

according to Regulation (EC) No 1907/2006 (REACH) as amended

FORMULATION FOR DRY-CONTACT TIN-PLATING OF COPPER

Creation date 10. June 2010

Revision date 29. May 2018 Version 1.04

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

FORMULATION FOR DRY-CONTACT TIN-PLATING OF COPPER 1.1. Product identifier

Substance / mixture mixture

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

mixture's intended use product for electroless tinning

Disapproved uses of mixture The product should not be used in ways other then those referred

in Section 1.

Details of the supplier of the safety data sheet 1.3.

Manufacturer

Name or trade name AG TermoPasty Grzegorz Gąsowski

Address Kolejowa 33 E, Sokoły, 18-218

Poland Identification number (ID) 200133730 9661767714 VAT Reg No 862741342

E-mail biuro@termopasty.pl Web address www.termopasty.pl

Competent person responsible for the safety data sheet

AG TermoPasty Grzegorz Gąsowski Name

E-mail biuro@termopasty.pl

1.4. Emergency telephone number

Phone

National Health Service (NHS) 111

National poisoning information centre Scotland, NHS 24: 111

SECTION 2: Hazards identification

2.1. Substance or mixture classification

Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Dam. 1, H318 Carc. 2, H351 Repr. 2, H361d Aquatic Chronic 2, H411

Full text of all classifications and hazard statements is given in the section 16.

Most serious adverse effects on human health and the environment

Suspected of causing cancer. Suspected of damaging the unborn child. Causes serious eye damage. Causes skin irritation. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictogram









Signal word

Danger

Hazardous substances

thiourea Tin(II) chloride Hazard statements

Causes skin irritation.

H317 May cause an allergic skin reaction.

H315



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H318 Causes serious eye damage. H351 Suspected of causing cancer.

H361d Suspected of damaging the unborn child. Toxic to aquatic life with long lasting effects. H411

Precautionary statements

P201 Obtain special instructions before use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face 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.

IF exposed or concerned: Get medical advice/attention. P308+P313 P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

2.3. Other hazards

Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical characterization

Mixture of substances and additives specified below.

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
Index: 612-082-00-0 CAS: 62-56-6 EC: 200-543-5	thiourea	>40	Acute Tox. 4, H302 Carc. 2, H351 Repr. 2, H361d Aquatic Chronic 2, H411	
CAS: 7772-99-8 EC: 231-868-0	Tin(II) chloride	5-<10	Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

Inhalation

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

Eye contact

Do not rub your eyes - it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.



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Ingestion

Provide medical treatment. For persons with no symptoms, call the Toxicological Information Centre to decide about the need of medical treatment; provide information about the substances or composition of the product from the original packaging or the Safety Data Sheet of the product.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation

Inhaling dust can cause corrosion of the breathing system.

Skin contact

May cause an allergic skin reaction.

Eye contact

Causes serious eye damage.

Ingestion

Corrosion of the digestion system can occur.

4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Use a self-contained breathing apparatus and full-body protective clothing. Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in concentrations exceeding the occupational exposure limits. Prevent contact with skin and eyes. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Wash hands and exposed parts of the body thoroughly after handling. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

none



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DNEL

Tin(II) chloride

Workers / consumers	Route of exposure	Value	Effect	Determining method
Workers	Inhalation	8 mg/m ³	Systemic chronic effects	
Workers	Inhalation	8 mg/m ³	Systemic acute effects	
Workers	Inhalation	8 mg/m ³	Local chronic effects	
Workers	Inhalation	8 mg/m ³	Local acute effects	
Workers	Dermal	0.11 mg/kg bw/day	Systemic chronic effects	
Workers	Dermal	0.11 mg/kg bw/day	Systemic acute effects	
Consumers	Inhalation	1.6 mg/m ³	Systemic acute effects	
Consumers	Inhalation	0.023 mg/m ³	Local acute effects	
Consumers	Dermal	0.028 mg/kg bw/day	Systemic acute effects	
Consumers	Oral	6.19 µg/kg	Systemic chronic effects	
Consumers	Oral	5.97 mg/kg bw/day	Systemic acute effects	

PNEC

Tin(II) chloride

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Route of exposure	Value	Determining method			
Drinking water	5 μg/l				
Seawater	0.035 mg/l				
Microorganisms in wastewater treatment plants	1.04 mg/l				
Freshwater sediment	58 mg/kg				
Freshwater environment	5.8 mg/kg				
Soil (agricultural)	68 μg/kg				

8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2. Collect spillage.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance powder Physical state solid at 20°C color biały brązowy Odour not available Odour threshold data not available pН data not available Melting point/freezing point data not available Initial boiling point and boiling range data not available Flash point data not available Evaporation rate non-applicable Flammability (solid, gas) data not available

Upper/lower flammability or explosive limits

flammability limits data not available explosive limits data not available Vapour pressure data not available Vapour density data not available Relative density data not available

Solubility(ies)

solubility in water brak danych rozpuszczalny

solubility in fats not available
Partition coefficient: n-octanol/water data not available
Auto-ignition temperature data not available
Decomposition temperature data not available
Viscosity data not available
Explosive properties data not available
Oxidising properties data not available

9.2. Other information

Density 0.87 g/cm³ ignition temperature data not available

SECTION 10: Stability and reactivity

10.1. Reactivity

not available

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

No toxicological data is available for the mixture.



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Acute toxicity

Based on available data the classification criteria are not met.

thiourea

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Oral	LC50		1750 mg/kg		Rat	
Skin	LD50		>2800 mg/kg		Rabbit	
Inhalation	LC ₅₀		>0.9 mg/m ³	4 hour	Rat	

Tin(II) chloride

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex
Oral	LD50	OECD 423	2.275 mg/kg		Rat	
Inhalation	LC ₅₀	OECD 436	2 mg/l	4 hour	Rat	

Skin corrosion/irritation

Causes skin irritation.

Tin(II) chloride

Route of exposure	Result	Time of exposure	Species
	Highly irritating		

Serious eye damage/irritation

Causes serious eye damage.

Tin(II) chloride

Route of exposure	Result	Time of exposure	Species
	Serious eye damage		

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Tin(II) chloride

Route of exposure	Result	Time of exposure	Species	Sex
	Sensitizing			

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Carcinogenicity

Suspected of causing cancer.

thiourea

Route of exposure	Parameter	Value	Result	Species	Sex
			Carcinogenic		



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Reproductive toxicity

Suspected of damaging the unborn child.

thiourea

Parameter	Value	Result	Species	Sex
		Toxic for reproduction		

Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

Aspiration hazard

Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time. Based on available data the classification criteria are not met.

Tin(II) chloride

Route of exposure	Result	Time of exposure	Species	Sex
	Negative			

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

Toxic to aquatic life with long lasting effects.

thiourea

Parameter	Method	Value	Time of exposure	Species	Environment
LC ₅₀		1000 mg/l	96 hour	Branchydanio rerio	
EC50		1.8 mg/l	96 hour	Daphnia magna	
EC50		3.8-10 mg/l	72 hour	Scenedesmus subspicatus	

Tin(II) chloride

Parameter	Method	Value	Time of exposure	Species	Environment
LC50	OECD 202	55 mg/l	48 hour	Daphnia (Daphnia magna)	
ErC50		0.21 mg/l	72 hour	Skeletonema costatum	
ErC50		0.5 mg/l	48 hour	Scenedesmus quadricauda	
NOEC	OECD 211	0.18 mg/l	21 day	Daphnia (Daphnia magna)	
NOEC		0.053 mg/l	8 day	Scenedesmus quadricauda	
ErCx 10 %		0.03 mg/l	96 hour	Anaboena dolilium	

12.2. Persistence and degradability

Not available.

12.3. Bioaccumulative potential

Not available.

12.4. Mobility in soil



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Not available.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Legislation of waste

Council Directive 75/442/EEC on waste, as amended. Decree No. 383/2001 Coll., on details regarding waste handling as amended. Decree No. 93/2016 Coll., (waste catalogue) as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number

UN 3077

14.2. UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (tiomocznik, thiourea)

14.3. Transport hazard class(es)

9 Miscellaneous dangerous substances and articles

14.4. Packing group

III - substances presenting low danger

14.5. Environmental hazards

not available

14.6. Special precautions for user

Reference in the Sections 4 to 8.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not available

Additional information

Hazard identification No.

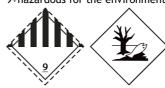
UN number

Classification code

Safety signs



9+hazardous for the environment



Air transport - ICAO/IATA

Packaging instructions passenger 956
Cargo packaging instructions 956

Marine transport - IMDG

EmS (emergency plan)

F-A, S-F

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended. The Act No. 350/2011 Coll., on Chemical Substances and Chemical Preparations as amended (the Chemical Act). Decree No. 432/2003 Coll., laying down conditions for assigning categories to individual jobs, limit values of indices from biological exposure tests, conditions for the sampling of biological materials for biological exposure and the particulars of the reports on work with asbestos and biological agents as amended.

15.2. Chemical safety assessment

not available

SECTION 16: Other information

	11-4-4					
А	list of	r standard	risk bhrase	s used in the	satety data	ı sneet

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H351 Suspected of causing cancer.

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.H411 Toxic to aquatic life with long lasting effects.

Guidelines for safe handling used in the safety data sheet

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P391 Collect spillage.

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

easy to do. Continue rinsing.

P201 Obtain special instructions before use.

P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR European agreement concerning the international carriage of dangerous goods by road

BCF Bioconcentration Factor
CAS Chemical Abstracts Service

CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures

DNEL Derived no-effect level

EC Identification code for each substance listed in EINECS

EC50 Concentration of a substance when it is affected 50% of the population EINECS European Inventory of Existing Commercial Chemical Substances

EmS Emergency plan EU European Union

IATA International Air Transport Association

IBC International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals

IC50Concentration causing 50% blockadeICAOInternational Civil Aviation OrganizationIMDGInternational Maritime Dangerous Goods



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INCI International Nomenclature of Cosmetic Ingredients ISO International Organization for Standardization **IUPAC** International Union of Pure and Applied Chemistry

I C50 Lethal concentration of a substance in which it can be expected death of 50% of the population

Lethal dose of a substance in which it can be expected death of 50% of the population I D50

LOAFC Lowest observed adverse effect concentration

LOAEL Lowest observed adverse effect level log Kow Octanol-water partition coefficient

MARPOL International Convention for the Prevention of Pollution From Ships

NOAEC No observed adverse effect concentration

NOAEL No observed adverse effect level NOEC No observed effect concentration **NOEL** No observed effect level

OEL Occupational Exposure Limits PBT Persistent, Bioaccumulative and Toxic

Parts per million ppm

REACH Registration, Evaluation, Authorisation and Restriction of Chemicals

RID Agreement on the transport of dangerous goods by rail

Predicted no-effect concentration

Four-figure identification number of the substance or article taken from the UN Model Regulations UN **UVCB** Substances of unknown or variable composition, complex reaction products or biological materials

VOC Volatile organic compounds

vPvR Very Persistent and very Bioaccumulative

Acute Tox. Acute toxicity

Aquatic Acute Hazardous to the aquatic environment Aquatic Chronic Hazardous to the aquatic environment

Carc. Carcinogenicity Eye Dam. Serious eye damage Repr. Reproductive toxicity Skin Corr. Skin corrosion

Skin Irrit. Skin irritation Skin Sens. Skin sensitization

STOT RE Specific target organ toxicity - repeated exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

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Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. The Act No. 350/2011 Coll., on Chemical Substances and Chemical Preparations as amended. First aid principles after the exposure to the chemicals (Zásady pro poskytování první pomoci při expozici chemickým látkám, doc. MUDr. Daniela Pelclová, CSc., MUDr. Alexandr Fuchs, CSc., MUDr. Miroslava Hornychová, CSc., MUDr. Zdeňka Trávníčková, CSc., Jiřina Fridrichovská, prom. chem.). Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.