

 BROQUETAS <small>LA SOLDADURA SEGURA · THE RELIABLE SOLDER</small>	SAFETY DATA SHEET According to Regulation (EU) 2020/878, amending Annex II of Regulation (EC) No 1907/2006 (REACH) ECO FLUX PB-FREE	
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	Regulation	Composition metal nº.	Description	UFI number
ECO 1 – flux	UNE-EN ISO 9453	401	Sn99.3/Cu0.7	D110-Y0KJ-Q004-R9AC
ECO 2 – flux	UNE-EN ISO 9453	702	Sn97/Ag3	M800-E0CY-X00P-T72S
ECO 3 – flux	UNE-EN ISO 9453	402	Sn97/Cu3	1410-G08Y-000M-EMWE
ECO 4 – flux	UNE-EN ISO 9453	711	Sn96.5/Ag3/Cu0.5	DV00-Y06S-3004-EM57
ECO 5 plus – flux	UNE-EN ISO 9453	715	Sn98.5/Ag0.8/Cu0.7	NRM2-R0DQ-M00A-J630
ECO 5 – flux	UNE-EN ISO 9453	501	Sn99/Ag0.3/Cu0.7	2S00-F0HC-S00N-S8K5
ECO 6 – flux	UNE-EN ISO 9453	713	Sn95.5/Ag3.8/Cu0.7	GMK2-R00X-000A-7GWV
ECO 7 – flux	UNE-EN ISO 9453	703	Sn96.5/Ag3.5	5C00-X02D-8005-FJNU
SN100ECO – flux	UNE-EN ISO 9453	403	Sn99,25/Cu0,7/Ni0,05	XNM2-70QA-900T-WUGX

Flux name	Classification and regulation
PW13	1.1.2.B (EN ISO 9454) / ROL1 (J-STD-004) EN 61190 1-3
PW12	1.1.3.B (EN ISO 9454) / ROL0 (J-STD-004) EN 61190 1-3
PW25	1.2.2.B (EN ISO 9454) / REM1 (J-STD-004) EN 61190 1-3
PW24	1.2.3.B (EN ISO 9454) / REM0 (J-STD-004) EN 61190 1-3
PW15	1.1.2.B (EN ISO 9454) / ROM1 (J-STD-004) EN 61190 1-3
PW14	1.1.3.B (EN ISO 9454) / ROM0 (J-STD-004) EN 61190 1-3
PW23	1.2.2.B (EN ISO 9454) / REL1 (J-STD-004) EN 61190 1-3
PW22	1.2.3.B (EN ISO 9454) / REL0 (J-STD-004) EN 61190 1-3

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

Identified uses	: For manual and automated wave and dip soldering. Surface mount components of the electronics industry assembly. For own, professional and industrial use.
Uses advised against	: Do not use for other purposes other than those described in the product.

1.3. Details of the supplier of the safety data sheet

Supplier	: BROQUETAS, S.L.
Address	: c/ Can Sallarès 12-16 08740 Sant Andreu de la Barca, Barcelona (Spain)
Telephone number	: +34 936401900
E-mail address for a competent person responsible for the safety data sheet:	: broquetas@broquetas.com

1.4. Emergency telephone number

Availability	: +34 936401900 Monday to Friday from 8:00 to 14:00 h.
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) Nº 1272/2008 [CLP]	
Hazard Classes/ categories	Hazard statements (H)
Skin Sens. 1	H317: May cause an allergic skin reaction.

2.2. Label elements

According to Regulation (EC) Nº 1272/2008 [CLP]



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Signal Word and Pictograms	Hazard statements (H)	Precautionary Statements (P)*
Warning  GHS07	H317: May cause an allergic skin reaction.	P261 P280 P302+P352 P333+P313 P362+P364 P501

* Full text of the Precautionary Statements (P):

P261: Avoid breathing dust/fume/gas/mist/vapours/ spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water and soap.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.
P501: Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards

Compliance with PBT/vPvB criteria : Not classified as PBT or vPvB.

Other hazards not identified in the classification

Due to the high temperatures reached when working with this product, burns caused by molten material may occur. It can be harmful and produce health damage by inhalation of vapours emitted during the welding process. It should be used in ventilated areas. It has no known endocrine disrupting properties.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Chemical name	Content (%)	CAS number	CE number	REACH registration	Classification according Regulation 1272/2008 (CLP)*
Tin (Sn)	95.5 – 99.3	7440-31-5	231-141-8	-	Not classified
Silver (Ag)	0 – 3.8	7440-22-4	231-131-3	-	Not classified**
Copper (Cu)	0 – 3	7440-50-8	231-159-6	-	Not classified***
Rosin	~3	8050-09-7	232-475-7		Skin Sens. 1; H317

* Full text of hazard statements: see section 16.

** If the particle size of the substance is < 1 mm, it is classified as Aquatic Acute 1 (H400) and Aquatic Chronic 1 (H410).

*** If the substance is presented in flakes, it is classified as Acute Tox. 4 – oral (H302).

****The product contains no known nanomaterials.

SECTION 4: First aid measures

4.1. Description of first aid measures

General notes

: If a health problem is detected, seek medical advice.

In case of inhalation

: Remove victim to fresh air and seek medical advice.

In case of contact with skin

: Wash skin thoroughly with mild soap and water. Consult a doctor if symptoms persist.

In case of contact with eyes

: Immediately rinse long with water for several minutes holding the eyelids open. Consult an ophthalmologist immediately.

In case of ingestion

: Consult a doctor immediately. Do not induce vomiting. If the person is conscious, rinse mouth with



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Recommendations for first aid responders

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

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

water. DO NOT give water to an unconscious person. (Under the right conditions of use, the product is not ingestible).

: Use suitable protection clothes.

: May cause skin irritation, especially if exposure is repeated.
May cause irritation by inhalation of vapours during application, if exposure is prolonged and in a small, poorly ventilated space.

: Undefined

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Use chemical powder, foam or water fog.

Unsuitable extinguishing media

: Unknown.

5.2. Special Hazards arising from the substance or mixture

Hazardous combustion products

: Vapours of oxides and fumes of metals.

Other specific hazards

: Smoke released by the combustion of the product may cause damage to the airways.

5.3. Advice for firefighters

: In case of fire, use individual respiratory protection equipment. Firefighters must wear fire resistant protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Follow the indications described in section 8.

For emergency responders

: Avoid contact with skin, eyes and clothing. Follow the indications described in section 8.

6.2. Environmental precautions

: Avoid contact with drains and riverbeds.

6.3. Methods and material for containment and cleaning up

Collect the product mechanically. To completely remove, clean the surface with water.

6.4. Reference to other sections

: For more information, see sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevention and protection measures

: Handle the product carefully. During the welding process the product attains high temperatures so using suitable globes and eye protection and wearing a mask in poorly ventilated areas is recommended, as it is described in section 8.2.

Advice on general occupational hygiene

: Do not eat, drink or smoke while handling the product. Keep proper hygiene after handling.

7.2. Conditions for safe storage, including any compatibilities

Technical measures and storage conditions

: Storage temperatures above 60 ° C should be avoided.

Containers requirements and storage areas

: Store in tightly closed containers in a dry location.

Further information for storage

: Keep container tightly closed.

7.3. Specific end use (s)

: Surface mount components of the electronics industry assembly.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters	
Occupational exposure limits	: Tin: TLV (as TWA): 2 mg/m3 (as tin) (ACGIH 1990-1991) Silver : TLV (metal): 0.1 mg/m3 (ACGIH 1997).LEP UE: 0.1 mg/m3 as TWA (UE 2000) copper: TLV (metal): 1 mg/m3 (ACGIH 1997). LEP UE: 1 mg/m3 as TWA (UE 2000)
DNELs and PNECs	: Not available
8.2. Exposure controls	
Appropriate engineering controls	: It is recommended the use in open or well-ventilated areas or the use of forced mechanical extraction.
Individual protection measures, such as personal protective equipment	
Eye/face protection	: Safety goggles to avoid splashes. <u>PPE:</u> Protection glasses with integrated mount. <u>Characteristics:</u> 'CE' Category II. Eye protector with integrated mount to use against dust, fumes, fog and vapours. <u>CEN standards:</u> EN 165, EN 166, EN 167, EN 168 <u>Maintenance:</u> : Visibility through lenses should be optimal, so their daily cleaning is required, Protectors should be disinfected periodically following the manufacturer's instructions. <u>Observations:</u> Indicators of deterioration include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.
Skin protection	
Hand protection	: Use resistance gloves for tiny molten metal splashes. <u>PPE:</u> Protection gloves against tiny molten metal splashes. <u>Características:</u> 'CE' Category III. <u>Normas CEN:</u> EN 407: 2004, UNE-EN 12477:2002 <u>Mantenimiento:</u> They should be stored in a dry place, away from heat sources, and the exposure to sunlight should be avoided as much as possible. Do not perform modifications on the gloves that may alter their resistance, and do not apply any paints, solvents or adhesives. <u>Observaciones:</u> Gloves should be of the right size and fit the hand without being too loose or too tight. They should always be used with clean, dry hands.
Others	: Use appropriate protective clothing.
Respiratory protection	: Use filter mask P3 BE EN 141 if you work for long periods of time in small, poorly ventilated spaces. Use in open or well ventilated áreas or use forced mechanical extraction. <u>PPE:</u> Filter mask for protection against gases and particles <u>Characteristics:</u> 'CE' Category III. The mask must have a wide field of vision and anatomically shaped to provide sealing and tightness. <u>CEN standards:</u> EN 136, EN 140, EN 405 <u>Maintenance:</u> Do not store in locations exposed to high temperatures and damp environments before use. The state of the inhalation and exhalation valves of the face adapter must be specially controlled. <u>Observations:</u> Read carefully the manufacturer's instructions about the use and maintenance of equipment.
Environmental exposure controls	: Take into account the usual precautions to protect the environment, see section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties	
Appearance	: Dark gray solid.
Odour	: Not significant
Odour threshold	: Not applicable.
pH	: Not applicable.
Melting point/freezing point	: 217-320°C
Initial boiling point and boiling range	: Not applicable.
Flash point	: Non-flammable.

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Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Non-flammable.
Upper/lower flammability or explosive limits	: Not applicable.
Vapour pressure	: Not applicable.
Vapour density	: Not applicable.
Relative density	: 7,31-7,38 g/cm ³
Solubility(ies)	: Water-insoluble.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not applicable.
Viscosity	: Not applicable.
Explosive properties	: No.
Oxidising properties	: No.
9.2. Other information	: No additional information.

SECTION 10: Stability and reactivity

10.1. Reactivity	: Stable under normal conditions (does not react)
10.2. Chemical stability	: Stable under normal conditions.
10.3. Hazardous reactions	: Heating may cause fumes of metal and vapour oxides.
10.4. Conditions to avoid	: Storage temperatures above 60 ° C should be avoided.
10.5. Materials to avoid	: Contact with strong acids and bases that can cause exothermic reactions should be avoided.
10.6. Hazardous decomposition products	: Not available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Hazard/Effect class	
Acute toxicity	: <u>Tin (CAS: 7440-31-5):</u> LC50 (Inhalation)> 5 mg/L LD50 (Oral)> 2000 mg/kg LD50 (dermal)>2000 mg/kg <u>Silver (CAS: 7440-22-4):</u> LC50 (Inhalation)>5,16 mg/L LD50 (Oral)> 5110 mg/kg LD50 (dermal)>2000 mg/kg <u>Copper (CAS: 7440-50-8):</u> LC50 (Inhalation)>5,11 mg/L LD50 (Oral)> 2500 mg/kg LD50 (dermal)>2000 mg/kg <u>Rosin (CAS:8050-09-7):</u> LD50 (Oral)> 2000 mg/kg LD50 (dermal)>2000 mg/kg <u>Mixture:</u> ATEmix (Inhalation)>5,13 mg/L ATEmix (Oral)>2719 mg/kg ATEmix (dermal)>2000 mg/kg
Skin corrosion/irritation	: Not applicable.
Serious eye damage/irritation	: Not applicable.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.

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Germ cell mutagenicity	: Not applicable.
Carcinogenicity	: Not applicable.
Reproductive toxicity	: Not applicable.
STOT-single exposure	: Not applicable.
STOT-repeated exposure	: Not applicable.
Aspiration hazards	: Not applicable.
Symptoms	: During heating may produce slight eye, nasal and respiratory track irritation.
Chronical effects	: Only after years of constant activity in unfavourable conditions, there may be risk of pulmonary edema.
11.2. Information on other hazards	
11.2.1. Endocrine disrupting properties	: Contains no known endocrine disruptor.
11.2.2. Information on other hazards	: Not applicable.

SECTION 12: Ecological information

12.1. Toxicity information	: No data available.
12.2. Persistence and degradability	: No data available.
12.3. Bioaccumulative potential	: No data available.
12.4. Mobility in soil	: No data available.
12.5. Results PBT and vPvB assessment	: Not classified as PBT nor vPvB.
12.6. Endocrine disrupting properties	: Contains no known endocrine disruptor.
12.7. Ecological effects information	: This substance may be hazardous to the environment; should pay particular attention to aquatic ecosystems.

SECTION 13: Disposal considerations

13.1. Waste treatment methods	
Appropriate methods of waste treatment of product	: Product waste must be transported to an authorized waste disposal plant. Dispose according to local and national regulations. Do not remove by direct discharge into rivers or sewage system.
Appropriate methods of waste treatment of contaminated packaging	: Handle contaminated containers as the product itself.

SECTION 14: Transport information

	ADR/RID	AND/ADNR	IMDG	IATA
14.1. UN number	The product is not classified according to transport agreements.			
14.2. UN proper shipping name				
14.3. Transport hazard class (es)				
14.4. Packing group				
14.5. Environmental hazards				
14.6. Special precautions for user				
Special dispositions				

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture	
EU regulations	
REACH authorizations	: The product does not contain a substance present in the candidate list of SVHC, and in Annex XIV of REACH.
REACH use restrictions	: The product has no restriction of use.

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Regulation (EC) 2037/2000 on substances that deplete the ozone layer

: Not applicable.

15.2. Chemical safety assessment

: An evaluation of the product's chemical safety has not been carried out.

SECTION 16: Other information

Changes to the previous version

: Changes to sections 1.2, 2.3, 3.2, 11.2, 12.6, and 12.7. This SDS supersedes version 2.

Abbreviations and acronyms

: SDS: Safety data sheet
 PBT: Persistent, bioaccumulative and toxic
 vPvB: Very persistent and very bioaccumulative
 TLV: Thershold Limit Values
 TWA: Time Weighted Average
 ACGIH: American Conference of Industrial Hygienists
 DNEL: Derived non-effect level
 PNEC: Predicted non-effect concentration
 SVHC: Substances of Very High Concern
 LD50: Median Lethal dose.
 LC50: Median Lethal Concentration.
 ATEmix: Acute toxicity estimated of the mixture.

Key literature references and sources for data

: Safety data sheet of the components.
<https://echa.europa.eu/>

Methods used for the purpose of mixture classification according to Regulation 1272/2008 (CLP):

: Calculation performed after the classification of substances in the mixture.

Hazard statements (section 3.2)

: H317: May cause an allergic skin reaction.
 H400: Very toxic to aquatic life.
 H410: Very toxic to aquatic life with long lasting effects.
 H302: Harmful if swallowed.

Advice on any training appropriate for workers:

: Maintenance and production plant crew has received information and training on the safety instructions in plant and equipment.

NOTES

: This information is based on the knowledge we have so far. This SDS refers exclusively to this product. All chemical substances in this product have been reported or are exempt from notification under notification to the EC laws. Information in this SDS is based on the available published sources and is believed to be accurate. No warranty, express or implied, is made and our company assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application. The specifications of this safety data sheet describes the safety requirements of our product, this is not a guarantee of characteristics. They are based on current state.