

Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

1 Identification

- **Product identifier**
- **Trade name:** EMS CONDUCTIVE GOLD-PASTE
- **Article number:** 12642
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **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. 1A H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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

Gold

toluene

Ethyl Alcohol, denatured

(R)-p-mentha-1,8-diene

- **Hazard statements**

Highly flammable liquid and vapor.

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*Harmful if inhaled.**Causes skin irritation.**May cause an allergic skin reaction.**May cause cancer.**Suspected of damaging fertility or the unborn child.**May cause damage to organs through prolonged or repeated exposure.**May be fatal if swallowed and enters airways.***· Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat/sparks/open flames/hot surfaces. No smoking.**Keep container tightly closed.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Do not breathe dust/fume/gas/mist/vapors/spray.**Wash thoroughly after handling.**Use only outdoors or in a well-ventilated area.**Contaminated work clothing must not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**IF on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**Call a POISON CENTER/doctor if you feel unwell.**Get medical advice/attention if you feel unwell.**Specific treatment (see on this label).**Do NOT induce vomiting.**If skin irritation or rash occurs: Get medical advice/attention.**Take off contaminated clothing and wash it before reuse.**Wash contaminated clothing before reuse.**In case of fire: Use for extinction: CO₂, powder or water spray.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.***· Classification system:****· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 3

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = 2

Fire = 3

Reactivity = 0

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

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

7440-57-5	Gold	50-100%
108-88-3	toluene	2.5-10%
64-17-5	Ethyl Alcohol, denatured	2.5-10%
141-78-6	ethyl acetate	2.5-10%
67-63-0	propan-2-ol	≤ 2.5%
76-22-2	bornan-2-one	≤ 2.5%
5989-27-5	(R)-p-mentha-1,8-diene	≤ 2.5%

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:**
Supply fresh air and to be sure call for a doctor.
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.
- **After swallowing:** If symptoms persist consult 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:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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.

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*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:**

7440-57-5	Gold	0.46 mg/m ³
108-88-3	toluene	67 ppm
64-17-5	Ethyl Alcohol, denatured	1,800 ppm
141-78-6	ethyl acetate	1,200 ppm
67-63-0	propan-2-ol	400 ppm
5989-27-5	(R)-p-mentha-1,8-diene	15 ppm

· PAC-2:

7440-57-5	Gold	5.1 mg/m ³
108-88-3	toluene	560 ppm
64-17-5	Ethyl Alcohol, denatured	3300* ppm
141-78-6	ethyl acetate	1,700 ppm
67-63-0	propan-2-ol	2000* ppm
5989-27-5	(R)-p-mentha-1,8-diene	67 ppm

· PAC-3:

7440-57-5	Gold	30 mg/m ³
108-88-3	toluene	3700* ppm
64-17-5	Ethyl Alcohol, denatured	15000* ppm
141-78-6	ethyl acetate	10000** ppm
67-63-0	propan-2-ol	12000** ppm
5989-27-5	(R)-p-mentha-1,8-diene	170 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.*

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- 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.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
 The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
 At this time, the other constituents have no known exposure limits.

108-88-3 toluene

PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV	Long-term value: 75 mg/m ³ , 20 ppm BEI

64-17-5 Ethyl Alcohol, denatured

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1880 mg/m ³ , 1000 ppm

141-78-6 ethyl acetate

PEL	Long-term value: 1400 mg/m ³ , 400 ppm
REL	Long-term value: 1400 mg/m ³ , 400 ppm
TLV	Long-term value: 1440 mg/m ³ , 400 ppm

67-63-0 propan-2-ol

PEL	Long-term value: 980 mg/m ³ , 400 ppm
REL	Short-term value: 1225 mg/m ³ , 500 ppm Long-term value: 980 mg/m ³ , 400 ppm
TLV	Short-term value: 984 mg/m ³ , 400 ppm Long-term value: 492 mg/m ³ , 200 ppm BEI

76-22-2 bornan-2-one

PEL	Long-term value: 2 mg/m ³
REL	Long-term value: 2 mg/m ³
TLV	Short-term value: 19 mg/m ³ , 3 ppm Long-term value: 12 mg/m ³ , 2 ppm

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· **Ingredients with biological limit values:**

108-88-3 toluene

BEI 0.02 mg/L
 Medium: blood
 Time: prior to last shift of workweek
 Parameter: Toluene

0.03 mg/L
 Medium: urine
 Time: end of shift
 Parameter: Toluene

0.3 mg/g creatinine
 Medium: urine
 Time: end of shift
 Parameter: o-Cresol with hydrolysis (background)

67-63-0 propan-2-ol

BEI 40 mg/L
 Medium: urine
 Time: end of shift at end of workweek
 Parameter: Acetone (background, nonspecific)

· **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 skin.
 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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.

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· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Color:	Gold colored
Odor:	Mild
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	75 °C (167 °F)

· Flash point: 4 °C (39 °F)

· Flammability (solid, gaseous): Not flammable.

· Ignition temperature: 425 °C (797 °F)

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

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

· Explosion limits:

Lower:	1.2 Vol %
Upper:	7.0 Vol %

· Vapor pressure at 20 °C (68 °F): 29 hPa (22 mm Hg)

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

Organic solvents:	23.0 %
VOC content:	23.0 %
	230.0 g/l / 1.92 lb/gal

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· Other information

No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-diene

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

· **Primary irritant effect:**· **on the skin:** Irritant to skin and mucous membranes.· **on the eye:** No irritating effect.· **Sensitization:** Sensitization possible through skin contact.· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

108-88-3	toluene	3
64-17-5	Ethyl Alcohol, denatured	1
67-63-0	propan-2-ol	3
5989-27-5	(R)-p-mentha-1,8-diene	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
 Water hazard class 1 (Self-assessment): slightly hazardous for water
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
 Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

- | | |
|-------------------------------------|---|
| · UN-Number | UN1993 |
| · DOT, ADR, IMDG, IATA | |
| · UN proper shipping name | Flammable liquids, n.o.s. (Toluene, Ethyl acetate) |
| · DOT | 1993 Flammable liquids, n.o.s. (Toluene, Ethyl acetate) |
| · ADR | FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE) |
| · IMDG, IATA | |
| · Transport hazard class(es) | |
| · DOT | |
| | |
| · Class | 3 Flammable liquids |

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· **Label** 3, 6.1· **ADR**

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

· **IMDG**

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

· **IATA**

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

· **Packing group**· **DOT, ADR, IMDG, IATA** II· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **Danger code (Kemler):** 336· **EMS Number:** F-E, S-E· **Stowage Category** B

· **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

· **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 "Model Regulation": UN 1993 FLAMMABLE LIQUIDS, N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II

15 Regulatory information

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

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

108-88-3 toluene

67-63-0 propan-2-ol

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

108-88-3 toluene

64-17-5 Ethyl Alcohol, denatured

· Carcinogenic categories

· EPA (Environmental Protection Agency)

108-88-3 toluene

II

· TLV (Threshold Limit Value established by ACGIH)

108-88-3 toluene

A4

64-17-5 Ethyl Alcohol, denatured

A3

67-63-0 propan-2-ol

A4

76-22-2 bornan-2-one

A4

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

None of the ingredients is listed.

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

· Hazard pictograms



GHS02



GHS07



GHS08

- Signal word Danger

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· Hazard-determining components of labeling:

Gold
toluene
Ethyl Alcohol, denatured
(R)-p-mentha-1,8-diene

· Hazard statements

Highly flammable liquid and vapor.
Harmful if inhaled.
Causes skin irritation.
May cause an allergic skin reaction.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

· Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
Call a POISON CENTER/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Specific treatment (see on this label).
Do NOT induce vomiting.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO₂, powder or water spray.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **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** 07/18/2017 / -

· 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

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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
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety **Health**
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 1A: Carcinogenicity – Category 1A
Repr. 2: Reproductive toxicity – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1

US

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according to WHS Regulations

Printing date 18.07.2017

Revision: 18.07.2017

1 Identification

- **Product identifier**
- **Trade name:** EMS CONDUCTIVE GOLD-PASTE
- **Article number:** 12642
- **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:**

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.



GHS08 health hazard

Carc. 1A H350 May cause cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

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· **Hazard pictograms**· **Signal word** *Danger*· **Hazard-determining components of labelling:***Gold**toluene**Ethyl Alcohol, denatured**(R)-p-mentha-1,8-diene*· **Hazard statements***Highly flammable liquid and vapour.**Harmful if inhaled.**Causes skin irritation.**May cause an allergic skin reaction.**May cause cancer.**Suspected of damaging fertility or the unborn child.**May cause damage to organs through prolonged or repeated exposure.**May be fatal if swallowed and enters airways.*· **Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat/sparks/open flames/hot surfaces. No smoking.**Keep container tightly closed.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Do not breathe dust/fume/gas/mist/vapours/spray.**Wash thoroughly after handling.**Use only outdoors or in a well-ventilated area.**Contaminated work clothing should not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**Call a POISON CENTER/doctor if you feel unwell.**Get medical advice/attention if you feel unwell.**Specific treatment (see on this label).**Do NOT induce vomiting.**If skin irritation or rash occurs: Get medical advice/attention.**Take off contaminated clothing and wash it before reuse.**Wash contaminated clothing before reuse.**In case of fire: Use for extinction: CO₂, powder or water spray.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.

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· **vPvB:** Not applicable.

3 Composition and Information on Ingredients

· **Chemical characterisation:** Mixtures· **Description:** Mixture of substances listed below with nonhazardous additions.· **Dangerous components:**

7440-57-5	Gold	50-100%
108-88-3	toluene	2.5-10%
64-17-5	Ethyl Alcohol, denatured	2.5-10%
141-78-6	ethyl acetate	2.5-10%
67-63-0	propan-2-ol	≤ 2.5%
76-22-2	bornan-2-one	≤ 2.5%
5989-27-5	(R)-p-mentha-1,8-diene	≤ 2.5%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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:**

Supply fresh air and to be sure call for a doctor.

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.· **After swallowing:** If symptoms persist consult 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:** Mouth respiratory protective device.

6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

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- 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:**

108-88-3 toluene

WES	Short-term value: 574 mg/m ³ , 150 ppm
	Long-term value: 191 mg/m ³ , 50 ppm
	Sk

64-17-5 Ethyl Alcohol, denatured

WES	Long-term value: 1880 mg/m ³ , 1000 ppm
-----	--

141-78-6 ethyl acetate

WES	Short-term value: 1440 mg/m ³ , 400 ppm
	Long-term value: 720 mg/m ³ , 200 ppm

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67-63-0 propan-2-ol

WES Short-term value: 1230 mg/m³, 500 ppm
Long-term value: 983 mg/m³, 400 ppm

76-22-2 bornan-2-one

WES Short-term value: 19 mg/m³, 3 ppm
Long-term value: 12 mg/m³, 2 ppm

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

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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: Gold coloured

· **Odour:** Mild

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· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition Melting point/freezing point: Initial boiling point and boiling range:	Undetermined. 75 °C
· Flash point:	4 °C
· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	425 °C
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits: Lower: Upper:	1.2 Vol % 7.0 Vol %
· Vapour pressure at 20 °C:	29 hPa
· Density: · Relative density · Vapour density · Evaporation rate	Not determined. Not determined. Not determined. Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity: Dynamic: Kinematic:	Not determined. Not determined.
· Solvent content: Organic solvents: VOC (EC) · Other information	23.0 % 23.00 % 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 relevant for classification:**

108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)
5989-27-5 (R)-p-mentha-1,8-diene		
Oral	LD50	4400 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Carc. 1A, Repr. 2

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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Harmful to aquatic organisms
- **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.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	UN1993
· ADG, IMDG, IATA	
· UN proper shipping name	1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
· ADG	1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
· Transport hazard class(es)	
· ADG	
 	
· 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	II
· ADG, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	336
· EMS Number:	F-E, <u>S-E</u>
· Stowage Category	B
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.

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Trade name: EMS CONDUCTIVE GOLD-PASTE

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· 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 1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture**· Australian Inventory of Chemical Substances**

All ingredients are listed.

· Standard for the Uniform Scheduling of Medicines and Poisons

108-88-3	toluene	S6
76-22-2	bornan-2-one	S5, S6

· GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).**· Hazard pictograms**

GHS02



GHS07



GHS08

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

Gold

toluene

Ethyl Alcohol, denatured

(R)-p-mentha-1,8-diene

· Hazard statements

Highly flammable liquid and vapour.

Harmful if inhaled.

Causes skin irritation.

May cause an allergic skin reaction.

May cause cancer.

Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

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Trade name: EMS CONDUCTIVE GOLD-PASTE

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· Precautionary statements

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF exposed or concerned: Get medical advice/attention.
 Call a POISON CENTER/doctor if you feel unwell.
 Get medical advice/attention if you feel unwell.
 Specific treatment (see on this label).
 Do NOT induce vomiting.
 If skin irritation or rash occurs: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Directive 2012/18/EU

- **Named dangerous substances - ANNEX I** None of the ingredients is 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
- **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
 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

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*Skin Sens. 1: Skin sensitisation – Category 1**Carc. 1A: Carcinogenicity – Category 1A**Repr. 2: Reproductive toxicity – Category 2**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Asp. Tox. 1: Aspiration hazard – Category 1*

AU

Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

1 Identification

- **Product identifier**
- **Trade name:** EMS CONDUCTIVE GOLD-PASTE
- **Article number:** 12642
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **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 1A

H350 May cause cancer.

Reproductive Toxicity - Category 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

H373 May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard - Category 1

H304 May be fatal if swallowed and enters airways.



GHS07

Acute Toxicity (Inhalation) - Category 4

H332 Harmful if inhaled.

Skin Irritation - Category 2

H315 Causes skin irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

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



GHS02



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
Gold
toluene
Ethyl Alcohol, denatured
(R)-p-mentha-1,8-diene

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· Hazard statements*Highly flammable liquid and vapour.**Harmful if inhaled.**Causes skin irritation.**May cause an allergic skin reaction.**May cause cancer.**Suspected of damaging fertility or the unborn child.**May cause damage to organs through prolonged or repeated exposure.**May be fatal if swallowed and enters airways.***· Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Keep container tightly closed.**Ground and bond container and receiving equipment.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Use non-sparking tools.**Take actions to prevent static discharges.**Do not breathe dust/fume/gas/mist/vapours/spray.**Wash thoroughly after handling.**Use only outdoors or in a well-ventilated area.**Contaminated work clothing should not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**Call a POISON CENTER/doctor if you feel unwell.**Get medical advice/attention if you feel unwell.**Specific treatment (see on this label).**Do NOT induce vomiting.**If skin irritation or rash occurs: Get medical advice/attention.**Take off contaminated clothing and wash it before reuse.**In case of fire: Use for extinction: CO₂, powder or water spray.**Store in a well-ventilated place. Keep cool.**Store locked up.**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**D2A - Very toxic material causing other toxic effects***· Classification system:****· NFPA ratings (scale 0 - 4)***Health = 2**Fire = 3**Reactivity = 0*

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· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

7440-57-5	Gold	40-70% w/w
108-88-3	toluene	5-10% w/w
64-17-5	Ethyl Alcohol, denatured	1-5% w/w
141-78-6	ethyl acetate	1-5% w/w
67-63-0	propan-2-ol	1-5% w/w
76-22-2	bornan-2-one	1-5% w/w
5989-27-5	(R)-p-mentha-1,8-diene	≤ 1% w/w

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:**
Supply fresh air and to be sure call for a doctor.
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.
- **After swallowing:** If symptoms persist consult 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:** Mouth respiratory protective device.

CA

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acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

Trade name: EMS CONDUCTIVE GOLD-PASTE

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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.
- **Control parameters**

· Components with limit values that require monitoring at the workplace:	
108-88-3 toluene	
EL	Long-term value: 20 ppm
R	
EV	Long-term value: 20 ppm

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Trade name: **EMS CONDUCTIVE GOLD-PASTE**

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64-17-5 Ethyl Alcohol, denatured

EL Short-term value: 1000 ppm

EV Long-term value: 1.900 mg/m³, 1.000 ppm**141-78-6 ethyl acetate**

EL Long-term value: 150 ppm

EV Long-term value: 1.440 mg/m³, 400 ppm**67-63-0 propan-2-ol**

EL Short-term value: 400 ppm

Long-term value: 200 ppm

EV Short-term value: 400 ppm

Long-term value: 200 ppm

76-22-2 bornan-2-one

EL Short-term value: 3 ppm

Long-term value: 2 ppm

EV Short-term value: 19 mg/m³, 3 ppmLong-term value: 12 mg/m³, 2 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 skin.

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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.

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· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Color:	Gold colored
Odor:	Mild
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	75 °C

· Flash point: 4 °C

· Flammability (solid, gaseous): Not flammable.

· Ignition temperature: 425 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

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

· Explosion limits:

Lower:	1.2 Vol %
Upper:	7.0 Vol %

· Vapor pressure at 20 °C: 29 hPa

· Density: Not determined.

· Relative density: Not determined.

· Vapor density: Not determined.

· Evaporation rate: Not determined.

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

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

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:

Organic solvents: 23.0 %

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· Other information

No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-diene

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

· Primary irritant effect:

· on the skin: Irritant to skin and mucous membranes.

· on the eye: No irritating effect.

· Sensitization: Sensitization possible through skin contact.

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

108-88-3	toluene	3
64-17-5	Ethyl Alcohol, denatured	1
67-63-0	propan-2-ol	3
5989-27-5	(R)-p-mentha-1,8-diene	3

· NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

· Toxicity

· Aquatic toxicity: No further relevant information available.

· Persistence and degradability No further relevant information available.

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- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
 Water hazard class 1 (Self-assessment): slightly hazardous for water
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
 Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

- | | |
|---|--|
| <ul style="list-style-type: none"> · UN-Number · DOT, TDG, IMDG, IATA | <p>UN1993</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · TDG · IMDG, IATA | <p>Flammable liquids, n.o.s. (Toluene, Ethyl acetate)
 1993 Flammable liquids, n.o.s. (Toluene, Ethyl acetate)
 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="display: flex; align-items: center;">
 <div style="margin-left: 20px;"> <ul style="list-style-type: none"> · Class · Label · TDG (Transport dangerous goods): </div> </div> <div style="display: flex; align-items: center; margin-top: 20px;">
 <div style="margin-left: 20px;"> <ul style="list-style-type: none"> · Class </div> </div> |
| | <p>3 Flammable liquids
 3, 6.1</p> <p>3 Flammable liquids</p> |

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· **Label** 3+6.1· **IMDG**

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

· **IATA**

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

· **Packing group**· **DOT, TDG, IMDG, IATA** II· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **Danger code (Kemler):** 336· **EMS Number:** F-E,S-E· **Stowage Category** B

· **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

· **TDG**

· **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**

· **Limited quantities (LQ)** 1L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1993 FLAMMABLE LIQUIDS, N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II

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15 Regulatory information

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

· **Sara**

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

None of the ingredients is listed.

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

108-88-3 toluene

67-63-0 propan-2-ol

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

All ingredients are listed.

· **Canadian substance listings:**

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

All ingredients are listed.

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

64-17-5 Ethyl Alcohol, denatured

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

108-88-3 toluene

141-78-6 ethyl acetate

67-63-0 propan-2-ol

5989-27-5 (R)-p-mentha-1,8-diene

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

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

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

Gold

toluene

Ethyl Alcohol, denatured

(R)-p-mentha-1,8-diene

· **Hazard statements**

Highly flammable liquid and vapour.

Harmful if inhaled.

Causes skin irritation.

May cause an allergic skin reaction.

May cause cancer.

Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

· **Precautionary statements**

Obtain special instructions before use.

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

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

Keep container tightly closed.

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Ground and bond container and receiving equipment.
 Use explosion-proof [electrical/ventilating/lighting] equipment.
 Use non-sparking tools.
 Take actions to prevent static discharges.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF exposed or concerned: Get medical advice/attention.
 Call a POISON CENTER/doctor if you feel unwell.
 Get medical advice/attention if you feel unwell.
 Specific treatment (see on this label).
 Do NOT induce vomiting.
 If skin irritation or rash occurs: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.
 • **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** 07/18/2017 / -

• **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 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

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

- **1.1 Product identifier**
- **Trade name:** EMS CONDUCTIVE GOLD-PASTE
- **Article number:** 12642
- **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**
- **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

Repr. 2 H361d Suspected of damaging the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

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



GHS02



GHS07



GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
Gold
toluene

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(R)-p-mentha-1,8-diene

· Hazard statements

H225 Highly flammable liquid and vapour.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H361d Suspected of damaging the unborn child.

H373 May cause damage to organs through prolonged or repeated exposure.

H304 May be fatal if swallowed and enters airways.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

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

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

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

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

· 3.2 Chemical characterisation: Mixtures**· Description:** Mixture of substances listed below with nonhazardous additions.**· Dangerous components:**

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3 EINECS: 203-625-9	toluene	2.5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 64-17-5 EINECS: 200-578-6	Ethyl Alcohol, denatured	2.5-10%
	⚠ Flam. Liq. 2, H225	
CAS: 141-78-6 EINECS: 205-500-4	ethyl acetate	2.5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 67-63-0 EINECS: 200-661-7	propan-2-ol	≤ 2.5%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 76-22-2 EINECS: 200-945-0	bornan-2-one	≤ 2.5%
	⚠ Flam. Sol. 2, H228; ⚠ Acute Tox. 3, H301	
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-mentha-1,8-diene	≤ 2.5%
	⚠ Flam. Liq. 3, H226; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	

· Additional information: For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
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.
- **After swallowing:** If symptoms persist consult doctor.
- **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:** Mouth respiratory protective device.

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:**
Inform respective authorities in case of seepage into water course or sewage system.
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.

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*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.**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:****108-88-3 toluene**WEL Short-term value: 384 mg/m³, 100 ppmLong-term value: 191 mg/m³, 50 ppm

Sk

64-17-5 Ethyl Alcohol, denaturedWEL Long-term value: 1920 mg/m³, 1000 ppm**141-78-6 ethyl acetate**

WEL Short-term value: 400 ppm

Long-term value: 200 ppm

67-63-0 propan-2-olWEL Short-term value: 1250 mg/m³, 500 ppmLong-term value: 999 mg/m³, 400 ppm**76-22-2 bornan-2-one**WEL Short-term value: 19 mg/m³, 3 ppmLong-term value: 13 mg/m³, 2 ppm**· 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 skin.**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.*

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· Protection of hands:

Protective gloves

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

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

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

· Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· 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

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties**· General Information****· Appearance:**

Form:	Liquid
Colour:	Gold coloured
· Odour:	Mild
· Odour threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	75 °C

· Flash point: 4 °C

· Flammability (solid, gas): Not applicable.

· Ignition temperature: 425 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Product is not selfigniting.

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

· Explosion limits:

Lower:	1.2 Vol %
Upper:	7.0 Vol %

· Vapour pressure at 20 °C: 29 hPa

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· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	23.0 %
VOC (EC)	23.00 %
· 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.
- **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 inhaled.

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

108-88-3 toluene

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalative	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-diene

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.

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- **Reproductive toxicity**
Suspected of damaging the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard**
May be fatal if swallowed and enters airways.

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.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Harmful to aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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 | UN1993 |
| · 14.2 UN proper shipping name | |
| · ADR | 1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE) |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE) |

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Trade name: **EMS CONDUCTIVE GOLD-PASTE**

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· **14.3 Transport hazard class(es)**· **ADR**· **Class**

3 Flammable liquids.

· **Label**

3+6.1

· **IMDG**· **Class**

3 Flammable liquids.

· **Label**

3/6.1

· **IATA**· **Class**

3 Flammable liquids.

· **Label**

3 (6.1)

· **14.4 Packing group**· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Danger code (Kemler):**

336

· **EMS Number:**F-E,S-E· **Stowage Category**

B

· **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

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· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUID , N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II
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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** None of the ingredients is 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
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 48
- **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.

· **Relevant phrases**

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H228 Flammable solid.
- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H336 May cause drowsiness or dizziness.
- H361d Suspected of damaging the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- 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
- Flam. Liq. 3: Flammable liquids – Category 3
- Flam. Sol. 2: Flammable solids – Category 2
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Irrit. 2: Skin corrosion/irritation – Category 2

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*Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**Skin Sens. 1: Skin sensitisation – Category 1**Repr. 2: Reproductive toxicity – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Asp. Tox. 1: Aspiration hazard – Category 1**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1**Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3*

GB

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

- **1.1 Productidentificatie**
- **Handelsnaam:** EMS CONDUCTIVE GOLD-PASTE
- **Artikelnummer:** 12642
- **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:**

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

Repr. 2 H361d Wordt ervan verdacht het ongeboren kind te schaden.
STOT RE 2 H373 Kan schade aan organen veroorzaken bij langdurige of herhaalde blootstelling.
Asp. Tox. 1 H304 Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.



GHS07

Acute Tox. 4 H332 Schadelijk bij inademing.
Skin Irrit. 2 H315 Veroorzaakt huidirritatie.
Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.
Aquatic Chronic 3 H412 Schadelijk voor in het water levende organismen, met langdurige gevolgen.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
Het product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

(Vervolg op blz. 2)

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· **Gevarenpictogrammen**

GHS02 GHS07 GHS08

· **Signaalwoord** Gevaar· **Gevaaraanduidende componenten voor de etikettering:**

Gold

tolueen

(R)-p-mentha-1,8-dieen

· **Gevarenaanduidingen**

H225 Licht ontvlambare vloeistof en damp.

H332 Schadelijk bij inademing.

H315 Veroorzaakt huidirritatie.

H317 Kan een allergische huidreactie veroorzaken.

H361d Wordt ervan verdacht het ongeboren kind te schaden.

H373 Kan schade aan organen veroorzaken bij langdurige of herhaalde blootstelling.

H304 Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.

H412 Schadelijk voor in het water levende organismen, met langdurige gevolgen.

· **Veiligheidsaanbevelingen**

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

P301+P310 NA INSLIKKEN: onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.

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

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

· **3.2 Chemische karakterisering: Mengsels**· **Beschrijving:** Mengsel van na elkaar aangevoerde stoffen met ongevaarlijke bijmengingen.· **Gevaarlijke inhoudstoffen:**

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3 EINECS: 203-625-9	tolueen	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 64-17-5 EINECS: 200-578-6	ethanol	2,5-10%
	⚠ Flam. Liq. 2, H225	
CAS: 141-78-6 EINECS: 205-500-4	ethylacetaat	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	

(Vervolg op blz. 3)

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CAS: 67-63-0 EINECS: 200-661-7	2-propanol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	≤ 2,5%
CAS: 76-22-2 EINECS: 200-945-0	bornaan-2-on ⚠ Flam. Sol. 2, H228; ⚠ Acute Tox. 3, H301	≤ 2,5%
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-mentha-1,8-dieen ⚠ Flam. Liq. 3, H226; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	≤ 2,5%

· **Aanvullende gegevens:**

De woordelijke inhoud van de opgegeven aanwijzingen inzake de mogelijke gevaren is te vinden in hoofdstuk 16.

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:**

Veel verse lucht toedienen en voor alle zekerheid een arts raadplegen.

Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

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

· **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen

· **Na inslikken:** Als de klachten niet minderen, een 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:** Ademhalingstoestel aantrekken.

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:**

Bij indringen in afvalwater of riolering moet de bevoegde instantie gewaarschuwd worden.

Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

· **6.3 InsluTINGS- 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.

(Vervolg op blz. 4)

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

108-88-3 toluene

WGW	Korte termijn waarde: 384 mg/m ³ , 100 ppm
	Lange termijn waarde: 150 mg/m ³ , 39 ppm

64-17-5 ethanol

WGW	Korte termijn waarde: 1900 mg/m ³ , 990 ppm
	Lange termijn waarde: 260 mg/m ³ , 35 ppm

- **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 huid vermijden.
 Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**
 Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.

(Vervolg op blz. 5)

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· 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. Aangezien het product uit meerdere stoffen is samengesteld, is de duurzaamheid van de handschoenmaterialen niet vooraf berekenbaar en moet derhalve vóór het gebruik worden getest.

· Doordringingstijd van het handschoenmateriaal

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

· Oogbescherming:

Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen**· Algemene gegevens****· Voorkomen:**

Vorm:	Vloeistof
Kleur:	Goudkleurig
Geur:	Mild
Geurdrempelwaarde:	Niet bepaald.

· pH-waarde: Niet bepaald.

· Toestandsverandering

Smelt-/vriespunt:	Niet bepaald.
Beginkookpunt en kooktraject:	75 °C

· Vlampunt: 4 °C

· Ontvlambaarheid (vast, gas): Niet bruikbaar.

· Ontstekingstemperatuur: 425 °C

· Ontledingstemperatuur: Niet bepaald.

· Zelfontbrandingstemperatuur: Het produkt ontbrandt niet uit zichzelf.

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

· Ontploffingsgrenzen:

Onderste:	1,2 Vol %
Bovenste:	7,0 Vol %

· Dampspanning bij 20 °C: 29 hPa

(Vervolg op blz. 6)

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- | | |
|---|---|
| · Dichtheid: | Niet bepaald. |
| · Relatieve dichtheid | Niet bepaald. |
| · Dampdichtheid | Niet bepaald. |
| · Verdampingssnelheid | Niet bepaald. |
| · Oplosbaarheid in/mengbaarheid met Water: | Niet resp. gering mengbaar. |
| · Verdelingscoëfficiënt: n-octanol/water: | Niet bepaald. |
| · Viscositeit | |
| Dynamisch: | Niet bepaald. |
| Kinematisch: | Niet bepaald. |
| · Oplosmiddelgehalte: | |
| Organisch oplosmiddel: | 23,0 % |
| VOC (EG) | 23,00 % |
| · 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 inademing.

· Indelingsrelevantie LD/LC50-waarden:

108-88-3 toluen

Oraal	LD50	5000 mg/kg (rat)
Dermaal	LD50	12124 mg/kg (rabbit)
Inhalatief	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-dien

Oraal	LD50	4400 mg/kg (rat)
-------	------	------------------

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie**
Veroorzaakt huidirritatie.
- **Ernstig oogletsel/oogirritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Sensibilisatie van de luchtwegen/de huid**
Kan een allergische huidreactie veroorzaken.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Kankerverwekkendheid** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

(Vervolg op blz. 7)

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- **Gifigheid voor de voortplanting**
Wordt ervan verdacht het ongeboren kind te schaden.
- **STOT bij eenmalige blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij herhaalde blootstelling**
Kan schade aan organen veroorzaken bij langdurige of herhaalde blootstelling.
- **Gevaar bij inademing**
Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.

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.
- **Ecotoxische effecten:**
- **Opmerking:** Schadelijk voor vissen.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/ reprotoxiciteit/bioacumulerend vermogen/ toxiciteit of persistentie)
Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
schadelijk voor in het water levende organismen
- **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** UN1993
- **14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN**
- **ADR** 1993 BRANDBARE VLOEISTOF, N.E.G. (TOLUEEN, ETHYLACETAAT)
- **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)

(Vervolg op blz. 8)

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· 14.3 Transportgevarenklasse(n)
· ADR

· klasse

3 Brandbare vloeistoffen

· Etiket

3+6.1

· IMDG

· Class

3 Brandbare vloeistoffen

· Label

3/6.1

· IATA

· Class

3 Brandbare vloeistoffen

· Label

3 (6.1)

· 14.4 Verpakkingsgroep:
· ADR, IMDG, IATA

II

· 14.5 Milieugevaren:

Niet bruikbaar.

· 14.6 Bijzondere voorzorgen voor de gebruiker

Waarschuwing: Brandbare vloeistoffen

· Kemler-getal:

336

· EMS-nummer:
F-E,S-E
· Stowage Category

B

**· 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

(Vervolg op blz. 9)

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volgens 1907/2006/EG, Artikel 31

datum van de druk: 18.07.2017

Herziening van: 18.07.2017

Handelsnaam: EMS CONDUCTIVE GOLD-PASTE

(Vervolg van blz. 8)

- | | |
|--------------------------|--|
| · VN "Model Regulation": | UN 1993 BRANDBARE VLOEISTOF, N.E.G. (TOLUEEN, ETHYLACETAAT), 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

64-17-5	ethanol
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- SZW-lijst van mutagene stoffen

geen der bestanddelen staat op de lijst.	
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- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid

64-17-5	ethanol	IA
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- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling

108-88-3	tolueen	2
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64-17-5	ethanol	IA
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- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding

64-17-5	ethanol	x
---------	---------	---

- Richtlijn 2012/18/EU
- Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I geen der bestanddelen staat op de lijst.
- 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
- Verordening (EG) nr. 1907/2006 BIJLAGE XVII Beperkingsvoorwaarden: 3, 48
- Nationale voorschriften:
- Gevaarklasse v. water:
Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/ reprotoxiciteit/bioacumulerend vermogen/ toxiciteit of persistentie)
- 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.

- Relevante zinnen

H225 Licht ontvlambare vloeistof en damp.
H226 Ontvlambare vloeistof en damp.
H228 Ontvlambare vaste stof.
H301 Giftig bij inslikken.
H304 Kan dodelijk zijn als de stof bij inslikken in de luchtwegen terechtkomt.
H312 Schadelijk bij contact met de huid.
H315 Veroorzaakt huidirritatie.
H317 Kan een allergische huidreactie veroorzaken.
H319 Veroorzaakt ernstige oogirritatie.
H332 Schadelijk bij inademing.
H336 Kan slaperigheid of duizeligheid veroorzaken.
H361d Wordt ervan verdacht het ongeboren kind te schaden.

(Vervolg op blz. 10)

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H373 Kan schade aan organen veroorzaken bij langdurige of herhaalde blootstelling.

H400 Zeer giftig voor in het water levende organismen.

H410 Zeer giftig voor in het water levende organismen, met langdurige gevolgen.

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

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Ontvlambare vloeistoffen – Categorie 2

Flam. Liq. 3: Ontvlambare vloeistoffen – Categorie 3

Flam. Sol. 2: Ontvlambare vaste stoffen – Categorie 2

Acute Tox. 3: Acute toxiciteit – Categorie 3

Acute Tox. 4: Acute toxiciteit – Categorie 4

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

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

Skin Sens. 1: Sensibilisatie van de huid – Categorie 1

Repr. 2: Voortplantingstoxiciteit – Categorie 2

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

STOT RE 2: Specifieke doelorgaantoxiciteit bij herhaalde blootstelling – Categorie 2

Asp. Tox. 1: Aspiratiegevaar – Categorie 1

Aquatic Acute 1: Gevaar voor het aquatisch milieu - acuut aquatisch gevaar – Categorie 1

Aquatic Chronic 1: Gevaar voor het aquatisch milieu - aquatisch gevaar op lange termijn – Categorie 1

Aquatic Chronic 3: Gevaar voor het aquatisch milieu - aquatisch gevaar op lange termijn – Categorie 3

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

- **1.1 Identificateur de produit**
- **Nom du produit:** EMS CONDUCTIVE GOLD-PASTE
- **Code du produit:** 12642
- **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**
- **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

Repr. 2 H361d Susceptible de nuire au fœtus.

STOT RE 2 H373 Risque présumé d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.

Asp. Tox. 1 H304 Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires.



GHS07

Acute Tox. 4 H332 Nocif par inhalation.

Skin Irrit. 2 H315 Provoque une irritation cutanée.

Skin Sens. 1 H317 Peut provoquer une allergie cutanée.

Aquatic Chronic 3 H412 Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** Le produit est classifié et étiqueté selon le règlement CLP.
- **Pictogrammes de danger**



GHS02



GHS07



GHS08

- **Mention d'avertissement** Danger
- **Composants dangereux déterminants pour l'étiquetage:**
Gold
toluène

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(R)-p-mentha-1,8-diène

· Mentions de danger

H225 Liquide et vapeurs très inflammables.

H332 Nocif par inhalation.

H315 Provoque une irritation cutanée.

H317 Peut provoquer une allergie cutanée.

H361d Susceptible de nuire au fœtus.

H373 Risque présumé d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.

H304 Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires.

H412 Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

· 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.

P301+P310 EN CAS D'INGESTION: Appeler immédiatement un CENTRE ANTIPOISON/un médecin.

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.

P321 Traitement spécifique (voir sur cette étiquette).

P405 Garder sous cléf.

P501 Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.

· 2.3 Autres dangers**· Résultats des évaluations PBT et vPvB****· PBT:** Non applicable.**· vPvB:** Non applicable.**RUBRIQUE 3: Composition/informations sur les composants****· 3.2 Caractérisation chimique: Mélanges****· Description:** Mélange des substances mentionnées à la suite avec des additifs non dangereux.**· Composants dangereux:**

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3 EINECS: 203-625-9	toluène	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 64-17-5 EINECS: 200-578-6	éthanol	2,5-10%
	⚠ Flam. Liq. 2, H225	
CAS: 141-78-6 EINECS: 205-500-4	acétate d'éthyle	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 67-63-0 EINECS: 200-661-7	propane-2-ol	≤ 2,5%
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 76-22-2 EINECS: 200-945-0	bornane-2-one	≤ 2,5%
	⚠ Flam. Sol. 2, H228; ⚠ Acute Tox. 3, H301	
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-mentha-1,8-diène	≤ 2,5%
	⚠ Flam. Liq. 3, H226; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Irrit. 2, H315; Skin Sens. 1, H317	

· Indications complémentaires: Pour le libellé des phrases de risque citées, se référer au chapitre 16.

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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:**
Donner de l'air frais en abondance et consulter un médecin pour plus de sécurité.
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, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.
- **Après ingestion:** Si les troubles persistent, consulter 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:** Porter un appareil de protection respiratoire.

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:**
En cas de pénétration dans les eaux ou les égouts, avertir les autorités compétentes.
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.

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- **Préventions des incendies et des explosions:**
 - Tenir à l'abri des sources d'inflammation - ne pas fumer.
 - Tenir à l'abri de la chaleur.
 - Prendre des mesures contre les charges électrostatiques.
 - Tenir des appareils de protection respiratoire prêts.
- **7.2 Conditions d'un stockage sûr, y compris 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:**

108-88-3 toluène

VME	Valeur momentanée: 384 mg/m ³ , 100 ppm Valeur à long terme: 76,8 mg/m ³ , 20 ppm R2, risque de pénétration percutanée
-----	--

64-17-5 éthanol

VME	Valeur momentanée: 9500 mg/m ³ , 5000 ppm Valeur à long terme: 1900 mg/m ³ , 1000 ppm
-----	--

141-78-6 acétate d'éthyle

VME	Valeur à long terme: 1400 mg/m ³ , 400 ppm
-----	---

67-63-0 propane-2-ol

VME	Valeur momentanée: 980 mg/m ³ , 400 ppm
-----	--

76-22-2 bornane-2-one

VME	Valeur à long terme: 12 mg/m ³ , 2 ppm
-----	---

- **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 la peau.

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.

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· 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 dépend non seulement du matériau, mais aussi d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre. Puisque le produit représente une préparation composée de plusieurs substances, la résistance des matériaux des gants ne peut pas être calculée à l'avance et doit, alors, être contrôlée avant l'utilisation.

· Temps de pénétration du matériau des gants

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

· Protection des yeux:


Lunettes de protection hermétiques

RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles
· Indications générales
· Aspect:

Forme: Liquide

Couleur: Doré

· Odeur: Douce

· Seuil olfactif: Non déterminé.

· valeur du pH: Non déterminé.

· Changement d'état

Point de fusion/point de congélation: Non déterminé.

Point initial d'ébullition et intervalle d'ébullition: 75 °C

· Point d'éclair 4 °C

· Inflammabilité (solide, gaz): Non applicable.

· Température d'inflammation: 425 °C

· Température de décomposition: Non déterminé.

· Température d'auto-inflammabilité: Le produit ne s'enflamme pas spontanément.

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

· Limites d'explosion:

Inférieure: 1,2 Vol %

Supérieure: 7,0 Vol %

· Pression de vapeur à 20 °C: 29 hPa

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· Densité:	Non déterminée.
· Densité relative	Non déterminé.
· Densité de vapeur:	Non déterminé.
· Taux d'évaporation:	Non déterminé.
· Solubilité dans/miscibilité avec l'eau:	Pas ou peu miscible
· Coefficient de partage: n-octanol/eau:	Non déterminé.
· Viscosité:	
Dynamique:	Non déterminé.
Cinématique:	Non déterminé.
· Teneur en solvants:	
Solvants organiques:	23,0 %
VOC (CE)	23,00 %
· 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 par inhalation.

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

108-88-3 toluène

Oral	LD50	5000 mg/kg (rat)
Dermique	LD50	12124 mg/kg (lapin)
Inhalatoire	LC50/4 h	5320 mg/l (souris)

5989-27-5 (R)-p-mentha-1,8-diène

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**
Provoque une irritation cutanée.
- **Lésions oculaires graves/irritation oculaire**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Sensibilisation respiratoire ou cutanée**
Peut provoquer une allergie cutanée.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagenicité sur les cellules germinales**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

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- **Cancérogénicité** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité pour la reproduction**
Susceptible de nuire au fœtus.
- **Toxicité spécifique pour certains organes cibles - exposition unique**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**
Risque présumé d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.
- **Danger par aspiration**
Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires.

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.
- **Effets écotoxiques:**
- **Remarque:** Nocif pour les poissons.
- **Autres indications écologiques:**
- **Indications générales:**
Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
Nocif pour les organismes aquatiques.
- **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>UN1993</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG, IATA | <p>1993 LIQUIDE INFLAMMABLE, N.S.A. (TOLUÈNE, ACÉTATE D'ÉTHYLE)
FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)</p> |

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· 14.3 Classe(s) de danger pour le transport
· ADR

· Classe

3 Liquides inflammables.

· Étiquette

3+6.1

· IMDG

· Class

3 Liquides inflammables.

· Label

3/6.1

· IATA

· Class

3 Liquides inflammables.

· Label

3 (6.1)

· 14.4 Groupe d'emballage
· ADR, IMDG, IATA

II

· 14.5 Dangers pour l'environnement:

Non applicable.

· 14.6 Précautions particulières à prendre par l'utilisateur

Attention: Liquides inflammables.

· Indice Kemler:

336

· No EMS:
F-E, S-E
· Stowage Category

B

· 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)

1L

· Quantités exceptées (EQ)

Code: E2

Quantité maximale nette par emballage intérieur: 30 ml

Quantité maximale nette par emballage extérieur: 500 ml

· Catégorie de transport

2

· Code de restriction en tunnels

D/E

· IMDG
· Limited quantities (LQ)

1L

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· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· "Règlement type" de l'ONU:UN 1993 LIQUIDE INFLAMMABLE, N.S.A.
(TOLUÈNE, ACÉTATE D'ÉTHYLE), 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 Aucun des composants n'est compris.
- 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
- RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3, 48
- 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.

· Phrases importantes

H225 Liquide et vapeurs très inflammables.

H226 Liquide et vapeurs inflammables.

H228 Matière solide inflammable.

H301 Toxique en cas d'ingestion.

H304 Peut être mortel en cas d'ingestion et de pénétration dans les voies respiratoires.

H312 Nocif par contact cutané.

H315 Provoque une irritation cutanée.

H317 Peut provoquer une allergie cutanée.

H319 Provoque une sévère irritation des yeux.

H332 Nocif par inhalation.

H336 Peut provoquer somnolence ou vertiges.

H361d Susceptible de nuire au fœtus.

H373 Risque présumé d'effets graves pour les organes à la suite d'expositions répétées ou d'une exposition prolongée.

H400 Très toxique pour les organismes aquatiques.

H410 Très toxique pour les organismes aquatiques, entraîne des effets néfastes à long terme.

· 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

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquides inflammables – Catégorie 2

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Flam. Liq. 3: Liquides inflammables – Catégorie 3
Flam. Sol. 2: Matières solides inflammables – Catégorie 2
Acute Tox. 3: Toxicité aiguë – Catégorie 3
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
Skin Sens. 1: Sensibilisation cutanée – Catégorie 1
Repr. 2: Toxicité pour la reproduction – Catégorie 2
STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3
STOT RE 2: Toxicité spécifique pour certains organes cibles (exposition répétée) – Catégorie 2
Asp. Tox. 1: Danger par aspiration – Catégorie 1
Aquatic Acute 1: Dangers pour le milieu aquatique- toxicité aiguë pour le milieu aquatique – Catégorie 1
Aquatic Chronic 1: Dangers pour le milieu aquatique- toxicité à long terme pour le milieu aquatique – Catégorie 1
Aquatic Chronic 3: Dangers pour le milieu aquatique- toxicité à long terme pour le milieu aquatique – Catégorie 3

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

- **1.1 Produktidentifikator**
- **Handelsname:** EMS CONDUCTIVE GOLD-PASTE
- **Artikelnummer:** 12642
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffs / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**

Science Services GmbH
Unterhachinger Str. 75
81737 München Germany

Tel: +49(0)89 18 93 668-0
safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org
Österreich: +43 1406 43 43, Gesundheit Österreich GmbH, 24 h
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

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



GHS02 Flamme

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



GHS08 Gesundheitsgefahr

Repr. 2 H361d Kann vermutlich das Kind im Mutterleib schädigen.
STOT RE 2 H373 Kann die Organe schädigen bei längerer oder wiederholter Exposition.
Asp. Tox. 1 H304 Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.



GHS07

Acute Tox. 4 H332 Gesundheitsschädlich bei Einatmen.
Skin Irrit. 2 H315 Verursacht Hautreizungen.
Skin Sens. 1 H317 Kann allergische Hautreaktionen verursachen.
Aquatic Chronic 3 H412 Schädlich für Wasserorganismen, mit langfristiger Wirkung.

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

Das Produkt ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme

GHS02 GHS07 GHS08

· Signalwort Gefahr**· Gefahrbestimmende Komponenten zur Etikettierung:**

Gold

Toluol

(R)-p-Mentha-1,8-dien

· Gefahrenhinweise

H225 Flüssigkeit und Dampf leicht entzündbar.

H332 Gesundheitsschädlich bei Einatmen.

H315 Verursacht Hautreizungen.

H317 Kann allergische Hautreaktionen verursachen.

H361d Kann vermutlich das Kind im Mutterleib schädigen.

H373 Kann die Organe schädigen bei längerer oder wiederholter Exposition.

H304 Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.

H412 Schädlich für Wasserorganismen, mit langfristiger Wirkung.

· Sicherheitshinweise

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

P301+P310 BEI VERSCHLUCKEN: Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.

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

P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).

P405 Unter Verschluss aufbewahren.

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

· 2.3 Sonstige Gefahren**· Ergebnisse der PBT- und vPvB-Beurteilung****· PBT:** Nicht anwendbar.**· vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.2 Chemische Charakterisierung: Gemische**· Beschreibung:** Gemisch aus nachfolgend angeführten Stoffen mit ungefährlichen Beimengungen.**· Gefährliche Inhaltsstoffe:**

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3 EINECS: 203-625-9	Toluol	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	

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CAS: 64-17-5 EINECS: 200-578-6	Ethanol Flam. Liq. 2, H225	2,5-10%
CAS: 141-78-6 EINECS: 205-500-4	Ethylacetat Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	2,5-10%
CAS: 67-63-0 EINECS: 200-661-7	Propan-2-ol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	≤ 2,5%
CAS: 76-22-2 EINECS: 200-945-0	Bornan-2-on Flam. Sol. 2, H228; Acute Tox. 3, H301	≤ 2,5%
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-Mentha-1,8-dien Flam. Liq. 3, H226; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Skin Sens. 1, H317	≤ 2,5%

· **Zusätzliche Hinweise:** Der Wortlaut der angeführten Gefahrenhinweise ist dem Abschnitt 16 zu entnehmen.

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:

Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen.

Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.

· Nach Hautkontakt: Sofort mit Wasser und Seife abwaschen und gut nachspülen.

· Nach Augenkontakt: Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.

· Nach Verschlucken: Bei anhaltenden Beschwerden Arzt konsultieren.

· 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: Atemschutzgerät anlegen.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

· 6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren

Schutzausrüstung tragen. Ungeschützte Personen fernhalten.

· 6.2 Umweltschutzmaßnahmen:

Bei Eindringen in Gewässer oder Kanalisation zuständige Behörden benachrichtigen.

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.

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- 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.

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:**

108-88-3 Toluol	
AGW	Langzeitwert: 190 mg/m ³ , 50 ml/m ³ 4(II);DFG, EU, H, Y
64-17-5 Ethanol	
AGW	Langzeitwert: 960 mg/m ³ , 500 ml/m ³ 2(II);DFG, Y
141-78-6 Ethylacetat	
AGW	Langzeitwert: 1500 mg/m ³ , 400 ml/m ³ 2(I);DFG, Y
67-63-0 Propan-2-ol	
AGW	Langzeitwert: 500 mg/m ³ , 200 ml/m ³ 2(II);DFG, Y

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76-22-2 Bornan-2-on

MAK als Dampf und Aerosol; vgl. Abschn. IIb

5989-27-5 (R)-p-Mentha-1,8-dienAGW Langzeitwert: 28 mg/m³, 5 ml/m³
4(II); DFG, H, Sh, Y**Bestandteile mit biologischen Grenzwerten:****108-88-3 Toluol**

BGW 600 µg/l

Untersuchungsmaterial: Vollblut
Probennahmezeitpunkt: Expositionsende bzw. Schichtende
Parameter: Toluol

1,5 mg/l

Untersuchungsmaterial: Urin
Probennahmezeitpunkt: bei Langzeitexposition: Nach mehreren vorangegangenen Schichten,
Expositionsende bzw. Schichtende
Parameter: o-Kresol**67-63-0 Propan-2-ol**

BGW 25 mg/l

Untersuchungsmaterial: Vollblut
Probennahmezeitpunkt: Expositionsende bzw. Schichtende
Parameter: Aceton

25 mg/l

Untersuchungsmaterial: Urin
Probennahmezeitpunkt: Expositionsende bzw. Schichtende
Parameter: Aceton· **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.

Besmutzte, getränkte Kleidung sofort ausziehen.

Vor den Pausen und bei Arbeitsende Hände waschen.

Getrennte Aufbewahrung der Schutzkleidung.

Berührung mit der Haut vermeiden.

Berührung mit den Augen und der Haut vermeiden.

· **Atemschutz:**

Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.

· **Handschutz:**

Schutzhandschuhe

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

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

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· Handschuhmaterial

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich. Da das Produkt eine Zubereitung aus mehreren Stoffen darstellt, ist die Beständigkeit von Handschuhmaterialien nicht vorausberechenbar und muß deshalb vor dem Einsatz überprüft werden.

· 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: Goldfarben

· Geruch: Mild

· Geruchsschwelle: Nicht bestimmt.

· pH-Wert: Nicht bestimmt.

· Zustandsänderung

Schmelzpunkt/Gefrierpunkt: Nicht bestimmt.

Siedebeginn und Siedebereich: 75 °C

· Flammpunkt: 4 °C

· Entzündbarkeit (fest, gasförmig): Nicht anwendbar.

· Zündtemperatur: 425 °C

· Zersetzungstemperatur: Nicht bestimmt.

· Selbstentzündungstemperatur: Das Produkt ist nicht selbstentzündlich.

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

· Explosionsgrenzen:

Untere: 1,2 Vol %

Obere: 7,0 Vol %

· Dampfdruck bei 20 °C: 29 hPa

· Dichte: Nicht bestimmt.

· Relative Dichte Nicht bestimmt.

· Dampfdichte Nicht bestimmt.

· Verdampfungsgeschwindigkeit Nicht bestimmt.

· Löslichkeit in / Mischbarkeit mit

Wasser: Nicht bzw. wenig mischbar.

· Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt.

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- | | |
|--|-----------------|
| · Viskosität: | |
| Dynamisch: | Nicht bestimmt. |
| Kinematisch: | Nicht bestimmt. |
| · Lösemittelgehalt: | |
| Organische Lösemittel: | 23,0 % |
| VOC (EU) | 23,00 % |
| · 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 Einatmen.

· Einstufungsrelevante LD/LC50-Werte:		
--	--	--

108-88-3 Toluol		
------------------------	--	--

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalativ	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-Mentha-1,8-dien		
--	--	--

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut**
Verursacht Hautreizungen.
- **Schwere Augenschädigung/-reizung** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Sensibilisierung der Atemwege/Haut**
Kann allergische Hautreaktionen verursachen.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Reproduktionstoxizität**
Kann vermutlich das Kind im Mutterleib schädigen.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**
Kann die Organe schädigen bei längerer oder wiederholter Exposition.

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- **Aspirationsgefahr**
Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.

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.
- **Ökotoxische Wirkungen:**
- **Bemerkung:** Schädlich für Fische.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
schädlich für Wasserorganismen
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

ABSCHNITT 14: Angaben zum Transport

- | | |
|---|--|
| <ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA | <p style="text-align: center;">UN1993</p> |
| <ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · IMDG, IATA | <p>1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G. (TOLUEN, ETHYLACETAT)</p> <p>FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)</p> |
| <ul style="list-style-type: none"> · 14.3 Transportgefahrenklassen · ADR | <div style="text-align: center;">   </div> |
| <ul style="list-style-type: none"> · Klasse | <p style="text-align: center;">3 Entzündbare flüssige Stoffe</p> |

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· **Gefahrzettel** 3+6.1· **IMDG**

· **Class** 3 Entzündbare flüssige Stoffe
 · **Label** 3/6.1

· **IATA**

· **Class** 3 Entzündbare flüssige Stoffe
 · **Label** 3 (6.1)

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

II

· **14.5 Umweltgefahren:**

Nicht anwendbar.

· **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**

Achtung: Entzündbare flüssige Stoffe

· **Kemler-Zahl:**

336

· **EMS-Nummer:**F-E,S-E· **Stowage Category**

B

· **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 1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G.
 (TOLUEN, ETHYLACETAT), 3 (6.1), II

DE

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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 Keiner der Inhaltsstoffe ist 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
 - VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen: 3, 48
- **Nationale Vorschriften:**
- **Technische Anleitung Luft:**

Klasse	Anteil in %
I	2,0
NK	23,0
- **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.
- **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.

- **Relevante Sätze**
 - H225 Flüssigkeit und Dampf leicht entzündbar.
 - H226 Flüssigkeit und Dampf entzündbar.
 - H228 Entzündbarer Feststoff.
 - H301 Giftig bei Verschlucken.
 - H304 Kann bei Verschlucken und Eindringen in die Atemwege tödlich sein.
 - H312 Gesundheitsschädlich bei Hautkontakt.
 - H315 Verursacht Hautreizungen.
 - H317 Kann allergische Hautreaktionen verursachen.
 - H319 Verursacht schwere Augenreizung.
 - H332 Gesundheitsschädlich bei Einatmen.
 - H336 Kann Schläfrigkeit und Benommenheit verursachen.
 - H361d Kann vermutlich das Kind im Mutterleib schädigen.
 - H373 Kann die Organe schädigen bei längerer oder wiederholter Exposition.
 - H400 Sehr giftig für Wasserorganismen.
 - H410 Sehr giftig für Wasserorganismen mit langfristiger Wirkung.
- **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
 - vPvB: very Persistent and very Bioaccumulative
 - Flam. Liq. 2: Entzündbare Flüssigkeiten – Kategorie 2

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Flam. Liq. 3: Entzündbare Flüssigkeiten – Kategorie 3
Flam. Sol. 2: Entzündbare Feststoffe – Kategorie 2
Acute Tox. 3: Akute Toxizität – Kategorie 3
Acute Tox. 4: Akute Toxizität – Kategorie 4
Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2
Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2
Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1
Repr. 2: Reproduktionstoxizität – Kategorie 2
STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3
STOT RE 2: Spezifische Zielorgan-Toxizität (wiederholte Exposition) – Kategorie 2
Asp. Tox. 1: Aspirationsgefahr – Kategorie 1
Aquatic Acute 1: Gewässergefährdend - akut gewässergefährdend – Kategorie 1
Aquatic Chronic 1: Gewässergefährdend - langfristig gewässergefährdend – Kategorie 1
Aquatic Chronic 3: Gewässergefährdend - langfristig gewässergefährdend – Kategorie 3

DE

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

- **1.1 Identificatore del prodotto**
- **Denominazione commerciale:** EMS CONDUCTIVE GOLD-PASTE
- **Articolo numero:** 12642
- **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:**

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

Repr. 2 H361d Sospettato di nuocere al feto.
STOT RE 2 H373 Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.
Asp. Tox. 1 H304 Può essere letale in caso di ingestione e di penetrazione nelle vie respiratorie.



GHS07

Acute Tox. 4 H332 Nocivo se inalato.
Skin Irrit. 2 H315 Provoca irritazione cutanea.
Skin Sens. 1 H317 Può provocare una reazione allergica cutanea.
Aquatic Chronic 3 H412 Nocivo per gli organismi acquatici con effetti di lunga durata.

- **2.2 Elementi dell'etichetta**
- **Etichettatura secondo il regolamento (CE) n. 1272/2008**
Il prodotto è classificato ed etichettato conformemente al regolamento CLP.

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· Pittogrammi di pericolo**· Avvertenza Pericolo****· Componenti pericolosi che ne determinano l'etichettatura:**

Gold

toluene

(R)-p-menta-1,8-diene

· Indicazioni di pericolo

H225 Liquido e vapori facilmente infiammabili.

H332 Nocivo se inalato.

H315 Provoca irritazione cutanea.

H317 Può provocare una reazione allergica cutanea.

H361d Sospettato di nuocere al feto.

H373 Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.

H304 Può essere letale in caso di ingestione e di penetrazione nelle vie respiratorie.

H412 Nocivo per gli organismi acquatici con effetti di lunga durata.

· Consigli di prudenza

P210 Tenere lontano da fonti di calore, superfici calde, scintille, fiamme libere o altre fonti di accensione. Non fumare.

P301+P310 IN CASO DI INGESTIONE: contattare immediatamente un CENTRO ANTIVELENI/un medico.

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.

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****· 3.2 Caratteristiche chimiche: Miscela**· **Descrizione:** Miscela delle seguenti sostanze con additivi non pericolosi.**· Sostanze pericolose:**

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3 EINECS: 203-625-9	toluene	2,5-10%
	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 64-17-5 EINECS: 200-578-6	etanolo	2,5-10%
	⚠ Flam. Liq. 2, H225	

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CAS: 141-78-6 EINECS: 205-500-4	acetato di etile Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	2,5-10%
CAS: 67-63-0 EINECS: 200-661-7	2-propanolo Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	≤ 2,5%
CAS: 76-22-2 EINECS: 200-945-0	bornan-2-one Flam. Sol. 2, H228; Acute Tox. 3, H301	≤ 2,5%
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-menta-1,8-diene Flam. Liq. 3, H226; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Skin Sens. 1, H317	≤ 2,5%

· **Ulteriori indicazioni:** Il testo dell'avvertenza dei pericoli citati può essere appreso dal capitolo 16

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:

Portare il soggetto in zona molto ben areata e per sicurezza consultare un medico.

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 alcuni minuti tenendo le palpebre ben aperte.

· Ingestione: Se il dolore persiste consultare 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: Indossare il respiratore.

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:

In caso di infiltrazione nei corpi d'acqua o nelle fognature avvertire le autorità competenti.

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.

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Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.
Aprire e manipolare i recipienti con cautela.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:**
Tenere lontano da fonti di calore, non fumare.
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:**

108-88-3 toluene

TWA Valore a lungo termine: 75,4 mg/m³, 20 ppm
A4, IBE

VL Valore a lungo termine: 192 mg/m³, 50 ppm
Pelle

64-17-5 etanolo

TWA Valore a breve termine: 1884 mg/m³, 1000 ppm
A3

141-78-6 acetato di etile

TWA Valore a lungo termine: 1441 mg/m³, 400 ppm

67-63-0 2-propanolo

TWA Valore a breve termine: 983 mg/m³, 400 ppm
Valore a lungo termine: 492 mg/m³, 200 ppm
A4

76-22-2 bornan-2-one

TWA Valore a breve termine: 18,7 mg/m³, 3 ppm
Valore a lungo termine: 12,5 mg/m³, 2 ppm
A4

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· **Componenti con valori limite biologici:****108-88-3 toluene****IBE** 0,02 mg/l

Campioni: sangue

Momento del prelievo: a prima ultimo turno settimana lavorativa

Indicatore biologico: toluene

0,03 mg/l

Campioni: urine

Momento del prelievo: a fine turno

Indicatore biologico: toluene

0,3 mg/g creatinina

Campioni: urine

Momento del prelievo: a fine turno

Indicatore biologico: o-cresolo

67-63-0 2-propanolo**IBE** 40 mg/l

Campioni: urine

Momento del prelievo: f.t.f.s.l

Indicatore biologico: acetone

· **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 la pelle.

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. Poiché il prodotto rappresenta una formulazione di più sostanze, la stabilità dei materiali dei guanti non è calcolabile in anticipo e deve essere testata prima dell'impiego

· **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:	Color oro
---------	-----------

· Odore:	Delicato
----------	----------

· Soglia olfattiva:	Non definito.
---------------------	---------------

· valori di pH:	Non definito.
-----------------	---------------

· Cambiamento di stato

Punto di fusione/punto di congelamento:	Non definito.
---	---------------

Punto di ebollizione iniziale e intervallo di ebollizione:	75 °C
--	-------

· Punto di infiammabilità:	4 °C
----------------------------	------

· Infiammabilità (solidi, gas):	Non applicabile.
---------------------------------	------------------

· Temperatura di accensione:	425 °C
------------------------------	--------

· Temperatura di decomposizione:	Non definito.
----------------------------------	---------------

· Temperatura di autoaccensione:	Prodotto non autoinfiammabile.
----------------------------------	--------------------------------

· Proprietà esplosive:	Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.
------------------------	---

· Limiti di infiammabilità:

Inferiore:	1,2 Vol %
------------	-----------

Superiore:	7,0 Vol %
------------	-----------

· Tensione di vapore a 20 °C:	29 hPa
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· Densità:	Non definito.
------------	---------------

· Densità relativa	Non definito.
--------------------	---------------

· Densità di vapore:	Non definito.
----------------------	---------------

· Velocità di evaporazione	Non definito.
----------------------------	---------------

· Solubilità in/Miscibilità con acqua:	Poco e/o non miscibile.
--	-------------------------

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

· Viscosità:

Dinamica:	Non definito.
-----------	---------------

Cinematica:	Non definito.
-------------	---------------

· Tenore del solvente:

Solventi organici:	23,0 %
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VOC (CE)	23,00 %
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(continua a pagina 7)

Scheda di dati di sicurezza
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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 inalato.

· Valori LD/LC50 rilevanti per la classificazione:**108-88-3 toluene**

Orale	LD50	5000 mg/kg (rat)
Cutaneo	LD50	12124 mg/kg (rabbit)
Per inalazione	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-menta-1,8-diene

Orale	LD50	4400 mg/kg (rat)
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- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea**
Provoca irritazione cutanea.
- **Lesioni oculari gravi/irritazioni oculari gravi**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Sensibilizzazione respiratoria o cutanea**
Può provocare una reazione allergica cutanea.
- **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** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità per la riproduzione**
Sospettato di nuocere al feto.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**
Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.
- **Pericolo in caso di aspirazione**
Può essere letale in caso di ingestione e di penetrazione nelle vie respiratorie.

SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.

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- **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.
- **Effetti tossici per l'ambiente:**
- **Osservazioni:** Nocivo per i pesci.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
nocivo per gli organismi acquatici
- **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 | UN1993 |
| · 14.2 Nome di spedizione dell'ONU | |
| · ADR | 1993 LIQUIDO INFIAMMABILE, N.A.S. (TOLUENE, ACETATO DI ETILE) |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE) |
| · 14.3 Classi di pericolo connesso al trasporto | |
| · ADR | |
|   | |
| · Classe | 3 Liquidi infiammabili |
| · Etichetta | 3+6.1 |
| · IMDG | |
|   | |
| · Class | 3 Liquidi infiammabili |

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· Label	3/6.1
· IATA	
 	
· Class	3 Liquidi infiammabili
· Label	3 (6.1)
· 14.4 Gruppo di imballaggio	
· ADR, IMDG, IATA	II
· 14.5 Pericoli per l'ambiente:	Non applicabile.
· 14.6 Precauzioni speciali per gli utilizzatori	Attenzione: Liquidi infiammabili
· Numero Kemler:	336
· Numero EMS:	F-E, <u>S-E</u>
· Stowage Category	B
· 14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR	
· Quantità limitate (LQ)	1L
· Quantità esenti (EQ)	Codice: E2 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 500 ml
· Categoria di trasporto	2
· Codice di restrizione in galleria	D/E
· IMDG	
· Limited quantities (LQ)	1L
· 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 1993 LIQUIDO INFIAMMABILE, N.A.S. (TOLUENE, ACETATO DI ETILE), 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** Nessuno dei componenti è contenuto.
- **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
- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3, 48

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· **Disposizioni nazionali:**

· **Istruzione tecnica aria:**

Classe	quota in %
NC	23,0

· **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.

· **Frasi rilevanti**

H225 Liquido e vapori facilmente infiammabili.

H226 Liquido e vapori infiammabili.

H228 Solido infiammabile.

H301 Tossico se ingerito.

H304 Può essere letale in caso di ingestione e di penetrazione nelle vie respiratorie.

H312 Nocivo per contatto con la pelle.

H315 Provoca irritazione cutanea.

H317 Può provocare una reazione allergica cutanea.

H319 Provoca grave irritazione oculare.

H332 Nocivo se inalato.

H336 Può provocare sonnolenza o vertigini.

H361d Sospettato di nuocere al feto.

H373 Può provocare danni agli organi in caso di esposizione prolungata o ripetuta.

H400 Molto tossico per gli organismi acquatici.

H410 Molto tossico per gli organismi acquatici con effetti di lunga durata.

· **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

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquidi infiammabili – Categoria 2

Flam. Liq. 3: Liquidi infiammabili – Categoria 3

Flam. Sol. 2: Solidi infiammabili – Categoria 2

Acute Tox. 3: Tossicità acuta – Categoria 3

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

Skin Sens. 1: Sensibilizzazione della pelle – Categoria 1

Repr. 2: Tossicità per la riproduzione – Categoria 2

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

STOT RE 2: Tossicità specifica per organi bersaglio (esposizione ripetuta) – Categoria 2

Asp. Tox. 1: Pericolo in caso di aspirazione – Categoria 1

Aquatic Acute 1: Pericoloso per l'ambiente acquatico - pericolo acuto per l'ambiente acquatico – Categoria 1

Aquatic Chronic 1: Pericoloso per l'ambiente acquatico - pericolo a lungo termine per l'ambiente acquatico – Categoria 1

Aquatic Chronic 3: Pericoloso per l'ambiente acquatico - pericolo a lungo termine per l'ambiente acquatico – Categoria 3

물질안전보건자료

GHS에 따라

기압점: 2017.07.18

개정: 2017.07.18

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: **EMS CONDUCTIVE GOLD-PASTE**
- 상품번호: 12642
- 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
- 제조자/수입자/유통업자 정보:
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

생식독성 – 구분 2

H361 태아 또는 생식능력에 손상을 일으킬 것으로 의심됨

특정표적장기 독성 - 반복 노출 – 구분 2 H373 장기간 또는 반복노출 되면 신체 중에 손상을 일으킬 수 있음

흡인 유해성 – 구분 1

H304 삼켜서 기도로 유입되면 치명적일 수 있음



피부 부식성/피부 자극성 – 구분 2

H315 피부에 자극을 일으킴

피부 과민성 – 구분 1

H317 알레르기성 피부 반응을 일으킬 수 있음

수생환경 유해성 – 만성3

H412 장기적인 영향에 의해 수생생물에게 유해함

- 라벨표기 요소

- GHS 라벨 요소

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

(2 쪽에 계속)

물질안전보건자료

GHS에 따라

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제품명: EMS CONDUCTIVE GOLD-PASTE

(1 쪽부터계속)

· 그림문자



· 신호어 위험

· 상표상에명확히위험성이표시된성분:

toluene

(R)-p-mentha-1,8-diene

· 유해.위험 문구

고인화성 액체 및 증기

피부에 자극을 일으킴

알레르기성 피부 반응을 일으킬 수 있음

태아 또는 생식능력에 손상을 일으킬 것으로 의심됨

장기간 또는 반복노출 되면 신체 중에 손상을 일으킬 수 있음

삼켜서 기도로 유입되면 치명적일 수 있음

장기적인 영향에 의해 수생생물에게 유해함

· 예방조치 문구

열·스파크·화염·고열로부터 멀리하시오 - 금연

삼켰을 시: 즉시 독성물질센터/병원 연락 필요.

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

(라벨 참조) 처치를 하시오.

잠금장치가 있는 저장장소에 저장하시오.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 기타 유해성

· PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과

· PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.

· vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량

· 화 학 적 특 성: 혼합물

· 설명: 무해한 첨가물이 함유된 아래에 열거된 물질로 만들어진 혼합물.

· 위험 요소:

108-88-3	toluene ⚠ 인화성 액체 - 구분 2, H225; ⚠ 생식독성 - 구분 2, H361; 특정표적장기 독성 - 반복 노출 - 구분 2, H373; 흡인 유해성 - 구분 1, H304; ⚠ 피부 부식성/피부 자극성 - 구분 2, H315; 특정표적장기 독성 - 1회 노출 - 구분 3, H336	2.5-10%
64-17-5	Ethyl Alcohol, denatured ⚠ 인화성 액체 - 구분 2, H225	2.5-10%
141-78-6	ethyl acetate ⚠ 인화성 액체 - 구분 2, H225; ⚠ 심한 눈 손상성/눈 자극성 - 구분 2, H319; 특정표적장기 독성 - 1회 노출 - 구분 3, H336	2.5-10%
67-63-0	propan-2-ol ⚠ 인화성 액체 - 구분 2, H225; ⚠ 심한 눈 손상성/눈 자극성 - 구분 2, H319; 특정표적장기 독성 - 1회 노출 - 구분 3, H336	≤ 2.5%

(3 쪽에계속)

물질안전보건자료

GHS에 따라

기압접: 2017.07.18

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제품명: EMS CONDUCTIVE GOLD-PASTE

(2 쪽부터계속)

76-22-2	bornan-2-one	≤ 2.5%
	⚠ 인화성 고체 - 구분 2, H228; ⚠ 급성 독성 - 경구 - 구분 2, H300	
5989-27-5	(R)-p-mentha-1,8-diene	≤ 2.5%
	⚠ 인화성 액체 - 구분 3, H226; ⚠ 수생환경 유해성 - 급성 1, H400; 수생환경 유해성 - 만성1, H410; ⚠ 피부 부식성/피부 자극성 - 구분 2, H315; 피부 과민성 - 구분 1, H317	

4 응급조치 요령

· 응급조치요령 내용

· 일반적 정보:

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

· 흡입했을 때:

신선한 공기를 쐬고 나서 반드시 의료진의 도움을 구한다.

환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.

· 피부에 접촉했을 때: 즉시 물과 비누로 씻고 잘 행군다.

· 눈에 들어갔을 때: 흐르는 물에 눈을 몇 분 동안 씻어낸다.

· 먹었을 때: 증상이 지속될 경우에는 의사와 상담한다.

· 기타 의사의 주의사항:

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

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

5 폭발·화재시 대처방법

· 소화제

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

· 부적절한 소화제: 플레트용 물

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

· 소방관에 대한 권고사항

· 화재 진압 시 착용할 보호구 및 예방조치: 호흡보호장비설치.

6 누출 사고 시 대처방법

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

· 환경 관련 예방조치:

하천이나 하수도로 유입되었을 경우 해당 관청에 보고한다.

하수도망/해수면 위의 물/지하수로도 달하지 않게 한다.

· 밀폐 및 정화 방법과 소재:

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

항목 13에 따라 오염된 물질을 쓰레기로 처분한다.

충분한 환기가 되도록 한다.

물이나 묽은 세척제로 씻어 내지 마시오

· 타 섹션 참조

안전 관리에 대한 정보는 제7 장을 참고하시오.

개인 보호 장비에 대한 정보는 제8 장을 참고하시오.

쓰레기 처리에 대한 정보는 제13 장을 참고하시오.

- KR -

(4 쪽에 계속)

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7 취급 및 저장방법

- **취급:**
 - **안전 취급을 위한 예방조치**
작업장에서는통풍이잘되고/습기제거가잘 되게주의한다.
조심스럽게용기를 개봉하거나취급한다.
연무질이형성되는것을피한다.
 - **화재 및 폭발 사고 예방대책에 관한 정보:**
발 화 요소는 멀 리 둔 다-금 연.
열로부터보호한다.
정 전 기 의 충 전 으로부터 보호한다.
호흡보호장비를항상비치한다.
 - **혼합위험성 등 안전 저장 조건**
 - **보관:**
 - **안전한 저장 방법:** 차 가 운 장 소 에 보 관한다.
 - **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필 요없음
 - **보 관 조 건 에 관 한 추가적인 정보:**
용기를새지않게밀폐한채보관한다.
밀폐된 용기속에 서 늘 하 고 건 조 하 게 보 관 한 다.
열이나직사광선으로부터보호한다.
 - **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

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

· **화학물질의 노출기준, 생물학적 노출기준 등:**

108-88-3 toluene	
TLV (KR)	단기간 의값: 560 mg/m ³ , 150 ppm 장기간 의값: 188 mg/m ³ , 50 ppm
PEL (US)	장기간 의값: 200 ppm 최고노출기준: 300; 500* ppm *10-min peak per 8-hr shift
REL (US)	단기간 의값: 560 mg/m ³ , 150 ppm 장기간 의값: 375 mg/m ³ , 100 ppm
TLV (US)	장기간 의값: 75 mg/m ³ , 20 ppm BEI
64-17-5 Ethyl Alcohol, denatured	
TLV (KR)	장기간 의값: 1900 mg/m ³ , 1000 ppm
PEL (US)	장기간 의값: 1900 mg/m ³ , 1000 ppm
REL (US)	장기간 의값: 1900 mg/m ³ , 1000 ppm
TLV (US)	단기간 의값: 1880 mg/m ³ , 1000 ppm
141-78-6 ethyl acetate	
TLV (KR)	장기간 의값: 1400 mg/m ³ , 400 ppm
IOELV (EU)	단기간 의값: 1468 mg/m ³ , 400 ppm 장기간 의값: 734 mg/m ³ , 200 ppm
PEL (US)	장기간 의값: 1400 mg/m ³ , 400 ppm

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REL (US)	장기간 의값: 1400 mg/m ³ , 400 ppm
TLV (US)	장기간 의값: 1440 mg/m ³ , 400 ppm
67-63-0 propan-2-ol	
TLV (KR)	단기간 의값: 980 mg/m ³ , 400 ppm 장기간 의값: 480 mg/m ³ , 200 ppm
PEL (US)	장기간 의값: 980 mg/m ³ , 400 ppm
REL (US)	단기간 의값: 1225 mg/m ³ , 500 ppm 장기간 의값: 980 mg/m ³ , 400 ppm
TLV (US)	단기간 의값: 984 mg/m ³ , 400 ppm 장기간 의값: 492 mg/m ³ , 200 ppm BEI
76-22-2 bornan-2-one	
TLV (KR)	단기간 의값: 18 mg/m ³ , 3 ppm 장기간 의값: 12 mg/m ³ , 2 ppm
PEL (US)	장기간 의값: 2 mg/m ³
REL (US)	장기간 의값: 2 mg/m ³
TLV (US)	단기간 의값: 19 mg/m ³ , 3 ppm 장기간 의값: 12 mg/m ³ , 2 ppm

· **추 가 정보:** 제 조 할 당시에 유 효 한 목 록을 기초로 사용했다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

· 식료품, 음료수와 사료로부터 멀리 떨어져 두어 놓는다.

· 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.

· 휴식전이나 작업이 끝날때마다 손을 씻는다.

· 방호복은 따로 보관한다.

· 피부와의 접촉을 피한다.

· 눈과 피부와의 접촉을 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**

· 적합한장갑의선택은재질차이뿐만아니라품질기준의차이도고려하여이루어져야하고제조업종에따라서도다르게선택되어야한다. 제품은다양한재료로부터의조제로이루어지는것이기때문에, 장갑재질의안정성은사전예측되어질수있는것이아니고, 반드시사용전에 (그안전성이) 체크되어야한다.

· **장갑재료의투과시간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

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· 눈 보호:

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· 착용하는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보

· 일반정보

· 외형

· 물리적 상태:

액체

· 색:

금 색

· 냄새:

부드러운

· 후각역치

알맞지않다.

· pH:

알맞지않다.

· 상태변화

· 녹는점/어는점:

맞지않는

· 초기 끓는점과 끓는점 범위:

75 °C

· 인화점:

4 °C

· 인화성(고체, 기체):

해당사항 없음.

· 점화온도:

425 °C

· 분해 온도:

알맞지않다.

· 자기점화:

이제품은자연발화성이없다.

· 폭발위험:

이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

· 인화 또는 폭발 범위의 상한/하한

· 아래로:

1.2 Vol %

· 위로:

7.0 Vol %

· 증기압 의경우 20 °C:

29 hPa

· 밀도:

맞지않는다.

· 비중:

알맞지않다.

· 증기밀도:

알맞지않다.

· 증발 속도:

알맞지않다.

· 용해도:

· 물:

각각의경우에따라서는거의혼합할수없는

· n 옥탄올/물 분배계수:

알맞지않다.

· 점도:

· 역학성:

알맞지않다.

· 동점성:

알맞지않다.

· 용매내용물

· 유기용매:

23.0 %

· VOC (EU)

23.00 %

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· 기타 정보 추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

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

11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:

· LD/LC50-수치에 따른 분류:

108-88-3 toluene

구강의	LD50	5000 mg/kg (rat)
피부의	LD50	12124 mg/kg (rabbit)
흡입의	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-diene

구강의	LD50	4400 mg/kg (rat)
-----	------	------------------

- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부와접막을자극한다.
- 심한 눈 손상 또는 자극성: 무자극.
- 감각화: 피부접촉을통하여감각화가능성이있다.
- 추 가 적 인 독성 에 관 한 정보:
이제품은유럽공동체의공동분류원칙의합법적인절차에근거하여최근에발효된원고에서아래위험들의사전준비에대하여제시하고있다.
건강에해로운
자극적인
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
생식독성 – 구분 2

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.
- 생태독성:
- 의견: 어 류 에 해 로움

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- **추가적인 생태학 정보:**
- **일반 특징:**
수질오염등급 1 (자체등급분류): 약하게수질오염이된
회석시키지않은채대량으로지하수나, 하천으로그리고 하수도망에도달 하지않게한다.
물속의유기체에해가되는것
- **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.

14 운송에 필요한 정보

· 유엔 번호	UN1993
· ADR, IMDG, IATA	
· UN 적정 선적명	1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
· ADR	
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
· 교통 위험 클래스	
· ADR	
	
· 등급	3 발화성용액
· 위험물 라벨	3+6.1
· IMDG	
	
· Class	3 발화성용액
· Label	3/6.1
· IATA	
	
· Class	3 발화성용액

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· Label	3 (6.1)
· 용기등급	
· ADR, IMDG, IATA	II
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치	경고: 발화성용액
· 위험 코드:	336
· EMS-번호:	F-E, <u>S</u> -E
· Stowage Category	B
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· 운 송/추가 정보:	
· ADR	
· 한정 수량 (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· 운송 구분	2
· 터널 제한 코드	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 "모범 규제":	UN 1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II

15 법적 규제현황

· 산업안전보건법에 의한 규제:

· 제조 등 금지물질:

어떠한내용물도목록화되어있지않다

· 허가대상물질:

어떠한내용물도목록화되어있지않다

· 관리대상유해물질:

108-88-3 toluene

141-78-6 ethyl acetate

67-63-0 propan-2-ol

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory

7440-57-5 Gold

KE-18083

108-88-3 toluene

KE-33936

64-17-5 Ethyl Alcohol, denatured

KE-13217

141-78-6 ethyl acetate

KE-00047

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9004-70-0	CELLULOSE NITRATE (PARLODION)	KE-25980
67-63-0	propan-2-ol	KE-29363
76-22-2	bornan-2-one	KE-34423
5989-27-5	(R)-p-mentha-1,8-diene	KE-24397

· 화학물질관리법

· 사고대비물질

108-88-3	toluene
141-78-6	ethyl acetate

· 금지물질

어떠한내용물도목록화되어있지않다

· 제한물질

어떠한내용물도목록화되어있지않다

· 유독물질

108-88-3	toluene
141-78-6	ethyl acetate
5989-27-5	(R)-p-mentha-1,8-diene

· 허가물질

108-88-3	toluene
141-78-6	ethyl acetate
5989-27-5	(R)-p-mentha-1,8-diene

· GHS 라벨 요소

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

· 그림문자



GHS02 GHS07 GHS08

· 신호어 위험

· 상표상에명확히위험성이표시된성분:

toluene

(R)-p-mentha-1,8-diene

· 유해.위험 문구

고인화성 액체 및 증기

피부에 자극을 일으킴

알레르기성 피부 반응을 일으킬 수 있음

태아 또는 생식능력에 손상을 일으킬 것으로 의심됨

장기간 또는 반복노출 되면 신체 중에 손상을 일으킬 수 있음

삼켜서 기도로 유입되면 치명적일 수 있음

장기적인 영향에 의해 수생생물에게 유해함

· 예방조치 문구

열·스파크·화염·고열로부터 멀리하시오 - 금연

삼켰을 시: 즉시 독성물질센터/병원 연락 필요.

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

(라벨 참조) 처치를 하시오.

잠금장치가 있는 저장장소에 저장 하시오.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

(11 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.07.18

개정: 2017.07.18

제품명: EMS CONDUCTIVE GOLD-PASTE· **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

(10 쪽부터계속)

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은
기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2017.07.18
- **개정 횟수 및 최종 개정일자:** 1 / 2017.07.18
- **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

KR

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

Tarikh cetak 18.07.2017

Disemak semula pada 18.07.2017

1 Pengenalan bahan kimia dan pembekal

- **Pengenal pasti produk**
- **Nama dagang:** EMS CONDUCTIVE GOLD-PASTE
- **Nombor artikel:** 12642
- **Kegunaan yang disarankan bagi bahan dan sekatan penggunaan** Tiada maklumat lanjut yang diperolehi.
- **Penggunaan bahan/sediaan** Bahan kimia makmal
- **Perincian pembekal** risalah data keselamatan
- **Maklumat lanjut dapat diperolehi 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

Pemb. 2 H361 Disyaki merosakkan kesuburan atau janin.

STOT RE 2 H373 Boleh menyebabkan kerosakan organ melalui pendedahan berpanjangan atau berulang.

Bhy. Asp. H304 Boleh membawa maut jika tertelan dan memasuki saluran pernafasan.



Kreng. Kulit 2 H315 Menyebabkan kerengsaan kulit.

Pem. Kulit 1 H317 Boleh menyebabkan tindak balas alahan kulit.

Akuatik Kronik 3 H412 Memudaratkan kepada hidupan akuatik dengan kesan kekal berpanjangan.

- **Melabelkan unsur**
- **Unsur label GHS** Produk ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- **Piktogram hazard**



GHS02



GHS07



GHS08

- **Perkataan isyarat Bahaya**
- **Komponen pelabelan yang menentukan bahaya:**
Toluena
(R)-p-mentha-1,8-diene
- **Pernyataan hazard**
Cecair dan wap amat mudah terbakar.
Menyebabkan kerengsaan kulit.

(Bersambung ke halaman 2)

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

Tarikh cetak 18.07.2017

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 1)

*Boleh menyebabkan tindak balas alahan kulit.**Disyaki merosakkan kesuburan atau janin.**Boleh menyebabkan kerosakan organ melalui pendedahan berpanjangan atau berulang.**Boleh membawa maut jika tertelan dan memasuki saluran pernafasan.**Memudaratkan kepada hidupan akuatik dengan kesan kekal berpanjangan.***· Pernyataan langkah perlindungan***Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.**JIKA TERTELAN: Segera hubungi PUSAT RACUN/doktor.**JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.**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: Campuran**· Keterangan:** Campuran bahan disenaraikan di bawah bersama dengan bahan tambah tidak berbahaya.**· Komponen berbahaya :**

108-88-3	Toluena ⚠ Cec. M. Bkr 2, H225; ⚠ Pemb. 2, H361; STOT RE 2, H373; Bhy. Asp., H304; ⚠ Kreng. Kulit 2, H315; STOT SE 3, H336	2.5-10%
64-17-5	Etil alkohol ⚠ Cec. M. Bkr 2, H225	2.5-10%
141-78-6	Etil asetat ⚠ Cec. M. Bkr 2, H225; ⚠ Kreng. Mata 2, H319; STOT SE 3, H336	2.5-10%
67-63-0	Isopropanol ⚠ Cec. M. Bkr 2, H225; ⚠ Kreng. Mata 2, H319; STOT SE 3, H336	≤ 2.5%
76-22-2	bornan-2-one ⚠ Pep. M. Bkr 2, H228; ⚠ Toks. Akut 2, H300	≤ 2.5%
5989-27-5	(R)-p-mentha-1,8-diene ⚠ Cec. M. Bkr 3, H226; ⚠ Akuatik Akut 1, H400; Akuatik Kronik 1, H410; ⚠ Kreng. Kulit 2, H315; Pem. Kulit 1, H317	≤ 2.5%

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:***Berikan udara bersih dan pastikan rawatan doktor diperoleh.**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.***· Jika terkena mata:** *Bilas mata sambil membukanya di bawah air yang mengalir selama beberapa minit.***· Jika tertelan:** *Jika gejala berterusan, hubungi doktor.*

(Bersambung ke halaman 3)

Helaian Data Keselamatan

menurut P.U.(A) 310/2013

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Disemak semula pada 18.07.2017

Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 2)

- **Maklumat untuk doktor:**
- **Gejala dan kesan paling penting, akut dan lewat** Tiada maklumat lanjut yang diperoleh.
- **Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan**
Tiada 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** Tiada maklumat lanjut yang diperoleh.
- **Panduan kepada pemadam kebakaran**
- **Kelengkapan perlindungan:** Peralatan perlindungan pernafasan mulut.

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:**
Hubungi pihak berkuasa berkaitan jika berlaku peresapan masuk ke dalam saluran air atau sistem pembetungan. 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 pengalihudaraan 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 pengalihudaraan/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.
Simpan di tempat yang sejuk dan kering di dalam bekas bertutup rapat.
Lindungi daripada haba dan pancaran terus cahaya matahari.

(Bersambung ke halaman 4)

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

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 3)

- **Kegunaan akhir yang khusus** Tiada maklumat lanjut yang diperoleh.

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:**

108-88-3 Toluena

PEL Nilai jangka panjang: 188 mg/m³, 50 ppm
(kulit)

64-17-5 Etil alkohol

PEL Nilai jangka panjang: 1880 mg/m³, 1000 ppm

141-78-6 Etil asetat

PEL Nilai jangka panjang: 1440 mg/m³, 400 ppm

67-63-0 Isopropanol

PEL Nilai jangka panjang: 49 mg/m³, 10 ppm

76-22-2 bornan-2-one

PEL Nilai jangka panjang: 12 mg/m³, 2 ppm

- **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 kulit.
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. Memandangkan produk merupakan suatu sediaan daripada beberapa bahan, ketahanan bahan sarung tangan tidak boleh dipastikan terlebih dahulu, oleh itu sarung tangan hendaklah diperiksa sebelum digunakan.

- **Jangka masa penyerapan bahan sarung tangan**

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

(Bersambung ke halaman 5)

Helaian Data Keselamatan

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 4)

· Perlindungan mata:



Gogal bertutup rapat

9 Sifat fizikal dan kimia

· Maklumat tentang ciri fizik dan kimia

· Maklumat Am

· Rupa:

Bentuk:

Cecair

Warna:

berwarna emas

· Bau:

Lembut

· Ambang bau

Tidak ditentukan.

· Nilai pH:

Tidak ditentukan.

· Perubahan pada keadaan

Takat lebur/takat beku

Tidak ditentukan.

Takat didih awal dan julat didih

75 °C

· Takat kilat:

4 °C

· Kemudahbakaran (pepejal, gas)

Tidak berkenaan

· Suhu pencucuhan:

425 °C

· Suhu penguraian:

Tidak ditentukan.

· Suhu pengautocucuhan

Produk tidak tercucuh sendiri

· Bahaya letupan:

Produk tidak mudah meletup. Walau bagaimanapun, pembentukan campuran udara/wap mungkin berlaku.

· Had letupan :

Bawah:

1.2 Vol %

Atas:

7.0 Vol %

· Tekanan wap pada 20 °C:

29 hPa

· Ketumpatan:

Tidak ditentukan.

· Ketumpatan bandingan

Tidak ditentukan.

· Ketumpatan wap

Tidak ditentukan.

· Kadar penyejatan

Tidak ditentukan.

· Keterlarutan dalam / Keterlarutcampuran dengan

Air:

Tidak terlarut campur atau sukar bercampur.

· Pekali sekatan: n-oktanol/air

Tidak ditentukan.

· Kelikatan:

Dinamik:

Tidak ditentukan.

Kinematik:

Tidak ditentukan.

· Kandungan pelarut:

Pelarut organik:

23.0 %

(Bersambung ke halaman 6)

MY

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

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 5)

· **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.
- **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:**

108-88-3 Toluena

Oral	LD50	5000 mg/kg (rat)
Derma	LD50	12124 mg/kg (rabbit)
Tersedut	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-mentha-1,8-diene

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

- **Kesan kerengsaan primer:**
- **Kakisan atau kerengsaan kulit** Merengsa kepada kulit dan mukus membran.
- **Kerosakan atau kerengsaan mata yang serius** Tiada kesan kerengsaan.
- **Pemekaan pernafasan / kulit** Pemekaan mungkin berlaku jika terkena kulit.
- **Maklumat tambahan toksikologi:**
Produk menunjukkan bahaya berikut mengikut kaedah pengiraan Garis Panduan Pengelasan Am EU bagi Sediaan seperti yang dikeluarkan dalam versi terbaru:
Memudaratkan
Perengsa
- **Maklumat bagi kumpulan berikut tentang kesan yang mungkin timbul.**
- **Kesan CMR (karsinogen, mutagen dan gangguan kesuburan)**
Pemb. 2

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.
- **Kesan ekotoksik:**
- **Catatan:** Memudaratkan kepada ikan.

(Bersambung ke halaman 7)

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

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 6)

- **Maklumat tambahan ekologi:**
- **Nota am:**
Bahaya air kelas 1 (Peraturan Jerman) (Penilaian sendiri): sedikit berbahaya kepada air
Jangan biarkan produk yang tidak dicairkan atau dalam kuantiti yang banyak memasuki air tanah, saluran air atau sistem pembetungan.
Memudaratkan organisma akuatik
- **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 pembentungan.
- **Pembungkusan yang tidak bersih:**
- **Syor:** Pelupusan mestilah dijalankan menurut peraturan rasmi

14 Maklumat pengangkutan

- | | |
|---|--|
| <ul style="list-style-type: none"> · Nombor UN · ADR, IMDG, IATA | <p>UN1993</p> |
| <ul style="list-style-type: none"> · Nama penghantaran UN yang betul · ADR · IMDG, IATA | <p>1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)</p> <p>FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)</p> |
| <ul style="list-style-type: none"> · pengangkutan kelas bahaya · ADR | |
| | |
| <ul style="list-style-type: none"> · Kelas · Label | <p>3 Cecair mudah terbakar.</p> <p>3+6.1</p> |
| <hr style="border-top: 1px dashed black;"/> | |
| <ul style="list-style-type: none"> · IMDG | |
| | |
| <ul style="list-style-type: none"> · Class | <p>3 Cecair mudah terbakar.</p> |

(Bersambung ke halaman 8)

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

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Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 7)

· 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:	F-E, S-E
· Stowage Category	B
· 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
· 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
· "Peraturan Model" UN:	UN 1993 FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE), 3 (6.1), II

15 Maklumat pengawalseliaan

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



- **Perkataan isyarat Bahaya**
- **Komponen pelabelan yang menentukan bahaya:**
Toluena
(R)-p-mentha-1,8-diene

(Bersambung ke halaman 9)

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

Tarikh cetak 18.07.2017

Disemak semula pada 18.07.2017

Nama dagang: EMS CONDUCTIVE GOLD-PASTE

(Sambungan halaman 8)

· **Pernyataan hazard**

Cecair dan wap amat mudah terbakar.
Menyebabkan kerengsaan kulit.
Boleh menyebabkan tindak balas alahan kulit.
Disyaki merosakkan kesuburan atau janin.
Boleh menyebabkan kerosakan organ melalui pendedahan berpanjangan atau berulang.
Boleh membawa maut jika tertelan dan memasuki saluran pernafasan.
Memudaratkan kepada hidupan akuatik dengan kesan kekal berpanjangan.

· **Pernyataan langkah perlindungan**

Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas – Dilarang merokok.
JIKA TERTELAN: Segera hubungi PUSAT RACUN/doktor.
JIKA TERKENA KULIT (atau rambut): Segera tanggalkan/buka semua pakaian yang tercemar. Basuh kulit dengan air/pancuran air.
Rawatan khas (lihat label ini).
Simpan di tempat berkunci.
Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.
· **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.

· **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
Cec. M. Bkr 3: Cecair mudah terbakar – Kategori 3
Pep. M. Bkr 2: Pepejal mudah terbakar – Kategori 2
Toks. Akut 2: Ketoksikan akut – Kategori 2
Kreng. Kulit 2: Kakisan atau kerengsaan kulit – Kategori 2
Kreng. Mata 2: Kerosakan mata atau kerengsaan mata yang serius – Kategori 2
Pem. Kulit 1: Pemekaan kulit – Kategori 1
Pemb. 2: Ketoksikan pembiakan – Kategori 2
STOT SE 3: Ketoksikan organ sasaran khusus (pendedahan tunggal) – Kategori 3
STOT RE 2: Ketoksikan organ sasaran khusus (pendedahan berulang) – Kategori 2
Bhy. Asp.: Bahaya aspirasi – Kategori 1
Akuatik Akut 1: Berbahaya kepada persekitaran akuatik - bahaya akut – Kategori 1
Akuatik Kronik 1: Berbahaya kepada persekitaran akuatik - bahaya kronik – Kategori 1
Akuatik Kronik 3: Berbahaya kepada persekitaran akuatik - bahaya kronik – Kategori 3

MY

Паспорт безопасности.

в соответствии с 1907/2006/ЕС, Статья 31

Дата печати: 18.07.2017

Дата редактирования: 18.07.2017

1 Наименование вещества / препарата и фирмы / предприятия

- Идентификатор продукта
- Торговое наименование: EMS CONDUCTIVE GOLD-PASTE
- Артикульный номер: 12642
- Соответствующие установленные применения вещества или смеси и не рекомендуемые области использования
Отсутствует какая-либо соответствующая информация.
- Применение вещества / препарата Лабораторные химикаты
- Подробная информация поставщика паспорта безопасности
- Отдел, предоставляющий информацию: Product safety department
- Номер телефона экстренной связи:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Возможные виды опасности

- Классификация вещества или смеси



пламя

Воспламеняющаяся жидкость 2 H225 Легко воспламеняющаяся жидкость и пар.



опасность для здоровья

Репродуктивная токсичность 2 H361 Предположительно может нанести ущерб плодовитости или нерожденному ребенку.

СТОМ - повторно 2 H373 Может наносить вред органам в результате длительного или многократного воздействия.

Опасность при вдыхании 1 H304 Может быть смертельно при проглатывании и вдыхании.



Раздражение кожи 2 H315 Вызывает раздражение кожи.

Кожная сенсибилизация 1 H317 Может вызывать аллергическую кожную реакцию.

Острая токсичность 5 H333 Может нанести вред при вдыхании.

Острая токсичность для воды 3 H402 Вредно для водных организмов.

Хроническая токсичность для воды 3 H412 Вредно для водных организмов с долгосрочными последствиями.

- Элементы маркировки
- Элементы маркировки в соответствии с СГС

Данный продукт классифицируется и маркируется в соответствии с Согласованной на глобальном уровне системой классификации и маркировки химических веществ (GHS).

(Продолжение на странице 2)

Паспорт безопасности.
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(Продолжение страницы 1)

· **Пиктограммы, обозначающие опасности**· **Сигнальное слово** Опасно· **Компоненты этикетки, указывающие на опасность:**

toluene

(R)-p-mentha-1,8-diene

· **Предупреждения об опасности**

Легко воспламеняющаяся жидкость и пар.

Может нанести вред при вдыхании.

Вызывает раздражение кожи.

Может вызывать аллергическую кожную реакцию.

Предположительно может нанести ущерб плодовитости или нерожденному ребенку.

Может наносить вред органам в результате длительного или многократного воздействия.

Может быть смертельно при проглатывании и вдыхании.

Вредно для водных организмов с долгосрочными последствиями.

· **Меры предосторожности**

Беречь от тепла/искр/открытого огня/горячих поверхностей. – Не курить.

ПРИ ПРОГЛАТЫВАНИИ: Немедленно обратиться в ТОКСИКОЛОГИЧЕСКИЙ ЦЕНТР/к врачу.

ПРИ ПОПАДАНИИ НА КОЖУ (или волосы): Немедленно снять всю загрязненную одежду. Промыть кожу водой/под душем.

Применение специальных мер (см. на этом маркировочном знаке).

Хранить под замком.

Утилизировать содержимое / тару в соответствии с местными / региональными / национальными / международными предписаниями.

· **Другие опасные факторы**· **Результаты оценки PBT (устойчивое биоаккумулятивное токсическое вещество) и vPvB (очень устойчивое биоаккумулятивное вещество)**· **PBT:** Неприменимо.· **vPvB:** Неприменимо.**3 Состав / Данные по составляющим компонентам**· **Химическая характеристика: Смеси**· **Описание:** Смесь из веществ, перечисленных ниже, с неопасными добавками.· **Содержащиеся опасные вещества:**

7440-57-5	Gold	50-100%
	Острая токсичность 5, H313; Острая токсичность 5, H333	
108-88-3	toluene	2,5-10%
	⚠ Воспламеняющаяся жидкость 2, H225; ⚠ Repродуктивная токсичность 2, H361; СТOM - повторно 2, H373; Опасность при вдыхании 1, H304; ⚠ Раздражение кожи 2, H315; СТOM - однократно 3, H336	
64-17-5	Ethyl Alcohol, denatured	2,5-10%
	⚠ Воспламеняющаяся жидкость 2, H225	

(Продолжение на странице 3)

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141-78-6	ethyl acetate ⚠️ Воспламеняющаяся жидкость 2, H225; ⚠️ Раздражение кожи 2A, H319; СТМ - однократно 3, H336	2,5-10%
67-63-0	propen-2-ol ⚠️ Воспламеняющаяся жидкость 2, H225; ⚠️ Раздражение кожи 2A, H319; СТМ - однократно 3, H336	≤ 2,5%
76-22-2	bornan-2-one ⚠️ Воспламеняющееся твёрдое вещество 2, H228; ⚠️ Острая токсичность 2, H300	≤ 2,5%
5989-27-5	(R)-p-mentha-1,8-diene ⚠️ Воспламеняющаяся жидкость 3, H226; ⚠️ Острая токсичность для воды 1, H400; Хроническая токсичность для воды 1, H410; ⚠️ Раздражение кожи 2, H315; Кожная сенсибилизация 1, H317	≤ 2,5%

· **Дополнительные указания:** Текст приведённых указаний на факторы риска см. в Главе 16.

4 Меры по оказанию первой помощи

- **Описание мер первой медицинской помощи**
- **Общие указания:**
Симптомы отравления могут проявиться даже спустя много часов, поэтому имеется необходимость в медицинском надзоре в течение как минимум 48 часов после аварии (несчастного случая).
- **После вдыхания:**
Обеспечить доступ свежего воздуха и для надёжности вызвать врача.
При потере сознания (обморочном состоянии) положить пациента на бок в стабильном положении для транспортировки.
- **После контакта с кожей:** Немедленно промыть с помощью воды и мыла, хорошо сполоснуть.
- **После контакта с глазами:** Промыть открытый глаз под проточной водой в течение нескольких минут.
- **После проглатывания:** При сохранении симптомов обратиться к врачу за консультацией.
- **Указания для врача:**
- **Наиболее важные симптомы и эффекты, как немедленные, так и проявляющиеся впоследствии**
Отсутствует какая-либо соответствующая информация.
- **Указание на необходимость оперативной медицинской помощи и специального режима**
Отсутствует какая-либо соответствующая информация.

5 Меры по борьбе с пожаром

- **Средства пожаротушения**
- **Надлежащие средства тушения:**
CO2, песок, порошковое средство для тушения. Применение воды не допускается.
- **Средства тушения, являющиеся непригодными из соображений безопасности:** Полнострейная вода
- **Особые опасности, создаваемые веществом или смесью**
Отсутствует какая-либо соответствующая информация.
- **Рекомендации для пожарных**
- **Защитное оснащение:** Применение устройства защиты дыхательных путей.

6 Меры при непреднамеренном выделении (утечке)

- **Меры по обеспечению личной безопасности, защитное снаряжение и порядок действий в чрезвычайной ситуации**
Надеть защитное снаряжение. Держать на отдалении незащищённых людей.

(Продолжение на странице 4)

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(Продолжение страницы 3)

· **Меры по защите окружающей среды:**

При попадании в водоёмы или в канализационную систему проинформировать об этом соответствующие службы.

Не допускать попадания в канализационную систему / поверхностные или грунтовые воды.

· **Методы и материалы для локализации и очистки:**

Собрать при помощи связывающего жидкость материала (песка, кизельгура, кислотно-вяжущего средства, универсальных вяжущих средств, опилок).

Утилизировать заражённый материал как отходы в соответствии с Пунктом 13.

Обеспечить достаточную вентиляцию.

Не смывать посредством воды или водянистых чистящих средств.

· **Ссылки на другие разделы**

Информация по безопасному обращению - в Главе 7.

Информация по индивидуальному защитному снаряжению - в Главе 8.

Информация по утилизации - в Главе 13.

7 Обращение с веществом и его хранение

· **Обращение с веществом:**

· **Меры предосторожности по безопасному обращению**

Обеспечить хорошую вентиляцию / вытяжку на рабочем месте.

Соблюдать осторожность при открывании ёмкостей и при обращении с ними.

Не допускать образования аэрозолей.

· **Указания по защите от пожаров и взрывов:**

Держать подальше от источников воспламенения - не курить.

Защищать от жара.

Принять меры против электростатического заряжения.

Держать наготове устройство защиты органов дыхания.

· **Условия безопасного хранения, включая несовместимости**

· **Хранение:**

· **Требования, предъявляемые к складским помещениям и таре:** Хранить в прохладном месте.

· **Указания по совместимости с другими веществами при хранении:** Не требуется.

· **Дальнейшие данные по условиям хранения:**

Держать ёмкости плотно закрытыми.

Хранить в хорошо закрытой таре в прохладном и сухом месте.

Защищать от жары и от прямых солнечных лучей.

· **Характерное конечное применение (или применения)**

Отсутствует какая-либо соответствующая информация.

8 Ограничение воздействия вещества и контроль / индивидуальные средства защиты

· **Дополнительные указания по структуре технических устройств:**

Никаких дополнительных данных; см. Пункт 7.

· **Параметры контроля**

· **Составляющие компоненты с предельными значениями, требующие мониторинга на рабочих местах:**

108-88-3 toluene

PDK Краткосрочное значение: 150 мг/м³

Долгосрочное значение: 50 мг/м³

пары и/или газы

(Продолжение на странице 5)

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(Продолжение страницы 4)

64-17-5 Ethyl Alcohol, denatured	
PDK	Краткосрочное значение: 2000 мг/м ³ Долгосрочное значение: 1000 мг/м ³ пары и/или газы
141-78-6 ethyl acetate	
PDK	Краткосрочное значение: 200 мг/м ³ Долгосрочное значение: 50 мг/м ³ пары и/или газы
67-63-0 propan-2-ol	
PDK	Краткосрочное значение: 50 мг/м ³ Долгосрочное значение: 10 мг/м ³ пары и/или газы
76-22-2 bornan-2-one	
PDK	Краткосрочное значение: 3 мг/м ³ пары и/или газы

· **Дополнительные указания:**

В качестве основы послужили списки, являвшиеся на момент составления актуальными.

· **Требования по охране труда и меры по обеспечению безопасности персонала**

· **Средства индивидуальной защиты:**

· **Общие меры по защите от воздействия и гигиене:**

Держать подальше от продуктов питания, напитков и корма для животных.

Немедленно снять всю загрязнённую и пропитанную вредными веществами одежду.

Мыть руки перед перерывами и по окончании работы.

Хранить защитную одежду отдельно.

Избегать контакта с кожей.

Избегать контакта с глазами и с кожей.

· **Защита органов дыхания:**

При кратковременном контакте с веществом или при воздействии вещества низкой концентрации пользоваться фильтрующим устройством для защиты органов дыхания. При интенсивном или более продолжительном контакте следует воспользоваться автономным устройством защиты органов дыхания.

· **Защита рук:**



Защитные перчатки (рукавицы).

Материал перчаток / рукавиц должен быть устойчивым к воздействию продукта / вещества / препарата и не пропускать их.

Никаких рекомендаций в отношении материала перчаток / рукавиц, пригодных для применения в ходе работы с продуктом / препаратом / смесью химикатов дать нельзя, так как никаких испытаний в этом отношении не проводилось.

Выбор материала перчаток / рукавиц производится с учётом времени прорыва, степени проницаемости и эрозии.

· **Материал перчаток / рукавиц**

Выбор подходящих перчаток / рукавиц определяется не только материалом, но также и другими качественными особенностями, причём между различными производителями существует большая разница. Так как продукт представляет собой смесь различных веществ, то не представляется никакой возможности для расчёта устойчивости материала, из которого изготовлены перчатки / рукавицы, что вызывает необходимость перепроверки на предмет пригодности перед использованием.

(Продолжение на странице 6)

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(Продолжение страницы 5)

- **Период проницаемости материала перчаток / рукавиц.**
Необходимо осведомиться у производителя защитных перчаток / рукавиц о точном времени прорыва и придерживаться его.
- **Защита глаз:**



Плотно прилегающие защитные очки

9 Физические и химические свойства

· Информация по основным физическим и химическим свойствам	
· Общая информация	
· Внешний вид:	
Форма:	Жидкость
Цвет:	Золотистого цвета
· Запах:	Мягко
· Порог запаха:	Не определено.
· Значение pH:	Не определено.
· Изменение состояния	
Точка плавления / интервал температур плавления:	Не определено.
Точка кипения / интервал температур кипения:	75 °C
· Температурная точка вспышки:	4 °C
· Воспламеняемость (твёрдое, газообразное вещество):	Неприменимо.
· Температура воспламенения:	425 °C
· Температура распада:	Не определено.
· Самовоспламеняемость:	Продукт не является самовоспламеняемым.
· Взрывоопасность:	Продукт не является взрывоопасным, однако возможно образование взрывоопасных смесей пара / воздуха.
· Границы взрываемости:	
Нижняя:	1,2 пол. %
Верхняя:	7,0 пол. %
· Давление пара при 20 °C:	29 гПа
· Плотность:	Не определено.
· Относительная плотность	Не определено.
· Плотность пара	Не определено.
· Скорость испарения	Не определено.
· Растворимость в / Смешиваемость с водой:	Несмешиваемо или трудносмешиваемо.
· Коэффициент распределения (n-октанол / вода):	Не определено.
· Вязкость:	
Динамическая:	Не определено.

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(Продолжение страницы 6)

Кинематическая:	Не определено.
· Содержание растворителя:	
Органические растворители:	23,0 %
VOC (EC)	23,00 %
· Другая информация	Отсутствует какая-либо соответствующая информация.

10 Стабильность и реакционная способность

- **Реакционная способность** Отсутствует какая-либо соответствующая информация.
- **Химическая стабильность**
- **Термический распад / условия, которых следует избегать:**
При использовании в соответствии с предписаниями не происходит никакого распада.
- **Возможность опасных реакций** Неизвестно ни о каких опасных реакциях.
- **Условия, вызывающие опасные изменения** Отсутствует какая-либо соответствующая информация.
- **Несовместимые материалы:** Отсутствует какая-либо соответствующая информация.
- **Опасные продукты распада:** Неизвестно ни о каких опасных продуктах распада.

11 Данные по токсикологии

- **Информация по токсикологическому воздействию**
- **Острая токсичность:**

Значения LD/LC50 (летальной дозы/концентрации), необходимые для классифицирования:		
108-88-3 toluene		
Орально (через рот)	LD50	5000 мг/кг (rat)
Дермально (через кожу)	LD50	12124 мг/кг (rabbit)
Ингаляционно (путём вдыхания)	LC50/4 ч.	5320 мг/л (mouse)
5989-27-5 (R)-p-mentha-1,8-diene		
Орально (через рот)	LD50	4400 мг/кг (rat)

- **Первичное раздражающее воздействие:**
- **на кожу:** Раздражает кожу и слизистые оболочки.
- **на глаза:** Нет раздражающего воздействия.
- **Сенсибилизация:** Сенсибилизация возможна посредством кожного контакта.
- **Дополнительные токсикологические указания:**
На основании расчётного метода Всеобщей Классификационной Директивы ЕС для Препаратов в её последней (актуальной) редакции продукт представляет следующие виды опасности:
Вредно для здоровья
Раздражающе
- **Информация по следующим группам потенциальных воздействий:**
- **Канцерогенное, изменяющее наследственность и вызывающее бесплодие действие**
Репродуктивная токсичность 2

12 Экологическая информация

- **Токсичность**
- **Акватоксичность:** Отсутствует какая-либо соответствующая информация.
- **Стойкость и склонность к деградации** Отсутствует какая-либо соответствующая информация.

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- **Поведение в экологических системах:**
- **Биоаккумулятивный потенциал** Отсутствует какая-либо соответствующая информация.
- **Подвижность в грунте** Отсутствует какая-либо соответствующая информация.
- **Экотоксические воздействия:**
- **Примечания:** Вредно для рыб.
- **Дополнительные экологические указания:**
- **Общие указания:**
 Класс вредности для воды 1 (Само-классификация): немного вредно для воды
 Не допускать попадания продукта в грунтовые воды, водоёмы или в канализационную систему в неразбавленном виде или в больших количествах.
 Вредно для водных организмов.
- **Результаты оценки PBT (устойчивое биоаккумулятивное токсическое вещество) и vPvB (очень устойчивое биоаккумулятивное вещество)**
- **PBT:** Неприменимо.
- **vPvB:** Неприменимо.
- **Другие вредные эффекты** Отсутствует какая-либо соответствующая информация.

13 Указания по утилизации

- **Методы обработки отходов**
- **Рекомендация:**
 Утилизация совместно с бытовыми отходами недопустима. Не допускать попадания в канализацию.
- **Неочищенные упаковки:**
- **Рекомендация:**
 Утилизация должна быть осуществлена в соответствии с предписаниями компетентных служб.

14 Информация по транспорту

- | | |
|---|--|
| <ul style="list-style-type: none"> · Номер UN · ADR, IMDG, IATA | UN1993 |
| <ul style="list-style-type: none"> · Собственное транспортное наименование ООН · ADR · IMDG, IATA | 1993 ЛЕГКОВОСПЛАМЕНЯЮЩАЯСЯ ЖИДКОСТЬ,
Н.У.К (ТОЛУОЛ, ЭТИЛАЦЕТАТ)
FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL
ACETATE) |
| <ul style="list-style-type: none"> · классов опасности транспорта · ADR | |
|  | |
| <ul style="list-style-type: none"> · Класс · Этикетка для опасного содержимого | 3 Легковоспламеняющиеся жидкости
3+6.1 |

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· **IMDG**· **Class**

3 Легковоспламеняющиеся жидкости

· **Label**

3/6.1

· **IATA**· **Class**

3 Легковоспламеняющиеся жидкости

· **Label**

3 (6.1)

· **Группа упаковки**· **ADR, IMDG, IATA**

II

· **Экологические риски:**

Неприменимо.

· **Особые меры предосторожности для пользователей**

Осторожно: Легковоспламеняющиеся жидкости

· **Код опасности (по Кемлеру):**

336

· **Номер EMS:**

F-E, S-E

· **Stowage Category**

B

· **Транспортировка навалом в соответствии с Приложением II MARPOL73/78 (Международная конвенция по предотвращению загрязнения вод с судов) и IBC Code (Международный кодекс перевозок опасных химических грузов наливом)**

Неприменимо.

· **Транспорт / дополнительная информация:**· **ADR**· **Ограниченные объёмы (LQ)**

1L

· **Освобожденные количества (EQ)**

Код: E2

Максимальное количество нетто на внутреннюю тару: 30 мл

Максимальное количество нетто на наружную тару: 500 мл

· **Транспортная категория**

2

· **Код ограничения проезда через туннели**

D/E

· **IMDG**· **Limited quantities (LQ)**

1L

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 мл

Maximum net quantity per outer packaging: 500 мл

· **UN "Model Regulation":**

UN 1993 ЛЕГКОВОСПЛАМЕНЯЮЩАЯСЯ ЖИДКОСТЬ, Н.У.К (ТОЛУОЛ, ЭТИЛАЦЕТАТ), 3 (6.1), II

RU

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15 Предписания

- **Нормы безопасности, правила охраны труда и экологические нормативы или стандарты, действующие для вещества или смеси**
- **Элементы маркировки в соответствии с СГС**
Данный продукт классифицируется и маркируется в соответствии с Согласованной на глобальном уровне системой классификации и маркировки химических веществ (GHS).
- **Пиктограммы, обозначающие опасности**



GHS02 GHS07 GHS08

- **Сигнальное слово** Опасно
- **Компоненты этикетки, указывающие на опасность:**
toluene
(R)-p-mentha-1,8-diene
- **Предупреждения об опасности**
Легко воспламеняющаяся жидкость и пар.
Может нанести вред при вдыхании.
Вызывает раздражение кожи.
Может вызывать аллергическую кожную реакцию.
Предположительно может нанести ущерб плодovitости или нерожденному ребенку.
Может наносить вред органам в результате длительного или многократного воздействия.
Может быть смертельно при проглатывании и вдыхании.
Вредно для водных организмов с долгосрочными последствиями.
- **Меры предосторожности**
Беречь от тепла/искр/открытого огня/горячих поверхностей. – Не курить.
ПРИ ПРОГЛАТЫВАНИИ: Немедленно обратиться в ТОКСИКОЛОГИЧЕСКИЙ ЦЕНТР/к врачу.
ПРИ ПОПАДАНИИ НА КОЖУ (или волосы): Немедленно снять всю загрязненную одежду. Промыть кожу водой/под душем.
Применение специальных мер (см. на этом маркировочном знаке).
Хранить под замком.
Утилизировать содержимое / тару в соответствии с местными / региональными / национальными / международными предписаниями.
- **Оценка химической безопасности:** Оценка химической безопасности не проведена.

16 Прочая информация:

Данные опираются на актуальные знания, однако они не являются гарантией каких-либо конкретных свойств продукта и не устанавливают никаких действующих с юридической точки зрения договорных отношений.

- **Соответствующие данные**
H225 Легко воспламеняющаяся жидкость и пар.
H226 Воспламеняющаяся жидкость и пар.
H228 Воспламеняющееся твердое вещество.
H300 Смертельно при проглатывании.
H304 Может быть смертельно при проглатывании и вдыхании.
H313 Может нанести вред при контакте с кожей.
H315 Вызывает раздражение кожи.
H317 Может вызывать аллергическую кожную реакцию.

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*H319 Вызывает серьезное раздражение глаз.**H333 Может нанести вред при вдыхании.**H336 Может вызывать сонливость или головокружение.**H361 Предположительно может нанести ущерб плодovitости или нерожденному ребенку.**H373 Может наносить вред органам в результате длительного или многократного воздействия.**H400 Весьма токсично для водных организмов.**H410 Весьма токсично для водных организмов с долгосрочными последствиями.***· Аббревиатуры и акронимы:***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**Воспламеняющаяся жидкость 2: Flammable liquids – Category 2**Воспламеняющаяся жидкость 3: Flammable liquids – Category 3**Воспламеняющееся твердое вещество 2: Flammable solids – Category 2**Острая токсичность 2: Acute toxicity – Category 2**Острая токсичность 5: Acute toxicity – Category 5**Раздражение кожи 2: Skin corrosion/irritation – Category 2**Раздражение кожи 2A: Serious eye damage/eye irritation – Category 2A**Кожная сенсibilизация 1: Skin sensitisation – Category 1**Репродуктивная токсичность 2: Reproductive toxicity – Category 2**СТОМ - однократно 3: Specific target organ toxicity (single exposure) – Category 3**СТОМ - повторно 2: Specific target organ toxicity (repeated exposure) – Category 2**Опасность при вдыхании 1: Aspiration hazard – Category 1**Острая токсичность для воды 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1**Острая токсичность для воды 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3**Хроническая токсичность для воды 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1**Хроническая токсичность для воды 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3*

RU

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 18.07.2017

Revisión: 18.07.2017

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

- **1.1 Identificador del producto**
- **Nombre comercial:** EMS CONDUCTIVE GOLD-PASTE
- **Número del artículo:** 12642
- **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:**
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

Repr. 2 H361d Se sospecha que daña al feto.
STOT RE 2 H373 Puede provocar daños en los órganos tras exposiciones prolongadas o repetidas.
Asp. Tox. 1 H304 Puede ser mortal en caso de ingestión y penetración en las vías respiratorias.



GHS07

Acute Tox. 4 H332 Nocivo en caso de inhalación.
Skin Irrit. 2 H315 Provoca irritación cutánea.
Skin Sens. 1 H317 Puede provocar una reacción alérgica en la piel.
Aquatic Chronic 3 H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

- **2.2 Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**
El producto se ha clasificado y etiquetado de conformidad con el reglamento CLP.

(se continua en página 2)

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(se continua en página 1)

Pictogramas de peligro



Palabra de advertencia Peligro

Componentes peligrosos a indicar en el etiquetaje:

Gold

tolueno

(R)-p-menta-1,8-dieno

Indicaciones de peligro

H225 Líquido y vapores muy inflamables.

H332 Nocivo en caso de inhalación.

H315 Provoca irritación cutánea.

H317 Puede provocar una reacción alérgica en la piel.

H361d Se sospecha que daña al feto.

H373 Puede provocar daños en los órganos tras exposiciones prolongadas o repetidas.

H304 Puede ser mortal en caso de ingestión y penetración en las vías respiratorias.

H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

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.

P301+P310 EN CASO DE INGESTIÓN: Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/ médico.

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.

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

3.2 Caracterización química: Mezclas

Descripción: Mezcla formada por las sustancias especificadas a continuación con adiciones no peligrosas.

Componentes peligrosos:

CAS: 7440-57-5	Gold	50-100%
	⚠ Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-88-3	tolueno	2,5-10%
EINECS: 203-625-9	⚠ Flam. Liq. 2, H225; ⚠ Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 64-17-5	etanol	2,5-10%
EINECS: 200-578-6	⚠ Flam. Liq. 2, H225	

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CAS: 141-78-6 EINECS: 205-500-4	acetato de etilo Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	2,5-10%
CAS: 67-63-0 EINECS: 200-661-7	2-propanol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	≤ 2,5%
CAS: 76-22-2 EINECS: 200-945-0	bornán-2-ona Flam. Sol. 2, H228; Acute Tox. 3, H301	≤ 2,5%
CAS: 5989-27-5 EINECS: 227-813-5	(R)-p-menta-1,8-dieno Flam. Liq. 3, H226; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Skin Sens. 1, H317	≤ 2,5%

· **Indicaciones adicionales:** El texto de los posibles riesgos aquí indicados se puede consultar en el capítulo 16.

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:

Suministrar suficiente aire fresco y, para mayor seguridad, consultar el médico.

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 ingestión:

Consultar un médico si los trastornos persisten.

· 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:

Colocarse la protección respiratoria.

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:

Al penetrar en las aguas o en el alcantarillado, avisar a las autoridades pertinentes.

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.

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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.
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:**

108-88-3 tolueno

LEP Valor de corta duración: 384 mg/m³, 100 ppm
Valor de larga duración: 192 mg/m³, 50 ppm
vía dérmica, VLB, VLI, r

64-17-5 etanol

LEP Valor de corta duración: 1910 mg/m³, 1000 ppm
s

141-78-6 acetato de etilo

LEP Valor de corta duración: 1468* mg/m³, 400* ppm
Valor de larga duración: 1460 734* mg/m³, 400 200* ppm
*en vigor: 2018

67-63-0 2-propanol

LEP Valor de corta duración: 1000 mg/m³, 400 ppm
Valor de larga duración: 500 mg/m³, 200 ppm
VLB, s

76-22-2 bornán-2-ona

LEP Valor de corta duración: 19 mg/m³, 3 ppm
Valor de larga duración: 13 mg/m³, 2 ppm

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5989-27-5 (R)-p-menta-1,8-dieno

LEP Valor de larga duración: 168* mg/m³, 30* ppm
*en vigor: 2018, Sen, vía dérmica

· Componentes con valores límite biológicos:

108-88-3 tolueno

VLB 0,5 mg/l
Muestra: orina
Momento de Muestero: Final de la jornada laboral
Indicador Biológico: o-Cresol

1,6 g/g creatinina
Muestra: orina
Momento de Muestero: Final de la jornada laboral
Indicador Biológico: Ácido hipúrico

0,05 mg/l
Muestra: sangre
Momento de Muestero: Principio de la última jornada de la semana laboral
Indicador Biológico: Tolueno

0,08
Muestra: orina
Momento de Muestero: Final de la jornada laboral
Indicador Biológico: Tolueno

67-63-0 2-propanol

VLB 40 mg/l
Muestra: orina
Momento de Muestero: Final de la semana laboral
Indicador Biológico: Acetona

· **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 la piel.

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.

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· Material de los guantes

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro. Teniendo en cuenta que el producto está fabricado a partir de diferentes materiales, su calidad no puede ser evaluada de antemano, de modo que los guantes deberán ser controlados antes de su utilización.

· 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:

Dorado

· Olor:

Suave

· Umbral olfativo:

No determinado.

· valor pH:

No determinado.

· Cambio de estado**Punto de fusión/punto de congelación:**

Indeterminado.

Punto inicial de ebullición e intervalo de ebullición: 75 °C**· Punto de inflamación:**

4 °C

· Inflamabilidad (sólido, gas):

No aplicable.

· Temperatura de ignición:

425 °C

· Temperatura de descomposición:

No determinado.

· Temperatura de auto-inflamación:

El producto no es autoinflamable.

· Propiedades explosivas:

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

· Límites de explosión:**Inferior:**

1,2 Vol %

Superior:

7,0 Vol %

· Presión de vapor a 20 °C:

29 hPa

· Densidad:

Indeterminado.

· Densidad relativa

No determinado.

· Densidad de vapor

No determinado.

· Tasa de evaporación:

No determinado.

· Solubilidad en / miscibilidad con agua:

Poco o no mezclable.

· Coeficiente de reparto: n-octanol/agua:

No determinado.

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- **Viscosidad:**
 - Dinámica:** No determinado.
 - Cinemática:** No determinado.
- **Concentración del disolvente:**
 - Disolventes orgánicos:** 23,0 %
 - VOC (CE)** 23,00 %
- **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 inhalación.

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

108-88-3 tolueno

Oral	LD50	5000 mg/kg (rat)
Dermal	LD50	12124 mg/kg (rabbit)
Inhalatorio	LC50/4 h	5320 mg/l (mouse)

5989-27-5 (R)-p-menta-1,8-dieno

Oral	LD50	4400 mg/kg (rat)
------	------	------------------

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas**
Provoca irritación cutánea.
- **Lesiones o irritación ocular graves**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Sensibilización respiratoria o cutánea**
Puede provocar una reacción alérgica en la piel.
- **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** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad para la reproducción**
Se sospecha que daña al feto.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**
Puede provocar daños en los órganos tras exposiciones prolongadas o repetidas.

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- **Peligro de aspiración**
Puede ser mortal en caso de ingestión y penetración en las vías respiratorias.

SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Efectos ecotóxicos:**
- **Observación:** Nocivo para los peces.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 1 (autoclasicación): escasamente peligroso para el agua
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
nocivo para organismos acuáticos
- **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** UN1993
- **14.2 Designación oficial de transporte de las Naciones Unidas**
- **ADR** 1993 LÍQUIDO INFLAMABLE, N.E.P. (TOLUENO, ACETATO DE ETILO)
- **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (TOLUENE, ETHYL ACETATE)
- **14.3 Clase(s) de peligro para el transporte**
- **ADR**
- 
- **Clase** 3 Líquidos inflamables

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· Etiqueta	3+6.1
· IMDG	
 	
· Class	3 Líquidos inflamables
· Label	3/6.1
· IATA	
 	
· Class	3 Líquidos inflamables
· Label	3 (6.1)
· 14.4 Grupo de embalaje	
· ADR, IMDG, IATA	II
· 14.5 Peligros para el medio ambiente:	No aplicable.
· 14.6 Precauciones particulares para los usuarios	Atención: Líquidos inflamables
· Número Kemler:	336
· Número EMS:	F-E,S-E
· Stowage Category	B
· 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)	1L
· Cantidades exceptuadas (EQ)	Código: E2 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 500 ml
· Categoría de transporte	2
· Código de restricción del túnel	D/E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· "Reglamentación Modelo" de la UNECE:	UN 1993 LÍQUIDO INFLAMABLE, N.E.P. (TOLUENO, ACETATO DE ETILO), 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** ninguno de los componentes está incluido en una lista

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- **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**
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII Restricciones: 3, 48**
- **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.

· Frases relevantes

- H225 Líquido y vapores muy inflamables.
- H226 Líquidos y vapores inflamables.
- H228 Sólido inflamable.
- H301 Tóxico en caso de ingestión.
- H304 Puede ser mortal en caso de ingestión y penetración en las vías respiratorias.
- H312 Nocivo en contacto con la piel.
- H315 Provoca irritación cutánea.
- H317 Puede provocar una reacción alérgica en la piel.
- H319 Provoca irritación ocular grave.
- H332 Nocivo en caso de inhalación.
- H336 Puede provocar somnolencia o vértigo.
- H361d Se sospecha que daña al feto.
- H373 Puede provocar daños en los órganos tras exposiciones prolongadas o repetidas.
- H400 Muy tóxico para los organismos acuáticos.
- H410 Muy tóxico para los organismos acuáticos, con efectos nocivos duraderos.

· 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
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 2: Líquidos inflamables – Categoría 2
- Flam. Liq. 3: Líquidos inflamables – Categoría 3
- Flam. Sol. 2: Sólidos inflamables – Categoría 2
- Acute Tox. 3: Toxicidad aguda – Categoría 3
- 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
- Skin Sens. 1: Sensibilización cutánea – Categoría 1
- Repr. 2: Toxicidad para la reproducción – Categoría 2
- STOT SE 3: Toxicidad específica en determinados órganos (exposición única) – Categoría 3
- STOT RE 2: Toxicidad específica en determinados órganos (exposiciones repetidas) – Categoría 2
- Asp. Tox. 1: Peligro por aspiración – Categoría 1
- Aquatic Acute 1: Peligroso para el medio ambiente acuático - peligro acuático agudo – Categoría 1
- Aquatic Chronic 1: Peligroso para el medio ambiente acuático - peligro acuático a largo plazo – Categoría 1
- Aquatic Chronic 3: Peligroso para el medio ambiente acuático - peligro acuático a largo plazo – Categoría 3