

# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

ECO WITH FLUX

Revision date: 09/11/2015

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier.

TRADE NAME	REGULATION	COMPOSITION METAL N°	DESCRIPTION
ECO 1	UNE.EN ISO 9453	401	S-Sn99.3 Cu 0.7
ECO 2	UNE.EN ISO 9453	702	S-Sn97Ag3
ECO 3	UNE.EN ISO 9453	402	S-Sn97Cu3
ECO 4	UNE.EN ISO 9453	711	S-Sn96.5 Cu 0.5 Ag3
ECO 5	UNE.EN ISO 9453	501	S-Sn99 Cu 0.7 Ag0.3
ECO 6	UNE.EN ISO 9453	713	S-Sn95.5 Cu 0.7 Ag3.8
ECO 7	UNE.EN ISO 9453	703	S-Sn96.5 Ag4
ECO 8	-----	----	S-Sn99.7 Ag0.3

FLUX NAME	CLASSIFICATION AND REGULATION
B2.2	1.1.3.B (EN ISO 29454-1) / ROM0 (J-STD-004) EN 61190 1-3:2007
B2.1	1.1.2.B (EN ISO 29454-1) / ROM1 (J-STD-004) EN 61190 1-3:2007
B1.2	1.2.3.B (EN ISO 29454-1) / REM0 (J-STD-004) EN 61190 1-3:2007
B1.1	1.2.2.B (EN ISO 29454-1) / REM1 (J-STD-004) EN 61190 1-3:2007

### 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.

#### Uses advised against

Do not use for other purposes other than those described in the product.

# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

ECO WITH FLUX

Revision date: 09/11/2015

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture.

#### REGULATION (EC) N° 1272/2008 (CLP)

##### Hazard category/class

##### Hazard(s) statement

This mixture is not classified as hazardous according to Regulation (EC) N° 1272/2008 (CLP).\*

\* This product is composed of an alloy of tin and lead with a resin flux inside. In section 3 is indicated that the resin is classified as Skin Sens. 1, but because the resin is coated by metal alloy and the contact with it is not possible, this substance is not taken into account in mixture classification.

### 2.2 Label elements.

#### REGULATION (CE) N° 1272/2008 [CLP]

##### Pictograph and signal word

##### Hazard

Not applicable. This mixture is not classified as hazardous according to Regulation (EC) N°1272/2008 (CLP).

### 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.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 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).

# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

ECO WITH FLUX

Revision date: 09/11/2015

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures.

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 vomit. If the person is conscious, rinse mouth with water. DO NOT give water to an unconscious person. (Under the right conditions of use, the product is not ingestible).

#### Recommendations for first aid responders

Use suitable protection clothes.

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

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.

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

Undefined.

## 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 in the airways.

### 5.3 Advice for firefighters.

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



# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

ECO WITH FLUX

Revision date: 09/11/2015

## 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.

## 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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters.

#### Occupational exposure limits

Tin: TLV (as TWA): 2 mg/m<sup>3</sup> (as tin) (ACGIH 1990-1991)

Silver : TLV (metal): 0.1 mg/m<sup>3</sup> (ACGIH 1997).LEP UE: 0.1 mg/m<sup>3</sup> as TWA (UE 2000)

Copper: TLV (metal): 1 mg/m<sup>3</sup> (ACGIH 1997). LEP UE: 1 mg/m<sup>3</sup> as TWA (UE 2000)

#### DNELs and PNECs

Not available.

# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

ECO WITH FLUX

Revision date: 09/11/2015

## 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.

PPE: Protection glasses with integrated mount.

Characteristics: «CE» Category II. Eye protector with integrated mount to use against dust, fumes, fog and vapours.

CEN standards: EN 165, EN 166, EN 167, EN 168

Maintenance: Visibility through lenses should be optimal, so their daily cleaning is required, Protectors should be disinfected periodically following the manufacturer's instructions.

Observations: Indicators of deterioration include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.

#### Skin/hand protection

Use resistance gloves for tiny molten metal splashes.

PPE: Protection gloves against tiny molten metal splashes..

Characteristics: «CE» Category III.

CEN standards: EN 407: 2004, UNE-EN 12477:2002

Maintenance: 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.

Observations: 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.

PPE: Filter mask for protection against gases and particles.

Characteristics: «CE» Category III. The mask must have a wide field of vision and anatomically shaped to provide sealing and tightness.

CEN standards: EN 136, EN 140, EN 405.

Maintenance: 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.

Observations: 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.

## 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.

# SAFETY DATA SHEET

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

## ECO WITH FLUX

Revision date: 09/11/2015

Flash point: Non flammable.  
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<sup>3</sup>.  
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.

## 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 containing chlorides.

### 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 may cause exothermic reactions should be avoided.

### 10.6 Hazardous decomposition products.

Not available.

# SAFETY DATA SHEET

ECO WITH FLUX

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

Revision date: 09/11/2015

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects.

Hazard/Effect class

a) Acute toxicity:

Tin (CAS: 7440-31-5):

LC50 (Inhalation)> 5 mg/L

LD50 (Oral)> 2000 mg/kg

LD50 (dermal)>2000 mg/kg

Silver (CAS: 7440-22-4):

LC50 (Inhalation)>5,16 mg/L

LD50 (Oral)> 5110 mg/kg

LD50 (dermal)>2000 mg/kg

Copper (CAS: 7440-50-8):

LC50 (Inhalation)>5,11 mg/L

LD50 (Oral)> 2500 mg/kg

LD50 (dermal)>2000 mg/kg

Rosin (CAS:8050-09-7):

LD50 (Oral)> 2000 mg/kg

LD50 (dermal)>2000 mg/kg

ATEmix alloy Tin-Silver-Copper:

ATEmix (Inhalation)>5,13 mg/L

ATEmix (Oral)>2719 mg/kg

ATEmix (dermal)>2000 mg/kg

b) Skin corrosion/irritation

Not applicable.

c) Serious eye damage/irritation

Not applicable.

d) Respiratory or skin sensitisation

Not applicable.

e) Germ cell mutagenicity

Not applicable.

f) Carcinogenicity

Not applicable.

g) Reproductive toxicity

Not applicable.

h) STOT-single exposure

Not applicable.

i) STOT-repeated exposure

Not applicable.

j) Aspiration hazards

Not applicable.

k) Symptoms

During heating can cause slight eye, nasal and respiratory track irritation.

l) Chronical effects

Only after years of constant activity in unfavorable conditions, there may be risk of pulmonary edema.



# SAFETY DATA SHEET

ECO WITH FLUX

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

Revision date: 09/11/2015

## 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 Ecological effects information.

This substance may be hazardous to the environment; should pay particular attention to aquatic ecosystems.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods.

#### Appropriate methods of waste treatment of both substance or mixtures

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 for removing contaminated packaging

Handle contaminated containers as the product itself.

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

# SAFETY DATA SHEET

ECO WITH FLUX

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

Revision date: 09/11/2015

## 15. REGULATORY INFORMATION

### 15.1 Waste treatment methods 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.

**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.

## 16. OTHER INFORMATION

### Changes to the previous version

Format adaptation to the REACH Regulation amendment, the Regulation (EU) 2015/830. Mixture classified according to Regulatory (CE) 1272/2008 (CLP).

### Abbreviations and acronyms

SDS: Safety data sheet  
PBT: Persistent, bioaccumulative and toxic  
vPvB: Very persistent and very bioaccumulativ  
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 (H):

H317: May cause an allergic skin reaction.



# SAFETY DATA SHEET

ECO WITH FLUX

According to Regulation (EU) 2015/830, amending Annex II of Regulation (EC) N°1907/2006 (REACH)

Revision date: 09/11/2015

**Classification codes:**

Skin Sens. 1: skin sensitization, Category 1.

**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.