08 health hazard

Carc. 1B H350 May cause cancer.

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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.

May cause cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

Use explosion-proof electrical/ventilating/lighting equipment.

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

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

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

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

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

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

Continue rinsing.

Specific treatment (see on this label).

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

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

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Take off contaminated clothing and wash it before reuse.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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
- **Dangerous components:** Void

- **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.

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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
- **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 from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

- **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

WES	Long-term value: 40 mg/m ³ , 10 ppm
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- **Additional information:** The lists valid during the making were used as basis.

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.

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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

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.

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· 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/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:	
Organic solvents:	0.0 %
VOC (EC)	0.00 %
· 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	2800 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.

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- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Carc. 1B**


12 Ecological Information

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

- **UN-Number**
- **ADG, IMDG, IATA** UN1184
- **UN proper shipping name**
- **ADG** 1184 ETHYLENE DICHLORIDE
- **IMDG, IATA** ETHYLENE DICHLORIDE
- **Transport hazard class(es)**
- **ADG**
- 
- **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**
 · **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

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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).

· *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.

May cause cancer.

May cause respiratory irritation.

· *Precautionary statements*

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

Use explosion-proof electrical/ventilating/lighting equipment.

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

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

Ground/bond container and receiving equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

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

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

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

Continue rinsing.

Specific treatment (see on this label).

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

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

Take off contaminated clothing and wash it before reuse.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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

· **Directive 2012/18/EU**

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

· **Seveso category P5c** FLAMMABLE LIQUIDS

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

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

· **National regulations:**

· **Information about limitation of use:**

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

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

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

107-06-2	ETHYLENE DICHLORIDE
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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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: 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. 1B: Carcinogenicity – Category 1B

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

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1 Identification

- **Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25
- **CAS Number:**
107-06-2
- **EC number:**
203-458-1
- **Index number:**
602-012-00-7
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: 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 1B

H350 May cause 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.**May cause cancer.**May cause respiratory irritation.*· **Precautionary statements***Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Avoid breathing dust/fume/gas/mist/vapours/spray.**Wear protective gloves/protective clothing/eye protection/face protection.**Ground and bond container and receiving equipment.**Use non-sparking tools.**Take actions to prevent static discharges.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Specific treatment (see on this label).**IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**If skin irritation occurs: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**Rinse mouth.**In case of fire: Use for extinction: CO2, powder or water spray.**Take off contaminated clothing and wash it before reuse.**Store locked up.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Hazard description:**· **WHMIS-symbols:***B2 - Flammable liquid**D1B - Toxic material causing immediate and serious toxic effects*

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D2A - Very toxic material causing other toxic effects



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



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

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

3 Composition/information on ingredients

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

- **Dangerous components:**

63450-15-7	POLYVINYL FORMAL	≤ 1% w/w
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4 First-aid measures

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

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet

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- **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
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

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

8 Exposure controls/personal protection

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

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- **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.

- **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.

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· 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/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C:	8 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	0,8 mPas
Kinematic:	Not determined.
Organic solvents:	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.

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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	2800 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.
- **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.

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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
 · **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.

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- | | |
|--|---|
| · 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 |
| <hr style="border-top: 1px dashed black;"/> | |
| · TDG | |
| · Excepted quantities (EQ) | Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml |
| <hr style="border-top: 1px dashed black;"/> | |
| · 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 |
| <hr style="border-top: 1px dashed black;"/> | |
| · UN "Model Regulation": | UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II |

15 Regulatory information

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

· Section 355 (extremely hazardous substances):
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Substance is not listed.

· Section 313 (Specific toxic chemical listings):
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· TSCA (Toxic Substances Control Act):

Substance is listed.

· Canadian substance listings:

· Canadian Domestic Substances List (DSL)
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Substance is listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

Substance is not listed.

· Canadian Ingredient Disclosure list (limit 1%)

107-06-2	ETHYLENE DICHLORIDE
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- GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms



GHS02

GHS07

GHS08

- Signal word *Danger*

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CA

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/21/2017

Reviewed on 02/21/2017

Trade name: FORMVAR SOLUTION 1.00%

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

ETHYLENE DICHLORIDE

· **Hazard statements**

Highly flammable liquid and vapour.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

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

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

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

Ground and bond container and receiving equipment.

Use non-sparking tools.

Take actions to prevent static discharges.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

Obtain special instructions before use.

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

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

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

Continue rinsing.

Specific treatment (see on this label).

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Rinse mouth.

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

Take off contaminated clothing and wash it before reuse.

Store locked up.

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

Store in a well-ventilated place. Keep cool.

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 preparation / last revision** 02/21/2017 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

CA

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

Printing date 21.02.2017

Revision: 21.02.2017

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

- **1.1 Product identifier**
- **Trade name:** FORMVAR SOLUTION 1.00%
- **Article number:** 15830, 15830-25
- **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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Trade name: **FORMVAR SOLUTION 1.00%**

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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.

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.

P321 Specific treatment (see on this label).

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· **Dangerous components:** Void· **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.

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- **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.
- **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 from heat.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

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Protect from heat and direct sunlight.

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

SECTION 8: Exposure controls/personal protection

· 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:

Organic solvents: 0.0 %

VOC (EC) 0.00 %

· 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	2800 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
· IMDG, IATA | 1184 ETHYLENE DICHLORIDE
ETHYLENE DICHLORIDE |
| · 14.3 Transport hazard class(es)
· ADR | |
|  | |
| · Class
· Label | 3 Flammable liquids.
3+6.1 |
| · IMDG | |
|  | |
| · Class
· Label | 3 Flammable liquids.
3/6.1 |
| · IATA | |
|  | |
| · Class
· Label | 3 Flammable liquids.
3 (6.1) |
| · 14.4 Packing group
· ADR, IMDG, IATA | II |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user
· Danger code (Kemler):
· EMS Number:
· Segregation groups
· Stowage Category | Warning: Flammable liquids.
336
3-03
Liquid halogenated hydrocarbons
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)

107-06-2	ETHYLENE DICHLORIDE
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- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 28

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

SECTION 16: Other information

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

· **Abbreviations and acronyms:**

ADR: Accord 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
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: 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

化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2017.02.21

在 2017.02.21 审核

1 化学品及企业标识

- **产品识别者**
- 化学品中文(英文)名称, 化学品俗名或商品名: FORMVAR SOLUTION 1.00%
- 商品编号: 15830, 15830-25
- CAS 编号: 107-06-2
- 欧盟编号: 203-458-1
- 欧盟编号: 602-012-00-7
- 相应纯物质或者混合物的相关下位用途及禁止用途 无相关详细资料。
- 原材料的应用/准备工作进行 实验室化学物
- **安全技术说明书内供应商详细信息**
- **企业名称:**
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
- **可获取更多资料的部门:** Product safety department
- **紧急联系电话号码:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 危险性概述

· **紧急情况概述:**

根据产品规格, 液体, 高度易燃液体和蒸气。 吞咽有害。 皮肤接触可能有害。 造成皮肤刺激。 造成严重眼刺激。 可能致癌。 可引起呼吸道刺激。

· **GHS危险性类别**



火焰

易燃液体 第2类

H225 高度易燃液体和蒸气



健康危害

致癌性 第1B类

H350 可能致癌



急性毒性(经口) 第4类

H302 吞咽有害

皮肤腐蚀/刺激 第2类

H315 造成皮肤刺激

严重眼损伤/眼刺激 类别2A

H319 造成严重眼刺激

特定靶器官系统毒性 (单次接触) 第3类

H335 可引起呼吸道刺激

急性毒性(经皮肤) 第5类

H313 皮肤接触可能有害

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化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2017.02.21

在 2017.02.21 审核

化学品中文(英文)名称, 化学品俗名或商品名 : FORMVAR SOLUTION 1.00%

(在 1 页继续)

· 标签因素

· GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

· 图示



GHS02 GHS07 GHS08

· 名称 危险

· 标签上辨别危险的成份:

1,2-二氯化乙烯

· 危险字句

高度易燃液体和蒸气

吞咽有害

皮肤接触可能有害

造成皮肤刺激

造成严重眼刺激

可能致癌

可引起呼吸道刺激

· 警戒字句

· 预防措施

规定远离热源。禁止吸烟

· 事故响应

如皮肤(或头发)沾染:立即脱掉所有沾染的衣服。用水清洗皮肤/淋浴

如进入眼睛:用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗

具体治疗(见本标签上的)

· 安全储存

存放处须加锁

· 废弃处置

处置内装物/容器按照地方/区域/国家/国际规章

· 其他有害性

· PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果

· PBT(残留性、生物浓缩性、毒性物质) 不适用的

· vPvB(高残留性、高生物浓缩性物质): 不适用的

3 成分/组成信息

· 纯品

· CAS号 化学名, 通用名

107-06-2 1,2-二氯化乙烯

· 鉴别编号:

· 欧盟编号: 203-458-1

· 欧盟编号: 602-012-00-7

· 危险的成分: 无效

4 急救措施

· 应急措施要领

· 总说明: 中毒的症状可能会在几个小时以后才出现;因此在发生事故之后起码要有 48 小时的医疗观察。

· 吸入: 万一病人不清醒时,请让病人侧躺以便移动。

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化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2017.02.21

在 2017.02.21 审核

化学品中文(英文)名称, 化学品俗名或商品名 : FORMVAR SOLUTION 1.00%

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- **皮肤接触:** 马上用水和肥皂进行彻底的冲洗.
- **眼睛接触:** 张开眼睛在流水下冲洗数分钟. 如果症状仍然持续, 请咨询医生.
- **食入:** 马上召唤医生.
- **给医生的资料:**
- **最重要的急慢性症状及其影响** 无相关详细资料.
- **需要及时的医疗处理及特别处理的症状** 无相关详细资料.

5 消防措施

- **灭火方法**
- **灭火的方法和灭火剂:** 使用二氧化碳 (CO₂)、沙粒、灭火粉末. 切勿使用水.
- **为了安全, 不适当的灭火剂会:** 使用全喷嘴的水
- **特别危险性** 无相关详细资料.
- **特殊灭火方法**
- **消防人员特殊的防护装备:** 没有要求特别的措施.

6 泄漏应急处理

- **保护措施** 带上保护仪器. 让未受到保护的人们远离.
- **环境保护措施:** 切勿让其进入下水道/水面或地下水.
- **密封及净化方法和材料:**
吸收液体粘合原料 (沙粒、硅藻土、酸性粘合剂、通用粘合剂、锯屑).
根据第 13 条条款弃置受污染物.
确保有足够的通风装置.
切勿用水或水溶清洁剂来冲清.
- **参照其他部分**
有关安全处理的资料请参阅第 7 节.
有关个人防护装备的资料请参阅第 8 节.
有关弃置的资料请参阅第 13 节.

7 操作处置与储存

- **操作处置**
- **储存**
确保工作间有良好的通风/排气装置.
小心打开及处理贮藏器.
防止气溶胶的形成.
- **有关火灾及防止爆炸的资料:**
远离火源 - 切勿吸烟.
防热.
防静电.
提供呼吸保护装置.
- **混合危险性等安全储存条件**
- **储存:**
· **储存库和容器须要达到的要求:** 储存在阴凉的位置.
· **有关使用一个普通的储存设施来储存的资料:** 不需要.
· **有关储存条件的更多资料:**
将容器密封.
储存密封的贮藏器内, 并放在阴凉、干爽的位置.
免受接触热力和直接受阳光照射.

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化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

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· 具体的最终用户 无相关详细资料。

8 接触控制和个体防护

· 工程控制方法: 没有进一步数据;见第 7 项.

· 控制变数

· 在工作场需要监控的限值成分

107-06-2 1,2-二氯化乙烯

OEL (CN) PC-STEL: 15 mg/m³

PC-TWA: 7 mg/m³

PEL (TW) PC-TWA: 40 mg/m³, 10 ppm

· 额外的资料: 制作期间有效的清单将作为基础来使用.

· 泄漏控制

· 个人防护设备:

· 一般保护和卫生措施:

远离食品、饮料和饲料.

立即除去所有的不洁的和被污染的衣服.

在休息之前和工作完毕后请清洗双手.

分开储存保护性衣服.

避免和眼睛及皮肤接触.

· 呼吸系统防护:

如果曾短暂接触或在低污染的情况下,请使用呼吸过滤装置. 如果曾深入或较长时间接触,请使用独立的呼吸保护装置.

· 手防护:



保护手套

手套的物料必须是不渗透性的,且能抵抗该产品/物质/添加剂.

基于缺乏测试,对于产品/制剂/化学混合物,并不会提供手套材料的建议

选择手套材料时,请注意材料的渗透时间,渗透率和降解参数

· 手套材料 选择合适的手套不单取决于材料,亦取决于质量特征,以及来自哪一间生产厂家

· 渗入手套材料的时间 请向劳保手套生产厂家获取准确的破裂时间并观察实际的破裂时间

· 眼睛防护:



密封的护目镜

9 理化特性

· 有关基本物理及化学特性的信息

· 一般说明

· 外观:

形状: 液体

颜色: 根据产品规格

· 气味: 类似醚

(在 5 页继续)

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(在 4 页继续)

· 嗅觉阈限	未决定.
· pH值:	未决定.
· 条件的更改	
熔点:	-35.5 °C
沸点/初沸点和沸程:	84 °C
· 闪点:	13 °C
· 可燃性(固体、气体):	不适用的
· 点火温度:	440 °C
· 分解温度:	未决定.
· 自燃温度:	未决定.
· 爆炸的危险性:	该产品并非爆炸性的然而有可能形成可爆炸性的空气/蒸汽混合物
· 爆炸极限:	
较低:	6.2 Vol %
较高:	16 Vol %
· 蒸气压 在 20 °C:	87 hPa
· 密度 在 20 °C:	1.25 g/cm ³
· 相对密度	未决定.
· 蒸气密度	未决定.
· 蒸发速率	未决定.
· 溶解性	
水 在 20 °C:	8 g/l
· n-辛醇/水分配系数:	未决定.
· 黏性:	
动态 在 20 °C:	0.8 mPas
运动学的:	未决定.
有机溶剂:	0.0 %
· 其他信息	无相关详细资料。

10 稳定性和反应性

- 反应性 无相关详细资料。
- 稳定性
- 热分解/要避免的情况: 如果遵照规格使用则不会分解.
- 有害反应可能性 未有已知的危险反应.
- 应避免的条件 无相关详细资料。
- 不相容的物质: 无相关详细资料。
- 危险的分解产物: 未知有危险的分解产品.

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11 毒理学信息

· 对毒性学影响的信息

· 急性毒性:

· 与分类相关的 LD/LC50 值:

107-06-2 1,2-二氯化乙烯

口腔	LD50	670 mg/kg (rat)
皮肤	LD50	2800 mg/kg (rat)

· 主要的刺激性影响:

· 皮肤: 刺激皮肤和粘膜.

· 在眼睛上面: 刺激的影响.

· 致敏作用: 没有已知的敏化影响.

· 对以下组别可能产生影响的数据:

· CMR作用 (致癌、导致基因突变、对生殖系统有害)

致癌性 第1B类

12 生态学信息

· 生态毒性

· 水生毒性: 无相关详细资料。

· 持久性和降解性 无相关详细资料。

· 环境系统习性:

· 潜在的生物累积性 无相关详细资料。

· 土壤内移动性 无相关详细资料。

· 额外的生态学资料:

· 总括注解:

水危害级别 3 (德国规例) (评估): 对水是极其危险的

即使是小量, 不要让该产品接触地下水、水道或污水系统.

即使是极其小量的产品渗入地下也会对饮用水造成危险.

· PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果

· PBT(残留性、生物浓缩性、毒性物质) 不适用的

· vPvB(高残留性、高生物浓缩性物质): 不适用的

· 其他副作用 无相关详细资料。

13 废弃处置

· 废弃处置方法

· 建议: 不能将该产品和家居垃圾一起丢弃. 不要让该产品接触污水系统.

· 受污染的容器和包装:

· 建议: 必须根据官方的规章来丢弃.

14 运输信息

· 联合国危险货物编号(UN号)

· ADR, IMDG, IATA

UN1184

· UN适当装船名

· ADR

1184 二氯化乙烯

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· IMDG, IATA	ETHYLENE DICHLORIDE
· 运输危险等级	
· ADR	
	
· 级别	3 易燃液体
· 标签	3+6.1
· IMDG	
	
· Class	3 易燃液体
· Label	3/6.1
· IATA	
	
· Class	3 易燃液体
· Label	3 (6.1)
· 包装组别	
· ADR, IMDG, IATA	II
· 危害环境:	不适用的
· 用户特别预防措施	警告: 易燃液体
· 危险编码:	336
· EMS 号码:	3-03
· Segregation groups	Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· MARPOL73/78(针对船舶引起的海洋污染预防协议)附件书2及根据IBC Code(国际装船货物编码)的大量运送	不适用的
· 运输/额外的资料:	
· 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 "标准规定": UN 1184 二氯化乙烯, 3 (6.1), II

15 法规信息

- 对相应纯物质或者混合物的安全、保健及环境法规/法律
- 新化学物质环境管理办法

- 中国现有化学物质名录

有列出物质.

- GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

- 图示



GHS02 GHS07 GHS08

- 名称 危险

- 标签上辨别危险的成份:

1,2-二氯化乙烯

- 危险字句

高度易燃液体和蒸气

吞咽有害

皮肤接触可能有害

造成皮肤刺激

造成严重眼刺激

可能致癌

可引起呼吸道刺激

- 警戒字句

- 预防措施

规定远离热源。禁止吸烟

- 事故响应

如皮肤(或头发)沾染:立即脱掉所有沾染的衣服。用水清洗皮肤/淋浴

如进入眼睛:用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗

具体治疗(见本标签上的)

- 安全储存

存放处须加锁

- 废弃处置

处置内装物/容器按照地方/区域/国家/国际规章

- 国家的规章:

- 有关使用限制的资料: 禁止员工接触该危险物料. 在某些情况可由当局作出例外决定.

- 化学物质安全性评价: 尚未进行化学物质安全性评价

16 其他信息

该资料是基于我们目前的知识. 然而,这并不构成对任何特定产品特性的担保并且不建立一个法律上有效的合同关系.

- 缩写:

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

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: 持久性生物累积性有毒物质

vPvB: very Persistent and very Bioaccumulative

易燃液体 第2类: Flammable liquids – Category 2

急性毒性(经口) 第4类: Acute toxicity – Category 4

急性毒性(经皮肤) 第5类: Acute toxicity – Category 5

皮肤腐蚀/刺激 第2类: Skin corrosion/irritation – Category 2

严重眼损伤/眼刺激 类别2A: Serious eye damage/eye irritation – Category 2A

致癌性 第1B类: Carcinogenicity – Category 1B

特定靶器官系统毒性 (单次接触) 第3类: Specific target organ toxicity (single exposure) – Category 3

CN

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 21.02.2017

Herziening van: 21.02.2017

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

· 1.1 Productidentificatie

· **Handelsnaam:** FORMVAR SOLUTION 1.00%

· **Artikelnummer:** 15830, 15830-25

· **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

· **Inlichtingengevende sector:** Product safety department

· **1.4 Telefoonnummer voor noodgevallen:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

· **2.1 Indeling van de stof of het mengsel**

· **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



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)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 21.02.2017

Herziening van: 21.02.2017

Handelsnaam: FORMVAR SOLUTION 1.00%

(Vervolg van blz. 1)

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

· 2.2 Etiketteringselementen

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

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

· Gevarenpictogrammen



GHS02 GHS07 GHS08

· Signaalwoord Gevaar

· Gevaaraanduidende componenten voor de etikettering:

1,2-dichloorethaan

· Gevarenaanduidingen

H225 Licht ontvlambare vloeistof en damp.

H302 Schadelijk bij inslikken.

H315 Veroorzaakt huidirritatie.

H319 Veroorzaakt ernstige oogirritatie.

H350 Kan kanker veroorzaken.

H335 Kan irritatie van de luchtwegen veroorzaken.

· Veiligheidsaanbevelingen

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

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.

P321 Specifieke behandeling vereist (zie op dit etiket).

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

107-06-2 1,2-dichloorethaan

· Identificatienummer(s)

· **EC-nummer:** 203-458-1

· **Catalogusnummer:** 602-012-00-7

· **Gevaarlijke inhoudstoffen:** Niet van toepassing

(Vervolg op blz. 3)

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 21.02.2017

Herziening van: 21.02.2017

Handelsnaam: FORMVAR SOLUTION 1.00%

(Vervolg van blz. 2)

· **SVHC**

107-06-2 | 1,2-dichloorethaan

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.
 - Beschermen tegen hitte.
 - Maatregelen treffen tegen ontlading van statische elektriciteit.
 - Ademhalingstoestellen gereedhouden.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
 - **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
 - **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
 - **Verdere inlichtingen over eisen m.b.t. de opslag:**
 - Tanks ondoordringbaar gesloten houden.
 - Koel en droog bewaren in goed gesloten vaten.
 - Tegen hitte en directe zonnestrallen beschermen.
- **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/m³

- **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 ademhalingstoestel 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 chemicaliënmengsel 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:

Organisch oplosmiddel:	0,0 %
VOC (EG)	0,00 %

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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	2800 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)
Gevaar voor water klasse 3 (D) (Lijstclassificatie): gevaar voor water groot

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- 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)

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- **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 3, 28
 - **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)
 - **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
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 2: Ontvlambare vloeistoffen – Categorie 2
 Acute Tox. 4: Acute toxiciteit – Categorie 4
 Skin Irrit. 2: Huidcorrosie/-irritatie – Categorie 2
 Eye Irrit. 2: Ernstig oogletsel/oogirritatie – Categorie 2
 Carc. 1B: Kankerverwekkendheid – Categorie 1B
 STOT SE 3: Specifieke doelorgaantoxiciteit bij eenmalige blootstelling – Categorie 3

NL

Fiche de données de sécurité

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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 1.00%
- **Code du produit:** 15830, 15830-25
- **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.

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.

P321 Traitement spécifique (voir sur cette étiquette).

P405 Garder sous cléf.

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

· **Composants dangereux: néant**

· **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.

· **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).

Évacuer 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.

Éviter la formation d'aérosols.

· Préventions des incendies et des explosions:

Tenir à l'abri des sources d'inflammation - ne pas fumer.

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Tenir à l'abri de la chaleur.

Prendre des mesures contre les charges électrostatiques.

Tenir des appareils de protection respiratoire prêts.

· 7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités

· Stockage:

· **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.

· **Indications concernant le stockage commun:** Pas nécessaire.

· Autres indications sur les conditions de stockage:

Tenir les emballages hermétiquement fermés.

Stocker au frais et au sec dans des fûts bien fermés.

Protéger de la forte chaleur et du rayonnement direct du soleil.

· 7.3 Utilisation(s) finale(s) particulière(s) Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

· 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:

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VME	Valeur à long terme: 40 mg/m ³ , 10 ppm
C1B	

· 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

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

· Matériau des gants

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

· Temps de pénétration du matériau des gants

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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· Protection des yeux:



Lunettes de protection hermétiques

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:

Solvants organiques:	0,0 %
VOC (CE)	0,00 %

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· 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.
- 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	2800 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.

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- **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.

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>UN1184</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG, IATA | <p>1184 DICHLORURE D'ÉTHYLÈNE
ETHYLENE DICHLORIDE</p> |
| <ul style="list-style-type: none"> · 14.3 Classe(s) de danger pour le transport · ADR | <p>3 Liquides inflammables.
3+6.1</p> |
| <ul style="list-style-type: none"> · IMDG | <p>3 Liquides inflammables.
3/6.1</p> |
| <ul style="list-style-type: none"> · IATA | <p>3 Liquides inflammables.
3 (6.1)</p> |

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· 14.4 Groupe d'emballage · ADR, IMDG, IATA	II
· 14.5 Dangers pour l'environnement:	Non applicable.
· 14.6 Précautions particulières à prendre par l'utilisateur · Indice Kemler: · No EMS: · Segregation groups · Stowage Category · Stowage Code	Attention: Liquides inflammables. 336 3-03 Liquid halogenated hydrocarbons B 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 · Quantités limitées (LQ) · Quantités exceptées (EQ)	1L Code: E2 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 500 ml
· Catégorie de transport · Code de restriction en tunnels	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
· "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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· RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3, 28

· 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.

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· **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.

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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquides inflammables – Catégorie 2

Acute Tox. 4: Toxicité aiguë – Catégorie 4

Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2

Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2

Carc. 1B: Cancérogénicité – Catégorie 1B

STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3

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

- **1.1 Produktidentifikator**
- **Handelsname:** FORMVAR SOLUTION 1.00%
- **Artikelnummer:** 15830, 15830-25
- **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
- 24h Giftnotruf Munchen: +49 (0)89 19240
Toxikologische Abteilung der II. Medizinischen Klinik
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

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



GHS08 Gesundheitsgefahr

Carc. 1B H350 Kann Krebs erzeugen.

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GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.

Skin Irrit. 2 H315 Verursacht Hautreizungen.

Eye Irrit. 2 H319 Verursacht schwere Augenreizung.

STOT SE 3 H335 Kann die Atemwege reizen.

· 2.2 Kennzeichnungselemente

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

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme



GHS02

GHS07

GHS08

· Signalwort Gefahr

· Gefahrbestimmende Komponenten zur Etikettierung:

1,2-Dichlorethan

· Gefahrenhinweise

H225 Flüssigkeit und Dampf leicht entzündbar.

H302 Gesundheitsschädlich bei Verschlucken.

H315 Verursacht Hautreizungen.

H319 Verursacht schwere Augenreizung.

H350 Kann Krebs erzeugen.

H335 Kann die Atemwege reizen.

· Sicherheitshinweise

P210

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

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.

P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).

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
- **Gefährliche Inhaltsstoffe:** entfällt

- **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.
Vor Hitze schützen.
Maßnahmen gegen elektrostatische Aufladung treffen.
Atemschutzgeräte bereithalten.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**
Behälter dicht geschlossen halten.
In gut verschlossenen Gebinden kühl und trocken lagern.
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **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
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- **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

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

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

- **Handschuhmaterial**

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

- **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

- **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/cm³
- **Relative Dichte:** Nicht bestimmt.
- **Dampfdichte:** Nicht bestimmt.
- **Verdampfungsgeschwindigkeit:** Nicht bestimmt.

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Handelsname: FORMVAR SOLUTION 1.00%

(Fortsetzung von Seite 5)

- | | |
|--|--|
| · Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C: | 8 g/l |
| · Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt. | |
| · Viskosität: | |
| Dynamisch bei 20 °C: | 0,8 mPas |
| Kinematisch: | Nicht bestimmt. |
| · Lösemittelgehalt: | |
| Organische Lösemittel: | 0,0 % |
| VOC (EU) | 0,00 % |
| · 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:		
107-06-2 1,2-Dichlorethan		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2800 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.

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

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

- **14.1 UN-Nummer**
- **ADR, IMDG, IATA** UN1184
- **14.2 Ordnungsgemäße UN-Versandbezeichnung**
- **ADR** 1184 ETHYLENDICHLORID
- **IMDG, IATA** ETHYLENE DICHLORIDE
- **14.3 Transportgefahrenklassen**
- **ADR**
-
- **Klasse** 3 Entzündbare flüssige Stoffe
- **Gefahrzettel** 3+6.1
- **IMDG**
-
- **Class** 3 Entzündbare flüssige Stoffe

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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)

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

· **Nationale Vorschriften:**

· **Hinweise zur Beschäftigungsbeschränkung:**

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

· **Technische Anleitung Luft:**

Klasse	Anteil in %
III	99,0

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

· **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**

· **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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Entzündbare Flüssigkeiten – Kategorie 2

Acute Tox. 4: Akute Toxizität – Kategorie 4

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

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

Carc. 1B: Karzinogenität – Kategorie 1B

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

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

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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 1.00%

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

· **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.

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.

P321 Trattamento specifico (vedere su questa etichetta).

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

· **Sostanze pericolose:** non applicabile

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· SVHC

107-06-2 | 1,2-dicloroetano

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 una manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

· **7.1 Precauzioni per la manipolazione sicura**

Accurata ventilazione/aspirazione nei luoghi di lavoro.

Aprire e manipolare i recipienti con cautela.

Evitare la formazione di aerosol.

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- **Indicazioni in caso di incendio ed esplosione:**
Tenere lontano da fonti di calore, non fumare.
Proteggere dal calore.
Adottare provvedimenti contro cariche elettrostatiche.
Tener pronto il respiratore.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Conservare in ambiente fresco.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**
Mantenere i recipienti ermeticamente chiusi.
Conservare in luogo fresco e asciutto in fusti ben chiusi.
Proteggere dal calore e dai raggi diretti del sole.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

SEZIONE 8: 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:**

107-06-2 1,2-dicloroetano

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:

Solventi organici:

0,0 %

VOC (CE)

0,00 %

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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	2800 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.

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Scheda di dati di sicurezza
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- **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
· IMDG, IATA | 1184 DICLORURO DI ETILENE
ETHYLENE DICHLORIDE |
| · 14.3 Classi di pericolo connesso al trasporto | |
| · ADR | |
| | |
| · Classe
· Etichetta | 3 Liquidi infiammabili
3+6.1 |
| · IMDG | |
| | |
| · Class
· Label | 3 Liquidi infiammabili
3/6.1 |
| · IATA | |
| | |
| · Class
· Label | 3 Liquidi infiammabili
3 (6.1) |

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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)

107-06-2	1,2-dicloroetano
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· REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII Restrizioni: 3, 28

· Disposizioni nazionali:

· Indicazioni relative alla limitazione delle attività lavorative:

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

· Ulteriori disposizioni, limitazioni e decreti proibitivi

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

107-06-2	1,2-dicloroetano
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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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquidi infiammabili – Categoria 2

Acute Tox. 4: Tossicità acuta – Categoria 4

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

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

Carc. 1B: Cancerogenicità – Categoria 1B

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

물질안전보건자료 GHS에 따라

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1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명:** FORMVAR SOLUTION 1.00%
- **상품번호:** 15830, 15830-25
- **CAS-번호**
107-06-2
- **EC 의번호:**
203-458-1
- **색인 번호:**
602-012-00-7
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 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
- **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



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

(2 쪽에 계속)

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- 라벨표기 요소
- GHS 라벨 요소
- 그림문자



GHS02 GHS07 GHS08

- 신호어 위험
- 상표상에명확히위험성이표시된성분:
ETHYLENE DICHLORIDE
- 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
피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗으십시오. 피부를 물로 씻으십시오/샤워하십시오.
눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.
(라벨 참조) 처치를 하십시오.
잠금장치가 있는 저장장소에 저장 하십시오.
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

- 화학적 특성: 화학물질
- CAS-번호표시
107-06-2 ETHYLENE DICHLORIDE
- 식별 번호
- EC 의번호: 203-458-1
- 색인 번호: 602-012-00-7
- 위험 요소: 누락되다

4 응급조치 요령

- 응급조치요령 내용
- 일반 적 정보:
중 독 증 상 은 몇 시 간 이 지 난 뒤 에 발 생 할 수 있 다. 따 라 서 사 고 가 발 생 한 후 에 적 어 도 48 시 간 동 안 은 의 료 진 의 관 찰 을 받 아 야 한 다.
- 흡입했을 때: 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- 피부에 접촉했을 때: 즉시물과비누로씻고잘행군다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어내고나서, 증상이 지속될 경우에는 의사와 상담한다

(3 쪽에계속)

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- **먹었을 때:** 즉시 의사의 도움을 구한다.
- **기타 의사의 주의사항:**
- **가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.
- **즉각적인 의료처치 및 특별치료가 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 응급처치 절차** 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- **환경 관련 예방조치:** 하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐 및 정화 방법과 소재:**
액체가 혼합된 물질(모래, 규조토, 산성결합물, 일반결합물, 톱밥)에 흡입되도록 한다.
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
충분한 환기가 되도록 한다.
물이나 묽은 세척제로 씻어 내지 마시오
- **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**
작업장에서는통풍이잘되고/습기제거가잘되게주의한다.
조심스럽게용기를 개봉하거나취급한다.
연무질이형성되는것을피한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:**
발화요소는 멀리둔다.금연.
열로부터보호한다.
정전기의충전으로부터 보호한다.
호흡보호장비를항상비치한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 차가운 장소에 보관한다.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필요없음
- **보관 조건에 관한 추가적인 정보:**
용기를새지않게밀폐한채보관한다.
밀폐된용기속에서늘하고건조하게보관한다.
열이나직사광선으로부터보호한다.

(4 쪽에계속)

물질안전보건자료 GHS에 따라

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· **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

· **첨단시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항 목 7 을 참고하시 오.

· **통제 변수**

· **화학물질의 노출기준, 생물학적 노출기준 등:**

107-06-2 ETHYLENE DICHLORIDE

TLV (KR) 장기간의값: 40 mg/m³, 10 ppm

PEL (US) 장기간의값: 50 ppm
최고노출기준: 100; 200* ppm
*5-min peak in any 3 hrs

REL (US) 단기간의값: 8 mg/m³, 2 ppm
장기간의값: 4 mg/m³, 1 ppm
See Pocket Guide Apps. A and C

TLV (US) 장기간의값: 40 mg/m³, 10 ppm

· **추 가 정 보:** 제 조 할 당 시 에 유 효 한 목 록 을 기 초 로 사 용 했 다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

· 식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.

· 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.

· 휴식 전이나 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 혼합물에 적합한 장갑재질에 대한 추천이 없다.

투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· **장갑의재료**

· 적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· **장갑재료의투과시간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

· **눈 보호:**



확조이는보안경

물질안전보건자료

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9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
· 물리적 상태:	액체
· 색:	제 품 표 시 에 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/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도:	
· 물 의경우 20 °C:	8 g/l
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학적 의경우 20 °C:	0.8 mPas
· 동점성:	알맞지않다.
· 용매내용물	
· 유기용매:	0.0 %
· VOC (EU)	0.00 %
· 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 위험한 반응으로는알려지지않았다.

(6 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.02.21

개정: 2017.02.21

제품명: FORMVAR SOLUTION 1.00%

(5 쪽부터계속)

- **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 ETHYLENE DICHLORIDE

구강의 LD50 670 mg/kg (rat)

피부의 LD50 2800 mg/kg (rat)

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

13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.

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(7 쪽에계속)

물질안전보건자료

GHS에 따라

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14 운송에 필요한 정보

<ul style="list-style-type: none"> · 유엔 번호 · ADR, IMDG, IATA 	UN1184
<ul style="list-style-type: none"> · UN 적정 선적명 · ADR · IMDG, IATA 	1184 ETHYLENE DICHLORIDE ETHYLENE DICHLORIDE
<ul style="list-style-type: none"> · 교통 위험 클래스 · ADR <div style="display: flex; align-items: center; gap: 10px;"> </div>	3 발화성용액 3+6.1
<ul style="list-style-type: none"> · IMDG <div style="display: flex; align-items: center; gap: 10px;"> </div>	3 발화성용액 3/6.1
<ul style="list-style-type: none"> · Class · Label 	3 발화성용액 3/6.1
<ul style="list-style-type: none"> · IATA <div style="display: flex; align-items: center; gap: 10px;"> </div>	3 발화성용액 3 (6.1)
<ul style="list-style-type: none"> · 용기등급 · ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · 환경적 유해물질: 	해당사항 없음.
<ul style="list-style-type: none"> · 이용자 특별 예방조치 · 위험 코드: · EMS-번호: · Segregation groups · Stowage Category · Stowage Code 	경고: 발화성용액 336 3-03 Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
<ul style="list-style-type: none"> · MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송 	해당사항 없음.
<ul style="list-style-type: none"> · 운 송/추가 정보: 	
<ul style="list-style-type: none"> · 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

(8 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.02.21

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제품명: FORMVAR SOLUTION 1.00%

(7 쪽부터계속)

<ul style="list-style-type: none"> · 운송 구분 · 터널 제한 코드 	<p style="text-align: center;">2 D/E</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="text-align: center;">1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> · UN "모범 규제": 	<p style="text-align: center;">UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II</p>

15 법적 규제현황

· 산업안전보건법에 의한 규제:	
· 제조 등 금지물질:	성분이포함되어있지않다
· 허가대상물질:	성분이포함되어있지않다
· 관리대상유해물질:	107-06-2 ETHYLENE DICHLORIDE
· 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 ETHYLENE DICHLORIDE
· 허가물질	107-06-2 ETHYLENE DICHLORIDE

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



- 신호어 위험
- 상표상에명확히위험성이표시된성분:
ETHYLENE DICHLORIDE

(9 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.02.21

개정: 2017.02.21

제품명: FORMVAR SOLUTION 1.00%

(8 쪽부터계속)

· **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
- 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗으시오. 피부를 물로 씻으시오/샤워하십시오.
- 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.
- (라벨 참조) 처치를 하시오.
- 잠금장치가 있는 저장장소에 저장 하시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· **국내규정:**· **사용제한에 대한 정보:**

노동자들은 이러한 위험물질을 내버리지 말아야 한다. 개별적인 경우에 관청은 예외를 허가할 수 있다.

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

16 그 밖의 참고사항

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

· **최초 작성일자:** 2017.02.21· **개정 횟수 및 최종 개정일자:** 1 / 2017.02.21· **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
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative

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Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 21.02.2017

Disemak semula pada 21.02.2017

1 Pengenalan bahan kimia dan pembekal

- **Pengenal pasti produk**
- **Nama dagang:** FORMVAR SOLUTION 1.00%
- **Nombor artikel:** 15830, 15830-25
- **Nombor CAS:**
107-06-2
- **Nombor EC:**
203-458-1
- **Nombor EU:**
602-012-00-7
- **Kegunaan yang disarankan bagi bahan dan sekatan penggunaan** Tiada maklumat lanjut yang diperoleh.
- **Penggunaan bahan/sediaan** Bahan kimia makmal

- **Perincian pembekal risalah data keselamatan**
- **Pengilang/Pembekal:**
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
- **Maklumat lanjut dapat diperoleh daripada:** Product safety department
- **Nombor telefon kecemasan:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Pengenalan bahaya

- **Pengelasan bahan atau campuran**



Nyalaan

Cec. M. Bkr 2 H225 Cecair dan wap amat mudah terbakar.



Bahaya kesihatan

Kars. 1B H350 Boleh menyebabkan kanser.



Toks. Akut 4 H302 Memudaratkan jika tertelan.

Kreng. Kulit 2 H315 Menyebabkan kerengsaan kulit.

Kreng. Mata 2 H319 Menyebabkan kerengsaan mata yang serius.

STOT SE 3 H335 Boleh menyebabkan kerengsaan pernafasan.

- **Melabelkan unsur**

- **Unsur label GHS** Bahan ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).

(Bersambung ke halaman 2)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 21.02.2017

Disemak semula pada 21.02.2017

Nama dagang: FORMVAR SOLUTION 1.00%

(Sambungan halaman 1)

· **Piktogram hazard**



· **Perkataan isyarat Bahaya**

· **Komponen pelabelan yang menentukan bahaya:**

1,2-Dikloroetana

· **Pernyataan hazard**

Cecair dan wap amat mudah terbakar.

Memudaratkan jika tertelan.

Menyebabkan kerengsaan kulit.

Menyebabkan kerengsaan mata yang serius.

Boleh menyebabkan kanser.

Boleh menyebabkan kerengsaan pernafasan.

· **Pernyataan langkah perlindungan**

Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.

JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.

JIKA TERKENA MATA: Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika ada dan dapat dilakukan dengan mudah. Teruskan membilas.

Rawatan khas (lihat label ini).

Simpan di tempat berkunci.

Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

· **Bahaya lain**

· **Keputusan penilaian PBT dan vPvB**

· **PBT:** Tidak berkenaan

· **vPvB:** Tidak berkenaan

3 Komposisi dan maklumat mengenai ramuan bahan kimia berbahaya

· **Ciri kimia: Bahan**

· **Keterangan No. CAS**

107-06-2 1,2-Dikloroetana

· **Nombor pengenalanpastian**

· **Nombor EC:** 203-458-1

· **Nombor EU:** 602-012-00-7

· **Komponen berbahaya :** Tidak sah

4 Langkah-langkah pertolongan cemas

· **Keterangan langkah pertolongan cemas**

· **Maklumat am:**

Gejala keracunan boleh berlaku selepas beberapa jam, maka rawatan perubatan hendaklah diberikan sekurang-kurangnya 48 jam selepas kemalangan.

· **Jika tersedut:**

Jika mangsa tidak sedarkan diri, letakkan pesakit dengan stabil dalam kedudukan mengiring untuk diangkat.

· **Jika terkena kulit:** Segera basuh dengan air dan sabun serta bilas bersih-bersih.

(Bersambung ke halaman 3)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 21.02.2017

Disemak semula pada 21.02.2017

Nama dagang: FORMVAR SOLUTION 1.00%

(Sambungan halaman 2)

- **Jika terkena mata:**
Bilas mata sambil membukanya di bawah air yang mengalir selama beberapa minit. Jika gejala berterusan, hubungi doktor.
- **Jika tertelan:** Segera hubungi doctor.
- **Maklumat untuk doktor:**
- **Gejala dan kesan paling penting, akut dan lewat** Tiadak maklumat lanjut yang diperoleh.
- **Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan**
Tiadak maklumat lanjut yang diperoleh.

5 Langkah-langkah pemadaman kebakaran

- **Bahan pemadam api**
- **Agen pemadam yang sesuai:** CO₂, pasir, serbuk pemadam kebakaran. Jangan gunakan air.
- **Agen pemadam yang tidak sesuai untuk tujuan keselamatan:** Air dalam pancutan penuh
- **Bahaya khusus yang timbul daripada bahan atau campuran** Tiadak maklumat lanjut yang diperoleh.
- **Panduan kepada pemadam kebakaran**
- **Kelengkapan perlindungan:** Tiada langkah khusus diperlukan.

6 Langkah-langkah pelepasan tidak sengaja

- **Langkah perlindungan diri, kelengkapan pelindung dan prosedur kecemasan**
Pakai kelengkapan perlindungan. Jauhkan mereka yang tidak dilindung dari kawasan tercemar.
- **Langkah perlindungan alam sekitar:** Jangan biarkannya memasuki pembentung/air permukaan atau tanah.
- **Kaedah dan bahan untuk pembendungan dan pembersihan:**
Serap dengan bahan cecair pengikat (pasir, diatomit, pengikat asid, pengikat semesta, habuk papan)
Lupuskan bahan tercemar sebagai sisa mengikut perkara 13.
Pastikan pengalihan mencukupi.
Jangan jirus dengan air atau agen pencuci akueus.
- **Rujukan ke bahagian lain**
Lihat Bahagian 7 untuk maklumat pengendalian yang selamat.
Lihat Bahagian 8 untuk maklumat kelengkapan perlindungan diri.
Lihat Bahagian 13 untuk maklumat pelupusan.

7 Pengendalian dan penyimpanan

- **Pengendalian:**
- **Langkah perlindungan untuk pengendalian selamat**
Pastikan pengalihan/ekzos yang mencukupi di tempat kerja.
Buka dan kendalikan bekas dengan cermat.
Elakkan pembentukan aerosol.
- **Maklumat kebakaran dan perlindungan daripada letupan:**
Jauhkan dari punca pencucuhan - Dilarang merokok.
Lindungi daripada haba.
Lindungi daripada cas-cas elektrostatik.
Pastikan alat perlindungan pernafasan sentiasa ada.
- **Keadaan untuk penyimpanan selamat, termasuk apa-apa ketakserasian**
- **Penyimpanan:**
- **Keperluan yang mesti dipenuhi oleh bilik stor dan ruang simpanan.** Simpan di tempat sejuk.
- **Maklumat penyimpanan di dalam satu tempat penyimpanan yang biasa:** Tidak diperlukan.
- **Maklumat lanjut tentang syarat penyimpanan:**
Pastikan bekas sentiasa bertutup rapat.

(Bersambung ke halaman 4)

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(Sambungan halaman 3)

- Simpan di tempat yang sejuk dan kering di dalam bekas bertutup rapat.
- Lindungi daripada haba dan pancaran terus cahaya matahari.
- **Kegunaan akhir yang khusus** Tiada maklumat lanjut yang diperolehi.

8 Kawalan pendedahan dan perlindungan diri

- **Maklumat tambahan tentang reka bentuk kemudahan teknikal:** Tiada maklumat lanjut, lihat perkara 7.

- **Parameter kawalan**

- **Ramuan dengan nilai had yang memerlukan pemantauan di tempat kerja:**

107-06-2	1,2-Dikloroetana
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PEL	Nilai jangka panjang: 40 mg/m ³ , 10 ppm
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- **Maklumat tambahan:** Senarai yang sah semasa pembuatan digunakan sebagai asas.
- **Kawalan pendedahan**
- **Kelengkapan perlindungan diri:**
- **Langkah perlindungan dan kebersihan am:**
 - Jauhkan daripada makanan, minuman dan makanan haiwan.
 - Segera tanggalkan semua pakaian yang tercemar dan kotor.
 - Basuh tangan sebelum berhenti rehat dan apabila kerja selesai.
 - Simpan pakaian perlindungan secara berasingan.
 - Elakkan daripada terkena mata dan kulit.
- **Perlindungan pernafasan:**
 - Jika berlaku pendedahan sekejap atau sedikit pencemaran, gunakan alat penapis pernafasan. Jika berlaku pendedahan yang intensif atau berpanjangan, gunakan alat pernafasan perlindungan serba lengkap.
- **Perlindungan tangan:**



Sarung tangan pelindung.

Bahan sarung tangan hendaklah telus dan kalis terhadap produk/bahan/sediaan.
Oleh sebab tiada ujian yang dijalankan, maka tiada syor bagi bahan sarung tangan yang boleh diberikan untuk produk/sediaan/campuran kimia.
Pemilihan bahan sarung tangan berdasarkan waktu penembusan, kadar pembauran dan degradasi.

- **Bahan sarung tangan**

Pemilihan sarung tangan yang sesuai bukan hanya bergantung pada bahannya, tetapi juga tanda kualiti lainnya serta perbezaannya daripada satu pengeluar dengan pengeluar yang lain.

- **Jangka masa penyerapan bahan sarung tangan**

Waktu kemunculan yang tepat hendaklah diperolehi pengeluar sarung tangan pelindung dan hendaklah dipatuhi.

- **Perlindungan mata:**



Gogal bertutup rapat

MY

(Bersambung ke halaman 5)

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9 Sifat fizikal dan kimia

<ul style="list-style-type: none"> · Maklumat tentang ciri fizik dan kimia · Maklumat Am · Rupa: <ul style="list-style-type: none"> Bentuk: Cecair Warna: Mengikut spesifikasi produk · Bau: Seperti eter · Ambang bau: Tidak ditentukan. 	
· Nilai pH:	Tidak ditentukan.
· Perubahan pada keadaan	
Takat lebur/takat beku	-35,5 °C
Takat didih awal dan julat didih	84 °C
· Takat kilat:	13 °C
· Kemudahbakaran (pepejal, gas)	Tidak berkenaan
· Suhu pencucuhan:	440 °C
· Suhu penguraian:	Tidak ditentukan.
· Suhu pengautocucuhan	Tidak ditentukan.
· Bahaya letupan:	Produk tidak mudah meletup. Walau bagaimanapun, pembentukan campuran udara/wap mungkin berlaku.
· Had letupan :	
Bawah:	6,2 Vol %
Atas:	16 Vol %
· Tekanan wap pada 20 °C:	87 hPa
· Ketumpatan pada 20 °C:	1,25 g/cm ³
· Ketumpatan bandingan	Tidak ditentukan.
· Ketumpatan wap	Tidak ditentukan.
· Kadar penyejatan	Tidak ditentukan.
· Keterlarutan dalam / Keterlarutcampuran dengan	
Air pada 20 °C:	8 g/l
· Pekali sekatan: n-oktanol/air	Tidak ditentukan.
· Kelikatan:	
Dinamik pada 20 °C:	0,8 mPas
Kinematik:	Tidak ditentukan.
Pelarut organik:	0,0 %
· Maklumat lain	Tiada maklumat lanjut yang diperoleh.

10 Kestabilan dan kereaktifan

- Kereaktifan Tiada maklumat lanjut yang diperoleh.
- Kestabilan kimia
- Penguraian terma/keadaan yang perlu dielakkan: Tiada penguraian jika digunakan mengikut spesifikasi.
- Kemungkinan tindak balas berbahaya Tiada tindak balas berbahaya yang diketahui.
- Keadaan yang perlu dielakkan Tiada maklumat lanjut yang diperoleh.
- Bahan tidak serasi: Tiada maklumat lanjut yang diperoleh.

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· **Produk penguraian yang berbahaya:** Tiada produk penguraian berbahaya yang diketahui.

11 Maklumat toksikologi

- **Maklumat tentang kesan toksikologi**
- **Ketoksikan akut:**

- **Nilai LD/LC50 yang berkaitan untuk pengelasan:**

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Oral	LD50	670 mg/kg (rat)
Derma	LD50	2800 mg/kg (rat)

- **Kesan kerengsaan primer:**
- **Kakisan atau kerengsaan kulit** Merengsa kepada kulit dan mukus membran.
- **Kerosakan atau kerengsaan mata yang serius** Kesan merengsa.
- **Pemekaan pernafasan / kulit** Tiada kesan pemekaan yang diketahui.
- **Maklumat bagi kumpulan berikut tentang kesan yang mungkin timbul.**
- **Kesan CMR (karsinogen, mutagen dan gangguan kesuburan)**
Kars. 1B

12 Maklumat ekologi

- **Ketoksikan**
- **Ketoksikan akuatik:** Tiada maklumat lanjut yang diperoleh.
- **Keterusan dan keterdegradasikan** Tiada maklumat lanjut yang diperoleh.
- **Kelakuan dalam sistem alam sekitar:**
- **Potensi bioakumulatif** Tiada maklumat lanjut yang diperoleh.
- **Mobiliiti di dalam tanah** Tiada maklumat lanjut yang diperoleh.
- **Maklumat tambahan ekologi:**
- **Nota am:**
Bahaya air kelas 3 (Peraturan Jerman) (Penilaian mengikut senarai): amat berbahaya kepada air
Jangan biarkan produk memasuki air tanah, saluran air atau sistem pembetulan, walaupun sedikit.
Bahaya kepada air minuman walaupun dalam amat sedikit produk kebocoran yang memasuki tanah
- **Keputusan penilaian PBT dan vPvB**
- **PBT:** Tidak berkenaan
- **vPvB:** Tidak berkenaan
- **Kesan buruk yang lain** Tiada maklumat lanjut yang diperoleh.

13 Maklumat pelupusan

- **Kaedah rawatan sisa**
- **Syor:**
Tidak boleh dilupuskan bersama dengan sampah isi rumah. Jangan biarkan produk memasuki sistem pembetulan.
- **Pembungkusan yang tidak bersih:**
- **Syor:** Pelupusan mestilah dijalankan menurut peraturan rasmi

MY

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(Sambungan halaman 6)

14 Maklumat pengangkutan

· Nombor UN	UN1184
· ADR, IMDG, IATA	
· Nama penghantaran UN yang betul	1184 ETHYLENE DICHLORIDE
· ADR	ETHYLENE DICHLORIDE
· IMDG, IATA	
· pengangkutan kelas bahaya	
· ADR	
	
· Kelas	3 Cecair mudah terbakar.
· Label	3+6.1
· IMDG	
	
· Class	3 Cecair mudah terbakar.
· Label	3/6.1
· IATA	
	
· Class	3 Cecair mudah terbakar.
· Label	3 (6.1)
· Kumpulan pembungkusan	
· ADR, IMDG, IATA	II
· Hazard persekitaran:	Tidak berkenaan
· Langkah perlindungan khas untuk pengguna	Amaran: Cecair mudah terbakar.
· Kod bahaya (Kemler):	336
· Nombor EMS:	3-03
· Segregation groups	Liquid halogenated hydrocarbons
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· Pengangkutan dalam pukal menurut Lampiran II MARPOL73/78 dan Kod IBC	Tidak berkenaan
· Pengangkutan/Maklumat Tambahan:	
· ADR	
· 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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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> · "Peraturan Model" UN: 	<p>UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II</p>

15 Maklumat pengawalseliaan

- **Peraturan/undang-undang keselamatan, kesihatan dan persekitaran khusus untuk bahan atau campuran tersebut**
- **Unsur label GHS** Bahan ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- **Piktogram hazard**



GHS02 GHS07 GHS08

- **Perkataan isyarat Bahaya**
- **Komponen pelabelan yang menentukan bahaya:**
1,2-Dikloroetana
- **Pernyataan hazard**
Cecair dan wap amat mudah terbakar.
Memudaratkan jika tertelan.
Menyebabkan kerengsaan kulit.
Menyebabkan kerengsaan mata yang serius.
Boleh menyebabkan kanser.
Boleh menyebabkan kerengsaan pernafasan.
- **Pernyataan langkah perlindungan**
Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.
JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.
JIKA TERKENA MATA: Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika ada dan dapat dilakukan dengan mudah. Teruskan membilas.
Rawatan khas (lihat label ini).
Simpan di tempat berkunci.
Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.
- **Peraturan kebangsaan:**
- **Maklumat had kegunaan:**
Pekerja tidak dibenarkan terdedah kepada bahan berbahaya ini. Pengecualian boleh dibuat oleh pihak berkuasa dalam kes tertentu.
- **Penilaian keselamatan bahan kimia:** Penilaian Keselamatan Bahan Kimia belum dilakukan.

16 Maklumat lain

Maklumat ini berdasarkan maklumat kami yang terkini. Walau bagaimanapun, ini tidak akan menjadi jaminan bagi apa-apa ciri produk yang khusus dan tidak akan mewujudkan hubungan kontraktual yang sah dari segi undang-undang.

(Bersambung ke halaman 9)

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(Sambungan halaman 8)

· Singkatan dan akronim:

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

ELINCS: European List of Notified Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Cec. M. Bkr 2: Cecair mudah terbakar – Kategori 2

Toks. Akut 4: Ketoksikan akut – Kategori 4

Kreng. Kulit 2: Kakisan atau kerengsaan kulit – Kategori 2

Kreng. Mata 2: Kerosakan mata atau kerengsaan mata yang serius – Kategori 2

Kars. 1B: Kekarsinogenan – Kategori 1B

STOT SE 3: Ketoksikan organ sasaran khusus (pendedahan tunggal) – Kategori 3

-MY-

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

- **1.1 Identificador do produto**
- **Nome comercial:** FORMVAR SOLUTION 1.00%
- **Código do produto:** 15830, 15830-25
- **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.

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.

P321 Tratamento específico (ver no presente rótulo).

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.º**

107-06-2 1,2-dicloroetano

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

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PT

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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.
- **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.

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*Proteger do calor.**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.

· **Outros avisos sobre as condições de armazenagem:**

Manter o recipiente hermeticamente fechado.

Armazenar em recipientes bem fechados, em local fresco e seco.

Proteger do calor e da radiação directa do sol.

· **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:**

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VLE	Valor para exposição longa: 10 ppm A4; Lesão hepática; náuseas
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· **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.

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· **Protecção dos olhos:**

Óculos de protecção totalmente fechados

SECÇÃO 9: Propriedades físico-químicas

· **9.1 Informações sobre propriedades físicas e químicas de base**· **Informações gerais**· **Aspetto:****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 repartição: n-octanol/água:**

Não classificado.

· **Viscosidade:****Dinâmico em 20 °C:**

0,8 mPas

Cinemático:

Não classificado.

· **Percentagem de solvente:****Solventes orgânicos:**

0,0 %

VOC (UE)

0,00 %

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· 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.
- 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:

107-06-2 1,2-dicloroetano

por via oral	LD50	670 mg/kg (rat)
por via dérmica	LD50	2800 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.

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- **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.

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 | UN1184 |
| · ADR, IMDG, IATA | |
| · 14.2 Designação oficial de transporte da ONU | |
| · ADR | 1184 DICLORETO DE ETILENO |
| · IMDG, IATA | ETHYLENE DICHLORIDE |
| · 14.3 Classes de perigo para efeitos de transporte | |
| · ADR | |
| | |
| · Classe | 3 Líquidos inflamáveis |
| · Rótulo | 3+6.1 |
| · IMDG | |
| | |
| · Class | 3 Líquidos inflamáveis |
| · Label | 3/6.1 |
| · IATA | |
| | |
| · Class | 3 Líquidos inflamáveis |
| · Label | 3 (6.1) |

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· 14.4 Grupo de embalagem · ADR, IMDG, IATA	II
· 14.5 Perigos para o ambiente:	<i>Não aplicável.</i>
· 14.6 Precauções especiais para o utilizador · Nº Kemler: · Nº EMS: · Segregation groups · Stowage Category · Stowage Code	<i>Atenção: Líquidos inflamáveis</i> 336 3-03 <i>Liquid halogenated hydrocarbons</i> B <i>SW2 Clear of living quarters.</i>
· 14.7 Transporte a granel em conformidade com o anexo II da Convenção MARPOL e o Código IBC	<i>Não aplicável.</i>
· Transporte/outras informações:	
· ADR · Quantidades Limitadas (LQ) · Quantidades exceptuadas (EQ)	II Código: E2 <i>Quantidade líquida máxima por embalagem interior: 30 ml</i> <i>Quantidade líquida máxima por embalagem exterior: 500 ml</i>
· Categoria de transporte · Código de restrição em túneis	2 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	II Code: E2 <i>Maximum net quantity per inner packaging: 30 ml</i> <i>Maximum net quantity per outer packaging: 500 ml</i>
· 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)**

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

· **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 excepções.

· **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.**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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Líquidos 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 1.00%

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

· **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.

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.

P321 Se necesita un tratamiento específico (ver en esta etiqueta).

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

107-06-2 1,2-dicloroetano

· Número(s) de identificación

· Número CE: 203-458-1

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

· Componentes peligrosos: suprimido

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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.
 - Proteger del calor.
 - Tomar medidas contra las cargas electrostáticas.
 - Tener preparados los aparatos respiratorios.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
 - **Exigencias con respecto al almacén y los recipientes:** Almacenar en un lugar fresco.
 - **Normas en caso de un almacenamiento conjunto:** No es necesario.
 - **Indicaciones adicionales sobre las condiciones de almacenamiento:**
 - Mantener el recipiente cerrado herméticamente.
 - Almacenarlo en envases bien cerrados en un lugar fresco y seco.
 - Proteger del calor y de la luz directa del sol.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

- **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:**

107-06-2 1,2-dicloroetano

LEP	Valor de larga duración: 20 mg/m ³ , 5 ppm r, véase Capítulo 8
-----	--

- **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.

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

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

· **Protección de 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:**

Etéreo

· **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

· **Coefficiente de reparto: n-octanol/agua:**

No determinado.

· **Viscosidad:**

Dinámica a 20 °C:

0,8 mPas

Cinemática:

No determinado.

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- **Concentración del disolvente:**
 - Disolventes orgánicos: 0,0 %
 - VOC (CE) 0,00 %
- **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	2800 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.

(se continua en página 7)

Ficha de datos de seguridad según 1907/2006/CE, Artículo 31

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Revisión: 21.02.2017

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(se continua en página 6)

- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **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

(se continua en página 8)

Ficha de datos de seguridad

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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) · Categoría de transporte · Código de restricción del túnel	1L Código: E2 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 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
· "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)

107-06-2	1,2-dicloroetano
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- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII Restricciones:** 3, 28

· 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.

(se continua en página 9)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

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(se continua en página 8)

· **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

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Líquidos inflamables – Categoría 2

Acute Tox. 4: Toxicidad aguda – Categoría 4

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

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

Carc. 1B: Carcinogenicidad – Categoría 1B

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

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2017.02.21

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1 การระบุสาร/ การทำ/ และของบริษัท / บริษัทที่เข้าถือครอง

- 1.1 ลักษณะเฉพาะของผลิตภัณฑ์
- ชื่อทางการค้า **FORMVAR SOLUTION 1.00%**
- เลขที่รายชื่อ 15830, 15830-25
- 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)

TH

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2017.02.21

การปรับปรุงใหม่ : 2017.02.21

ชื่อทางการค้า FORMVAR SOLUTION 1.00%

(ต่อหน้า 1)

· ภาพสัญลักษณ์สิ่งที่อันตราย



GHS02 GHS07 GHS08

· สัญญาอันตราย

· ส่วนประกอบที่ระบุอันตรายบนฉลาก

ETHYLENE DICHLORIDE

· ประกาศสิ่งที่อันตราย

H225 ของเหลวและไอที่ไวไฟสูง

H302 เป็นอันตรายหากกลืนเข้าไป

H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง

H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา

H350 อาจเป็นเหตุให้เกิดมะเร็ง

H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

· ประกาศการป้องกันระดับระวังภัย

P210 เก็บให้ห่างจากความร้อน/ ประกายไฟ/ เปลวไฟ/ ผิวที่ร้อน - ห้ามสูบบุหรี่

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

P305+P351+P338 หากเข้าตา : ชะด้วยน้ำอย่างระมัดระวังเป็นเวลาหลายๆ นาที ถอดคอนแทกซ์เลนส์ถ้ายังอยู่ที่เดิมและ
สะดวกที่จะทำก็ให้ชะล้างต่อไป

P321 การบำบัดรักษาเฉพาะ (ดูฉลาก)

P405 เก็บในที่ปลอดภัย

P501 ทิ้งสิ่งที่ย่อย/ภาชนะที่บรรจุตามกฎหมายของท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ

· 2.3 อันตรายอื่นๆ

· ผลของ PBT และการประเมิน vPvB

· PBT: ไม่สามารถใช้ได้

· vPvB: ไม่สามารถใช้ได้

3 ส่วนประกอบ/ ข้อมูลรายละเอียดของส่วนผสมต่างๆ

· 3.1 คุณสมบัติทางเคมี: สาร

· การระบุเลขที่ CAS

107-06-2 ETHYLENE DICHLORIDE

· เลขที่ที่ระบุ

· จำนวน EC: 203-458-1

· เลขที่ EU: 602-012-00-7

· ส่วนประกอบที่มีอันตราย ยกเลิก

4 มาตรการการปฐมพยาบาลเบื้องต้น

· 4.1 คำอธิบายถึงมาตรการปฐมพยาบาล

· ข้อมูลรายละเอียดทั่วไป

อาการจากพิษอาจเกิดขึ้นหลังจากนั้นหลายชั่วโมงดังนั้นจะต้องเฝ้าติดตามอาการทางการแพทย์อย่างน้อย 48 ชั่วโมงหลังจากอุบัติเหตุ

· **หลังจากการสูดหายใจเข้าไป** ในกรณีที่คนไข้ไม่รู้สึกตัวให้ขนย้ายคนไข้อย่างมั่นคงในท่าตะแคงด้านข้าง· **หลังจากการสัมผัสผิวหนัง** ล้างด้วยน้ำและสบู่แล้วฟอกให้ทั่วทันที· **หลังจากการสัมผัสสุดตา** ชะตาที่เปิดอยู่ใต้น้ำที่ท่าล้างไหลเป็นเวลาหลายนาทีถ้าอาการไม่ดีขึ้นให้ปรึกษาแพทย์· **หลังจากการกลืนเข้าไป:** พบแพทย์โดยทันที

(ต่อหน้า 3)

TH

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2017.02.21

การปรับปรุงใหม่ : 2017.02.21

ชื่อทางการค้า FORMVAR SOLUTION 1.00%

(ต่อที่หน้า 2)

- 4.2 อาการสำคัญส่วนใหญ่และผลกระทบ ทั้งชนิดเฉียบพลันและค่อยๆ แสดงอาการ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 4.3 ข้อบ่งชี้ของอาการที่ต้องเข้ารับการรักษาจากแพทย์ทันทีและการบำบัดพิเศษที่จำเป็น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

5 มาตรการการดับเพลิง

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

6 มาตรการลดอุบัติเหตุ

- 6.1 การป้องกันส่วนบุคคล อุปกรณ์ป้องกัน และขั้นตอนดำเนินการเมื่อเกิดกรณีฉุกเฉิน สวมอุปกรณ์ป้องกันภัยกันคนที่ไม่ใช้อุปกรณ์ป้องกันออกไป
- 6.2 การให้ความคุ้มครองสิ่งแวดล้อมล่วงหน้า: อย่าปล่อยให้เข้าไปในท่อน้ำทิ้ง/ น้ำบนดินหรือใต้ดิน
- 6.3 วิธีดำเนินการและวิธีสำหรับการบรรจุและการทำความสะอาด: ดูดซับด้วยวัสดุที่สามารถยึดของเหลวไว้ (ทรายโตะโตะไม้ที่ตัดด้วยตัวยึดเกาะกรดตัวยึดทั่วๆ ไปซีลีย) ทิ้งวัสดุที่ปนเปื้อนเป็นของเสียตามรายการในบัญชี 13 ตรวจสอบให้แน่ใจว่ามีการระบายอากาศที่ดีพอ อย่าฉีดด้วยน้ำหรือน้ำยาทำความสะอาดที่มีน้ำเป็นส่วนผสม
- 6.4 การอ้างอิงถึงส่วนอื่น ดูข้อมูลรายละเอียดเรื่องความปลอดภัยในการขนถ่ายจากส่วนที่ 7 ดูข้อมูลรายละเอียดเรื่องอุปกรณ์ป้องกันส่วนบุคคลจากส่วนที่ 8 ดูข้อมูลรายละเอียดเรื่องการจัดจากส่วนที่ 13

7 การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันล่วงหน้าสำหรับการจัดการด้านความปลอดภัย ทำให้แน่ใจว่าสถานที่ทำงานมีการระบายอากาศ/ ไอเสียที่ดี เปิดและถือภาชนะรองรับอย่างระมัดระวัง ป้องกันการเกิดละอองสารฟุ้ง
- ข้อมูลรายละเอียดเกี่ยวกับการป้องกันอัคคีภัยและการระเบิด ออกห่างจากแหล่งที่ติดไฟอย่าสูบบุหรี่ ป้องกันให้พ้นจากความร้อน ป้องกันให้พ้นจากประจุไฟฟ้าสถิตย์ เก็บอุปกรณ์ป้องกันสำหรับการช่วยหายใจให้มีพร้อมใช้งาน
- 7.2 เงื่อนไขในการเก็บรักษาอย่างปลอดภัย, รวมถึงสิ่งที่เข้ากันไม่ได้ใดๆ
- การจัดเก็บ
- ข้อกำหนดที่ต้องปฏิบัติตามสำหรับห้องเก็บและภาชนะบรรจุ เก็บในบริเวณที่เย็น
- ข้อมูลรายละเอียดด้านการจัดเก็บในสถานที่จัดเก็บรวม ไม่ได้กำหนด
- ข้อมูลรายละเอียดเพิ่มเติมด้านสภาพการจัดเก็บ เก็บโดยปิดผนึกอย่างแน่นหนา เก็บในที่เย็นสภาพแห้งในภาชนะบรรจุที่ปิดผนึกอย่างดี ป้องกันให้พ้นจากความร้อนและแสงแดดส่อง

(ต่อที่หน้า 4)

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แผนข้อมูลความปลอดภัย

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ชื่อทางการค้า FORMVAR SOLUTION 1.00%

(ต่อที่หน้า 3)

- 7.3 การระบุถึงการสิ้นสุดการใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

8 การควบคุมการทิ้งในลักษณะเปิด / การป้องกันภัยส่วนบุคคล

- ข้อมูลรายละเอียดเสริมสำหรับการออกแบบสิ่งอำนวยความสะดวกทางเทคนิค ไม่มีข้อมูลนอกเหนือจากนี้ดูรายการ 7

· 8.1 การควบคุมตัวแปร

- ส่วนผสมพร้อมค่าขอบเขตที่ต้องเฝ้าดูในสถานที่ปฏิบัติงาน

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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 รายการถูกต้องระหว่างที่จัดทำโดยอาศัยการปฏิบัติงานเป็นหลัก

· 8.2 การควบคุมการสัมผัส

· อุปกรณ์ป้องกันภัยส่วนบุคคล

· มาตรการการป้องกันและสุขอนามัยทั่วไป

- เก็บให้ห่างจากสิ่งของที่เป็นอาหารเครื่องดื่มและอาหารสัตว์
- ให้ถอดเสื้อผ้าที่เปื้อนและเช็ดออกทันที
- ล้างมือก่อนที่จะหยุดพักและเมื่อสิ้นสุดเวลาทำงาน
- เก็บชุดป้องกันแยกต่างหาก
- หลีกเลี่ยงการสัมผัสถูกตาและผิวหนัง

· การป้องกันการสูดหายใจเข้าไป

- ในกรณีที่อยู่เป็นเวลาสั้นหรืออากาศเป็นพิษระดับต่ำใช้หน้ากากกรองเพื่อช่วยหายใจในกรณีที่มีความเข้มข้นสูงหรืออยู่เป็นเวลานานให้ใช้เครื่องป้องกันที่มีอุปกรณ์ช่วยหายใจในตัว

· การป้องกันมือ



ถุงมือป้องกัน

วัสดุของถุงมือจะต้องไม่ให้อากาศผ่านเข้าออกและทนทานต่อผลิตภัณฑ์/ สาร/ การผลิต เนื่องจากขาดการทดสอบจึงไม่มีคำแนะนำสำหรับวัสดุที่ใช้ทำถุงมือสำหรับผลิตภัณฑ์/ การผลิต/ ของผสมเคมี เลือกวัสดุสำหรับถุงมือโดยพิจารณาจากเวลาที่ใช้ในการซึมผ่านอัตราการแพร่และการเสื่อม

· วัสดุที่ใช้ทำถุงมือ

- การเลือกใช้ถุงมือที่เหมาะสมไม่เพียงแต่ขึ้นอยู่กับวัสดุแต่ยังขึ้นกับมาตรฐานด้านคุณภาพและข้อแตกต่างระหว่างผู้ผลิตแต่ละแห่ง

· เวลาที่ใช้ในการทะลุผ่านวัสดุที่ใช้ทำถุงมือ

- ผู้ผลิตถุงมือป้องกันจะต้องทดสอบหาเวลานั่นอนที่ใช้ในการทะลุผ่านและจะต้องมีการตรวจสอบติดตาม

· การป้องกันตา



แว่นตาที่ขอบปิดสนิท

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(ต่อที่หน้า 5)

แผ่นข้อมูลความปลอดภัย

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(ต่อที่หน้า 4)

9 คุณสมบัติทางกายภาพและเคมี

<ul style="list-style-type: none"> 9.1 ข้อมูลคุณสมบัติพื้นฐานทางกายภาพและเคมี ข้อมูลรายละเอียดทั่วไป ลักษณะ : <ul style="list-style-type: none"> รูปสีฐาน สี ของเหลว กลิ่น คล้ายอีเทอร์ เกณฑ์กลิ่น : ไม่ได้กำหนดไว้. 	
· ค่า pH	ไม่ได้กำหนดไว้.
· การเปลี่ยนสถานะ	
จุดหลอมเหลว/ ขอบเขตการหลอมละลาย	-35.5 °C
จุดเดือด/ ขอบเขตการเดือด	84 °C
· จุดวาบไฟ	13 °C
· ความสามารถติดไฟ (ของแข็งแกส)	ไม่สามารถใช้ได้
· อุณหภูมิจุดระเบิด	440 °C
· อุณหภูมิสลายตัว	ไม่ได้กำหนดไว้.
· การเผาไหม้ด้วยตัวเอง	ไม่ได้กำหนดไว้.
· อันตรายจากการระเบิด	ผลิตภัณฑ์ไม่ได้เป็นสารระเบิดอย่างไรก็ตามอาจเป็นไปได้ที่การผสมของอากาศ/ ไอจะทำให้เกิดการ
· ขอบเขตการระเบิด	
ขั้นต่ำ	6.2 Vol %
ขั้นสูง	16 Vol %
· ความดันไอ ที่ 20 °C	87 hPa
· ความหนาแน่น ที่ 20 °C	1.25 g/cm ³
· ความหนาแน่นสัมพัทธ์	ไม่ได้กำหนดไว้.
· ความหนาแน่นของไอ	ไม่ได้กำหนดไว้.
· อัตราการระเหย	ไม่ได้กำหนดไว้.
· ความสามารถในการละลายใน / ความสามารถผสมเป็นสารละลายเนื้อเดียวทุกส่วนผสมกับน้ำ ที่ 20 °C	8 g/l
· สัมประสิทธิ์การแยกตัว (เฮน-ออกตานอล/น้ำ)	ไม่ได้กำหนดไว้.
· ความหนืด (ไดนามิก) พลศาสตร์ ที่ 20 °C	0.8 mPas
(คิเนเมติก) จลนศาสตร์	ไม่ได้กำหนดไว้.
· ปริมาณส่วนประกอบตัวทำละลายตัวทำละลายอินทรีย์	0.0 %
VOC (EC)	0.00 %
· 9.2 ข้อมูลอื่นๆ	ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

10 ความเสถียรและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาโต้ตอบ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.2 เสถียรภาพทางเคมี
- การสลายตัวด้วยความร้อน / เงื่อนไขที่ต้องหลีกเลี่ยง ไม่มีการสลายตัวถ้าใช้ตามรายละเอียดที่ระบุไว้

(ต่อที่หน้า 6)

แผนข้อมูลความปลอดภัย

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(ต่อหน้า 5)

- 10.3 ความเป็นไปได้ของการเกิดปฏิกิริยาอันตราย ไม่มีปฏิกิริยาเป็นอันตรายที่รู้จัก
- 10.4 เงื่อนไขเพื่อการหลีกเลี่ยง ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.5 วัสดุที่เข้ากันไม่ได้: ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.6 อันตรายจากการสลายตัวของผลิตภัณฑ์: ไม่มีสารจากการสลายตัวที่เป็นอันตรายที่รู้จัก

11 ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

- 11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา
- ความเป็นพิษอย่างสาหัส:
เป็นอันตรายหากกลืนเข้าไป

- การจัดแบ่งตามค่า LD/LC50

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ทางปาก	LD50	670 mg/kg (rat)
ทางผิวหนัง	LD50	2800 mg/kg (rat)

- อาการระคายเคืองเบื้องต้น
- บนผิวหนัง
เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
- ที่ดวงตา
เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
- การทำให้แพ้

12 ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา

- 12.1 ความเป็นพิษ
- ความเป็นพิษที่เกี่ยวข้องกับน้ำ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.2 การคงอยู่และการย่อยสลาย ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.4 การเปลี่ยนแปลงในดิน ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- ข้อมูลรายละเอียดเสริมเกี่ยวกับนิเวศวิทยา
- หมายเหตุทั่วไป
เป็นอันตรายต่อน้ำชั้น 3 (กฎข้อบังคับของเยอรมัน)(การประเมินค่าตามรายการ):เป็นอันตรายสูงสุดกับน้ำ
อย่าปล่อยให้ผลิตภัณฑ์ไปถึงน้ำผิวดินเส้นทางน้ำหรือระบบระบายน้ำเสียแม้ว่าจะเป็นปริมาณเล็กน้อยเท่านั้น
เป็นอันตรายต่อน้ำดื่มแม้จะร่วงลงในพื้นที่เป็นปริมาณที่น้อยมากก็ตาม
- 12.5 ผลของ PBT และการประเมิน vPvB
- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้
- 12.6 ผลข้างเคียงอื่นๆ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

13 การพิจารณาการกำจัด

- 13.1 วิธีการกำจัดของเสีย
- คำแนะนำ ต้องไม่ทิ้งไปพร้อมกับขยะจากบ้านเรือนอย่าปล่อยให้ผลิตภัณฑ์เข้าถึงระบบระบายน้ำเสีย
- ภาชนะบรรจุที่ยังไม่ได้สร้างความสะอาด
- คำแนะนำ การกำจัดจะต้องทำตามกฎระเบียบที่เป็นทางการ

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(ต่อหน้า 7)

แผ่นข้อมูลความปลอดภัย

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(ต่อที่หน้า 6)

14 ข้อมูลรายละเอียดในการขนส่ง

<ul style="list-style-type: none"> · 14.1 เลขที่ UN · ADR, IMDG, IATA 	UN1184
<ul style="list-style-type: none"> · 14.2 ชื่อการจัดส่งสินค้าที่เหมาะสมของ UN · ADR · IMDG, IATA 	1184 ETHYLENE DICHLORIDE ETHYLENE DICHLORIDE
<ul style="list-style-type: none"> · 14.3 ชั้นเรียนอันตรายจากการขนส่ง · ADR 	
 <ul style="list-style-type: none"> · ประเภท · ฉลากสิ่งที่เป็นอันตราย 	3 ของเหลวติดไฟได้ 3+6.1
<ul style="list-style-type: none"> · IMDG 	
 <ul style="list-style-type: none"> · Class · Label 	3 ของเหลวติดไฟได้ 3/6.1
<ul style="list-style-type: none"> · IATA 	
 <ul style="list-style-type: none"> · Class · Label 	3 ของเหลวติดไฟได้ 3 (6.1)
<ul style="list-style-type: none"> · 14.4 กลุ่มของภาชนะบรรจุ · ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · 14.5 สิ่งที่เป็นอันตรายต่อสภาพแวดล้อม 	ไม่สามารถใช้ได้
<ul style="list-style-type: none"> · 14.6 การป้องกันพิเศษล่วงหน้าสำหรับผู้ใช้ · รหัสความอันตราย: · หมายเลข EMS · Segregation groups · Stowage Category · Stowage Code 	คำเตือน !: ของเหลวติดไฟได้ 336 3-03 Liquid halogenated hydrocarbons B SW2 Clear of living quarters.
<ul style="list-style-type: none"> · 14.7 การขนส่งขนาดใหญ่ตามภาคผนวก 2 ของ MARPOL73/78 และรหัส IBC 	ไม่สามารถใช้ได้
<ul style="list-style-type: none"> · การขนส่ง/ข้อมูลรายละเอียดเสริม 	
<ul style="list-style-type: none"> · ADR · ปริมาณที่จำกัด (LQ) · Excepted quantities (EQ) 	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"> · หมวดหมู่การขนส่ง 	2

(ต่อที่หน้า 8)

แผ่นข้อมูลความปลอดภัย

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(ต่อที่หน้า 7)

· 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
· “กฎระเบียบต้นแบบ” ของ UN	UN 1184 ETHYLENE DICHLORIDE, 3 (6.1), II

15 ข้อมูลรายละเอียดของกฎระเบียบ

- 15.1 ความปลอดภัย สุขภาพและระเบียบ/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม
- 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
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 2: Flammable liquids – Category 2
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Carc. 1B: Carcinogenicity – Category 1B
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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