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| DOCUMENTACION TECNICA | CEG-6/Rev.0 |
| SUR-TIN – ESTAÑO EN FRIO | |

El estañador en frío de BUNGARD ELEKTRONIK se presenta en un conjunto de 3 productos que, mezclados con agua, proporcionan 3 litros de estaño líquido.

Para obtener un buen estañado, siga los siguientes pasos:

1. Mezcle el líquido contenido en la botella TEIL 1” con aproximadamente 830 cc de agua. Remueva la solución hasta que el producto quede bien disuelto.
2. Añada otros 830 cc de agua y mezcle el producto en polvo contenido en el sobre «TEIL 2”. Remueva de nuevo hasta que la solución quede bien mezclada.
3. Repita el 2º paso mezclando el producto contenido en el sobre “TEIL 3” y otros 830 cc de agua.
4. Llenen la cubeta con la cantidad de mezcla que desee.
5. Sumerja el circuito a estañar durante aproximadamente 1 minuto en la cubeta que contiene el estaño líquido.
6. Retire la placa y enjuáguela con abundante agua templada hasta que toda la superficie de la misma quede limpia de estaño, a excepción, por supuesto, de las pistas que deben quedar estañadas.
7. Seque la placa y su circuito estará perfectamente estañado.

Material Safety Data Sheet
according to 91/155 EWG

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Trade name: SUR-TIN part I**1 Identification of substance****Product details****Trade name** Akkumulatorensäure 1,285**Article number:** X74130-3**Supplier:** Bungard Elektronik GmbH&Co. KG, Rilke Str. 1, D-51570 Windeck, Tel. ++49 2292/5036**Informing department:** Product safety department**Emergency information**

During office hours: environment protection department At other times: factory fire brigade

2 Composition/Data on components:

Description: Mixture of the substances listed below with harmless additions

Dangerous components:

CAS: 7664-93-9 sulphuric acid C; R 35 25-50%

Identification no(s): EINECS: 231-6395

3 Hazards identification**Hazard designation:** C Corrosive**Information pertaining to particular dangers for man and environment**

R 35 Causes severe burns

4 First aid measures**General advice:** Instantly remove any clothing soiled by the product. In case of unconsciousness bring patient into stable side position for transport.**After inhalation:** After inhaling the product-dust, breathe in plenty of fresh air. Consult a doctor.**After skin contact:** Instantly wash with water and soap and rinse thoroughly.**After eye contact** Rinse immediately opened eye for several minutes under running water. Then consult doctor.**After swallowing:** Do not induce vomiting. Drink plenty of water. Call for medical help.**Information for doctor:** In case of oral ingestion do not use sodium hydrogencarbonate (NaHCO₃) or calcium carbonate (CaCO₃) for neutralization, since developing carbon dioxide may cause perforation of the stomach. Drink suspension of magnesia in water.**5 Fire fighting measures****Suitable extinguishing agents:** Use fire fighting measure that suit the surroundings. Extinguishing powder.**For safety reasons unsuitable extinguishing agents** Water.**Special hazards caused by the material, its products of combustion or flue gases:****Substances potentially set free in case of fire:** hydrogen chloride.**Protective equipment:** Wear full protective suit with self contained breathing apparatus.**6 In case of accidental release****Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.**Measures for environmental protection:** Damp down dust with water spray jet. Prevent material from reaching sewage system or water bodies. If large amounts are released, the authorities must be informed.**Measures for cleaning/collecting:** Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.

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Trade name: SUR-TIN part I**7 Handling and storage****Handling**

Information for safe handling: Keep containers tightly closed. Open and handle container with care. When diluting, always stir the product into water.

Information about protection against explosions and fires: No special measures required.

Storage: Keep containers tightly closed. Store in cool, dry conditions.

Requirements to be met by storerooms and containers: Observe official regulations on storage and handling of water hazardous substances.

8 Exposure controls and personal protection

Components with critical values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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

Personal protective equipment

General protective and hygienic measures: Keep away from food, beverages and fodder. Instantly remove any soiled and impregnated garments. Wash hands before breaks and at end of work. Avoid contact with skin and eyes.

Eye protection: Tightly sealed safety glasses.

Body protection: Standard protective working clothes, chemical resistant security shoes or wellingtons. If of skin contact is possible, wear impenetrable protective clothing.

9 Physical and chemical properties**General Information**

| | |
|---|--|
| Form: | liquid |
| Colour: | colourless |
| Smell: | odourless |
| Change in condition | |
| Melting point/Melting range: | ca. -65°C |
| Boiling point/Boiling range: | ca. 124°C |
| Flash point: | Product is non-flammable nor potentially explosive |
| Ignition temperature: | - |
| Decomposition temperature: | >330°C |
| Danger of explosion: | Product is not approx. potentially explosive |
| Vapour pressure at 20°C | 8.0 mbar |
| Density at 20°C | 1.285 g/cm ³ |
| Solubility in / Miscibility with Water | Fully miscible |
| pH value at 20°C: | < 1 |

10 Stability und reactivity

Thermal decomposition /conditions to be avoided: Stable at ambient temperatures. Decomposition at temperatures > 330°C.

Materials to be avoided: Base metals, bases.

Dangerous reactions: Violent reaction with strong alkalis. Reacts with metals forming hydrogen.

Dangerous products of decomposition: Sulphur oxides (SO₃ and SO₂).

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Trade name: SUR-TIN part I**11 Toxicological information****Acute toxicity:****LD/LC 50 values that are relevant for classification:**

7664-93-9 Sulphuric Acid Oral / LD50 2140 ml/kg (rat)

Primary irritant effect:**on the skin:** I Strong caustic effect on skin and mucous membranes**on the eye:** Strong caustic effect.**Sensitization:** No sensitizing effect known.**Additional toxicological information:** Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.**12 Ecological information:****Ecotoxicological effects:****Remark:** Fish, plankton and other waterorganism could be damaged by pH-shift.**General notes:** Do not allow to enter drainage system, surface or ground water**13 Disposal considerations****Product:** The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.**Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.**Waste disposal key number:** Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.**Uncleaned packagings:****Recommendation:** Rented packaging: After optimal emptying, close immediately and return to the supplier without cleaning. Care should be taken that no other materials get into the packaging. After complete emptying and cleaning, send to be reconditioned or recycled. Other containers: After complete emptying and cleaning, send to be reconditioned or recycled.**Recommended cleaning agent:** Water, if necessary with cleaning agent.**14 Transport regulations:****Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)****ADR/RID-GGVS/E Class:** 8 (C1) Corrosive substances**Kemler Number:** 80**UN Number** 2796**Packing group** II**Label** 8**Designation of goods** 2796 SULPHURIC ACID

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Printing date 15.03.04

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Trade name: SUR-TIN part I**15 Regulations:****Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

Code letter and hazard designation of product: C Corrosive**Hazard-determining components of labelling:** Sulphuric acid**Risk phrases:**

35 Causes severe burns.

Safety phrases:

2 Keep locked up and out of the reach of children.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

27/28 After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

30 Never add water to this product.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

46 If swallowed, seek medical advice immediately and show this container or label.

National regulations**Water hazard class:**

Water hazard class 1 (self assessment according to German VwVwS (Regulations for water-hazardous substances of 17/OS11999): slightly hazardous for water.

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: see item 1: Informing departement.

Safety Data Sheet
according to 91/155 EEC

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Product name: SUR-TIN, Part II**1 Designation of product, preparation, supplier****Commercial product name: SUR-TIN Part II****Product code: 74130****Supplier:**

Bungard Elektronik GmbH&Co. KG, Rilke-Str. 1, D-51570 Windeck, Germany. Tel. ++49 22 92 / 5036

2 Constituents**Chemical name:** Tin (II) sulphate, crist., approx. 54% Sn**3 Possible dangers****Designation of hazard:** Xi Irritant**Special advice on danger for man and environment:**

R 36/37 Irritant to eyes and respiratory system

4 First Aid procedure

| | |
|----------------|--|
| breath: | Supply fresh air, seek medical advice if symptoma persist |
| skin: | The product is normally not skin irritant |
| eye: | Rinse the open eye with running water for several minutes. Seek medical advice |
| swallow | Seek medical advice if symptoma persist |

5 Measures in case of fire**Suitable extinguishing media:** CO₂, powder, water spray jet, foam.**Special protective supply:** -**6 Measures at unwanted spillage / leakage:**

| | |
|----------------------------|------------------------------|
| No special measures | Assure good room ventilation |
|----------------------------|------------------------------|

7 Handling and storage**Handling:** Avoid formation of dust**Fire, Explosion:** No special advice**Storage:** Keep container well closed, cool and dry

Safety Data Sheet
according to 91/155 EEC

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Product name: SUR-TIN, Part II**8 Exposition limitation and personal safety****Additional advice on technical device:** No further statements, see 7.**Components with work place related exposition limitations: -****Personal safety equipment:****Common hygienic measures:**

Keep away from food, beverages and animal food.
Remove dirty or wetted clothes immediately.
Wash hands at the end or any interruption of work.
Avoid contact with eyes and skin.

Respiratory protection:

At short exposition: Filter unit
At long or intense exposition: wear respiratory
protection device

Hand protection:

Gloves

Eye protection:

Tight fitting glasses.

9 Physical and chemical properties**Form:** Powder**Colour:** white**Odour:** none

| <u>Property</u> | <u>Value / Range</u> |
|-----------------------------|---------------------------------|
| Melting point: | approx. 360 °C |
| Boiling point: | n. a. |
| Flash point: | n. a. |
| Flamability: | The product is not inflammable. |
| Danger of Explosion: | No danger of explosion |
| Vapour tension: | at 8 °C >1 mbar |
| Density : | not measured |
| Solubility in water: | 330 g/l at 20°C |
| pH value: | (50 g/l at 20°C:) approx. 2 |

10 Stability and reactivity**Thermal decomposition:** None at normal use**Dangerous reactions:** None known**Hazardous decomposition:** None known**11 Toxicology****Actual Toxicity:****Primary Irritation:****on the skin:** None**in the eye:** Irritation**Sensibilisation:** Not known

Safety Data Sheet
according to 91/155 EEC

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Product name: SUR-TIN, Part II**12 Ecology**

Common advice: water pollution potential: 1 (Self classification): weak pollutant
Do not allow to get into the drain or into surface or ground water

13 Waste disposal

Product:
Recommendation: Do not allow to get into the drain. Do not dispose off with domestic waste. Seek advice of responsible authorities.

Contaminated packing material:
Recommendation: Seek advice of responsible authorities.

14 Transport**Surface transport ADR/RID and GGVS/GGVE:****ADR/RID-GGVS/E Class:** -**Digit/letter:** -**Sea shipment IMDG/GGVSee:****IMDG/GGVSee Class:** -**Air freight ICAO-TI und IATA-DGR:****ICAO/IATA Class** -**Transport / further declarations:** No dangerous good under the above directives**15 Instructions****Declaration according to EEC directives:**

The product is listed in EEC directive / directive on dangerous goods and is labelled.

Symbol and designation of hazard: Xi Irritant**R-phrases:**

36/37 Irritant to eyes and respiratory system

S-phrases:

24/25 Avoid contact with eyes and skin

2 Must not get into childrens´ hands

22 Avoid inhalation of dust

36 Wear protective clothing

National directives:**VbF Classification:** n. a.**Water pollution potential:** WGK 1 : weak pollutant.**16 Further declarations:**

The above data are in conformity with European safety regulations. They describe the product in the original form and packing but they do not allow a specification of the ready made liquid, fresh or used, that this product is intended to be a part of.

Safety Data Sheet
according to 91/155 EEC

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Commercial product name: SUR-TIN, Part III**1 Designation of product, preparation, supplier****Commercial product name: SUR-TIN Part III****Product code: 74130****Supplier:**

Bungard Elektronik GmbH & Co. KG, Rilke-Str. 1, D-51570 Windeck, Germany Tel. ++ 22 92 5036

2 Constituents**Description:** Preparation of the following chemicals with harmless additives**CAS-No:** 30062-56-6**Name:** Thiourea**Contents** 50-100%**Hazardous** Xn**R phrases** 22-40**3 Possible dangers****Designation of hazard:** Xn harmful**Special advice on danger for man and environment:**

R 22 Harmful if swallowed

R 40 Danger of irreversibel damage

4 First Aid procedure

general: Symptoma may occur several hours after the accident. Medical observation is necessary for more than 48 hours after an accident

breath: Supply fresh air, seek medical advice if illness persists

skin: The product is normally not skin irritant

eye: Rinse the open eye with running water for several minutes. Seek medical advice

swallow Seek medical advice immediately

5 Measures in case of fire**Suitable extinguishing media:** CO2, powder, water spray jet, foam.**Special protective supply:** -**6 Measures at accidental spillage / leakage:****Personal protection** Avoid formation of dust**Environmental protection** Do not allow to get into the drain or into surfac or ground water**Cleaning and removal procedure** Contaminated material to be treated according to 13.**7 Handling and storage****Handling:** Avoid formation of dust**Fire, Explosion:** No special advice**Storage:** No special advice

Safety Data Sheet
according to 91/155 EEC

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Commercial product name: SUR-TIN, Part III**8 Exposition limitation and personal safety****Additional advice on technical device:** No further statements, see 7.**Components with work place related exposition limitations:** -**Personal safety equipment:**

Common hygienic measures: Keep away from food, beverages and animal food.
Wash hands at the end or any interruption of work.

Respiratory protection: At short exposition: Filter unit
At long or intense exposition: wear respiratory protection device

Hand protection: Gloves**Eye protection:** n. a.**9 Physical and chemical properties****Form:** Powder**Colour:** specific**Odour:** specific

| <u>Property</u> | <u>Value / Range</u> |
|-----------------|----------------------|
|-----------------|----------------------|

| | |
|--------------------------------|-------------------------------------|
| Melting point: | n .a. |
| Boiling point: | n. a. |
| Flash point: | 350 °C |
| Self inflamability: | The product is not self-inflamable. |
| Danger of Explosion: | No danger of explosion |
| Vapour tension: | n. a. |
| Density : | at 20 °C: 1,46 g/cm ³ |
| Solubility in water: | soluble |
| pH value: | (50 g/l at 20°C): 2 |
| Org. solvents contents: | 0% |
| Solid contents: | 100 % |

10 Stability and reactivity**Thermal decomposition:** None at normal use**Dangerous reactions:** None known**Hazardous decomposition:** None known**11 Toxicology****Actual Toxicity:****relevant LD/LC 50 values:**

| component | type | value | species |
|------------------|-------------|--------------|----------------|
| Thiourea | oral | 1 750 mg/kg | rat |
| | dermal | 2 800 mg/kg | rbt |

Primary Irritation:**on the skin:** None**in the eye:** None**Sensibilisation:** Not known**Additional advice on toxicology:**

Due to a calculation according to the EEC directive on classification of preparations, the product presents the following hazard: Xn Harmful

Safety Data Sheet
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Commercial product name: SUR-TIN, Part III**12 Ecology**

Common advice: water pollution potential: 2 (Self classification): pollutant
Do not allow to get into the drain or into surface or ground water.

13 Waste disposal

Product:
Recommendation: Do not allow to get into the drain. Do not dispose off with domestic waste. Seek advice of responsible authorities.

Contaminated packing material:
Recommendation: Seek advice of responsible authorities.

Cleaning: Water, possibly with detergent

14 Transport**Surface transport ADR/RID and GGVS/GGVE:**

ADR/RID-GGVS/E Class: 9 Various dangerous goods and parts
Digit/letter: 12c
Kemler No. 90
UN No. 3077
Label 9
Designation Environmentally hazardous substance, n.o.s., thiourea

Sea shipment IMDG/GGVSee:

IMDG/GGVSee Class: 9
Page 9029
UN No. 3077
Packing group III
Proper tech. name Environmentally hazardous substance, n.o.s., thiourea

15 Instructions**Declaration according to EEC directives:**

The product is listed in EEC directive / directive on dangerous goods and is labelled.

Symbol and designation of hazard: Xn Harmful

Labelling relevant hazardous component: Thiourea

R-phrases:

22 Harmful if swallowed
40 Danger of irreversible damage
51/53 Poisonous for water organisms, can create long-term adverse effects on waters

S-phrases:

22 Avoid inhalation of dust
24 Avoid contact with skin
36/37 Wear appropriate protective gloves and protective work clothes
61 Avoid exposition to the environment. Search special advice, consult safety data sheet.

National directives: n. a.

VbF Classification: n. a.

Water pollution potential: WGK 2 pollutant.

16 Further declarations:

The above data describe the product in the original form and packing but they do not allow a specification of the ready made liquid, fresh or used, that this product is intended to be a part of.