Safety data sheet

according to 2020/878/EU

Printing date 11.01.2024 *Revision: 11.01.2024*

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

- 1.1 Product identifier

- Trade name: Solder Mask Soldermask 3.0mil 305mm

- 1.2 Relevant identified uses of the substance or mixture and uses advised against

Dry Film
Soldermask
Industrial Use

- Application of the substance / the mixture *Dry Film*

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Bungard Elektronik GmbH & Co KG
Rilke Str. 1
51570 Windeck
++49(0)2292-928280
Info@bungard.de
Emergency Tel
ChemTel Inc.: (800)255-3924, +1
(813)248-0585

- Informing department: *Product safety department.*

- 1.4 Emergency telephone number:

Contact the nearest poison centre.

United Kingdom
NPIS National Poison Information Service 0344 892 0111
Centro Antiveleni Niguarda Milano +39 02-6610-1029

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008

GHS08 health hazard

Repr. 1B *H360 May damage fertility or the unborn child.*

GHS07

Skin Irrit. 2 *H315 Causes skin irritation.*

Eye Irrit. 2 *H319 Causes serious eye irritation.*

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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**

GHS07 GHS08

- **Signal word** Danger

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

propylidynetrimethanol, ethoxylated, esters with acrylic acid
2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one
poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(1-oxo-2-propen-1-yl)oxy]-
Methylated, buthylated melamine formaldheyde resin
Epoxy acrylate - Polyol DiAcrylate
Oligomer Polyol Acrylate

- **Hazard statements**

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

The product does not contain substances with endocrine-disrupting properties in concentrations ≥0.1%.

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

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**		
CAS: 28961-43-5	propylidynetrimethanol, ethoxylated, esters with acrylic acid Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 3, H412	13-18%
CAS: 64401-02-1	poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(1-oxo-2-propen-1-yl)oxy]- Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	5-10%

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CAS: 1314-60-9	diantimony pentoxide Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H332	1-5%
CAS: 68036-97-5	Methylated, buthylated melamine formaldheyde resin Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 4, H413	1-5%
CAS: 71868-10-5	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one Repr. 1B, H360FD; Aquatic Chronic 2, H411; Acute Tox. 4, H302	1-5%
	Epoxy acrylate - Polyol DiAcrylate Skin Sens. 1B, H317; Aquatic Chronic 3, H412	1-5%
	Oligomer Polyol Acrylate Skin Sens. 1B, H317; Aquatic Chronic 4, H413	1-5%
CAS: 67-63-0	propan-2-ol Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	<1%
CAS: 78-93-3 Reg.nr.: 01-2119457290-43-XXXX	2-butanone Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336, EUH066	<1%
CAS: 108-65-6	2-methoxy-1-methylethyl acetate Flam. Liq. 3, H226	<1%

- **SVHC**

71868-10-5	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one

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

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.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact** If skin irritation continues, consult a doctor.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing**
Rinse mouth with water
Instantly call for 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, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire
Carbon monoxide (CO)

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Carbon Dioxide (CO2)
Nitrogen Oxides (NOx)
- **5.3 Advice for firefighters**
- **Protective equipment:** *Put on breathing apparatus.*

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 product reaches water or sewage system.
Do not allow to enter drainage system, surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Avoid contact with eyes, skin and clothes
Ensure that suitable extractors are available on processing machines
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle container with care.
Prevent formation of dust.
- **Information about protection against explosions and fires:** *Keep breathing equipment ready.*
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Open only under gold fluorescent or equivalent yellow safelight
- **Information about storage in one common storage facility:**
Not required.
Store away from foodstuffs.
- **Further information about storage conditions:**
Store container in a well ventilated position.
Store under dry conditions.
Protect from the effects of light.
Keep container tightly sealed.
- **7.3 Specific end use(s)** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

- **Components with limit values that require monitoring at the workplace:**	
1314-60-9 diantimony pentoxide	
MAK (Germania)	*vgl.Abschn.XII, einatembare Fraktion*
TLV (Italy)	*Long-term value: 0.5 mg/m³* *as Sb*

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67-63-0 propan-2-ol	
AGW (Germania)	Long-term value: 500 mg/m³, 200 ppm 2(II);DFG, Y
TWA (Italy)	Short-term value: 983 mg/m³, 400 ppm Long-term value: 492 mg/m³, 200 ppm A4
78-93-3 2-butanone	
IOELV (Unione Europea)	Short-term value: 900 mg/m³, 300 ppm Long-term value: 600 mg/m³, 200 ppm
AGW (Germania)	Long-term value: 600 mg/m³, 200 ppm 1(I);DFG, EU, H, Y
TWA (Italy)	Short-term value: 885 mg/m³, 300 ppm Long-term value: 590 mg/m³, 200 ppm IBE
VL (Italy)	Short-term value: 900 mg/m³, 300 ppm Long-term value: 600 mg/m³, 200 ppm
108-65-6 2-methoxy-1-methylethyl acetate	
IOELV (Unione Europea)	Short-term value: 550 mg/m³, 100 ppm Long-term value: 275 mg/m³, 50 ppm Skin
AGW (Germania)	Long-term value: 270 mg/m³, 50 ppm 1(I);DFG, EU, Y
VL (Italy)	Short-term value: 550 mg/m³, 100 ppm Long-term value: 275 mg/m³, 50 ppm Cute

- **Ingredients with biological limit values:**

67-63-0 propan-2-ol	
BGW (Germania)	25 mg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton 25 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton
IBE (Italy)	40 mg/l Campioni: urine Momento del prelievo: f.t.f.s.l Indicatore biologico: acetone
78-93-3 2-butanone	
BGW (Germania)	2 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: 2-Butanon
IBE (Italy)	2 mg/l Campioni: urine Momento del prelievo: a fine turno Indicatore biologico: Metil etil chetone

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

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- **8.2 Exposure controls**
- **Appropriate engineering controls**
Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation, and control of process conditions.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Store protective clothing separately.
Special rooms for washing, showering and changing are required.
- **Breathing equipment:**
Not necessary if room is well-ventilated.
In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
- **Hand protection**
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**
Rubber gloves
Nitrile rubber, NBR
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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye/face protection** Not required.

SECTION 9: Physical and chemical properties

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

- Physical state	Solid.
- Colour:	Green
- Odour:	
- Odour threshold:	Not determined.
- Melting point/freezing point:	Not determined
- Boiling point or initial boiling point and boiling range	Not determined
- Flammability	Not determined.
- Lower and upper explosion limit	
- Lower:	Not determined.
- Upper:	Not determined.
- Flash point:	Not applicable
- Decomposition temperature:	Not determined.
- pH	Not applicable.
- Viscosity:	
- Kinematic viscosity	Not applicable.
- dynamic:	Not applicable.
- Solubility	
- Water:	Unsoluble

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- **Partition coefficient n-octanol/water (log value)**	Not determined.
- **Vapour pressure:**	Not applicable.
- **Density and/or relative density**	
- **Density**	Not determined
- **Relative density**	Not determined.
- **Vapour density**	Not applicable.
- **Particle characteristics**	See item 3.

- **9.2 Other information**	
- **Appearance:**	
- **Form:**	Solid.
- **Important information on protection of health an d environment, and on safety.**	
- **Self-inflammability:**	Product is not selfigniting.
- **Explosive properties:**	Product is not explosive.
- **VOC**	
- **Water:**	x
- **Solids content:**	100.0 %
- **Change in condition**	
- **Evaporation rate**	Not applicable.

- **Information with regard to physical hazard classe s**	
- **Explosives**	Void
- **Flammable gases**	Void
- **Aerosols**	Void
- **Oxidising gases**	Void
- **Gases under pressure**	Void
- **Flammable liquids**	Void
- **Flammable solids**	Void
- **Self-reactive substances and mixtures**	Void
- **Pyrophoric liquids**	Void
- **Pyrophoric solids**	Void
- **Self-heating substances and mixtures**	Void
- **Substances and mixtures, which emit flammable gases in contact with water**	Void
- **Oxidising liquids**	Void
- **Oxidising solids**	Void
- **Organic peroxides**	Void
- **Corrosive to metals**	Void
- **Desensitised explosives**	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
  Use under W (Tungsten) or yellow light
  No decomposition if used and stored according to specifications.
  Avoid high temperature
- **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

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SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

- LD/LC50 values that are relevant for classification:		
71868-10-5	**2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one**	
Oral	LD50	1,984 mg/kg (rat)

- **Skin corrosion/irritation**
  Prolonged contact may cause skin irritation
  Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** May damage fertility or the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

- Endocrine disrupting properties
None of the ingredients is listed.

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.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
  The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
  Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water.
  Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.
  Danger to drinking water if even extremely small quantities leak into soil.
  Harmful to aquatic organisms

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
  Hand over to disposers of hazardous waste.

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

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SECTION 14: Transport information

- 14.1 UN number or ID number	
- ADR, IMDG, IATA	Void
- 14.2 UN proper shipping name	
- ADR, IMDG, IATA	Void
- 14.3 Transport hazard class(es)	
- ADR, ADN, IMDG, IATA	
- Class	Void
- 14.4 Packing group	
- ADR, IMDG, IATA	Void
- 14.5 Environmental hazards:	Not applicable.
- 14.6 Special precautions for user	Not applicable.
- 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
- UN "Model Regulation":	Void

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.

- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 30

- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

- REGULATION (EU) 2019/1148

- Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

- Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

- Regulation (EC) No 273/2004 on drug precursors

78-93-3	2-butanone	3

- Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

78-93-3	2-butanone	3

- National regulations

- Water hazard class: Water danger class 3 (Self-assessment): extremely hazardous for water.

- Other regulations, limitations and prohibitive regulations

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

71868-10-5	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one

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

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SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing data specification sheet:** Environment protection department.
- **Version number of previous version:** 1
- **Abbreviations and acronyms:**

ADR: Accord européen relatif au 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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Skin Sens. 1B: Skin sensitisation – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4