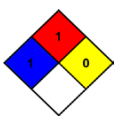




27. Mai 2016

Material Safety Data Sheet – according to Regulation (EC) No. 453/210

INTERNATIONAL STANDARD NORM ISO 11014-1

Trade name: SAC-3	Solder wire Sn95,5Ag3,8Cu0,7 DIN EN 29 453	Flux F-SW34 NF EN 29 454.1
<p>1.) <u>IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING</u></p> <p>1.1.) Product identifier Product form : Trade name : Product code: Other code :</p> <p>1.2.) Relevant identified uses of the substance or mixture and the uses advised against</p> <p>1.2.1.) Relevant identified uses Main use category: Use of the substance/mixture:</p> <p>1.2.2.) Uses advised against</p> <p>1.3.) Details of the supplier of the safety data sheet Address:</p> <p>1.4.) Emergency telephone number</p>	<p>Mixture Solder Wire F-SW-34 Sn95,5Ag3,8Cu0,7 SAC-3</p> <p>Industrial uses Solder wire</p> <p>No additional information available</p> <p>EDSYN GMBH EUROPA Finkenweg 2 D 97892 Kreuzwertheim</p> <p>Tel. 09342 - 6413 Fax: 09342 – 6417</p>	
<p>2.) <u>HAZARDS IDENTIFICATION</u></p> <p>2.1.) Classification of the substance or mixture</p> <p>Classification according to Regulation (EC) no 1272/2008 (CLP):</p> <p>Classification according to Directive 67/548/EEC or 1999/45/EC:</p> <p>Adverse physicochemical, human health and environment effects:</p> <p>Other information:</p> <p>NFPA code:</p>	<p>Not classified</p> <p>Not classified</p> <p>No additional information available</p> <p>1-1-0</p> 	



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<p>2.2.) Label elements</p> <p>Labelling according to Regulation (EC) No. 1272/2008 [CLP]</p> <p>Precautionary statements (CLP):</p> <p>2.3.) Other hazards</p> <p>Other hazards not contributing to the classification:</p>	<p>P273 – Avoid release to the environment</p> <p>The product is not hazardous as supplied nor is it hazardous when handled under normal conditions. This product may become hazardous in use and the information in this data sheet reflects the hazards associated with solder operations.</p>
<p>3.) <u>COMPOSITION INFORMATION ON INGREDIENTS</u></p> <p>3.1.) Substances</p> <p>3.2.) Mixture</p>	<p>Not applicable</p>

Name	Product identifier	%	Classification according to Directive 67/548/EEC
tin	(CAS-No.) 7440-31-5 (EG-No.) 231-141-8 (REACH-No.) 01-2119486474-28	*)	Not classified
silver	(CAS-No.) 7440-22-4 (EG-No.) 231-131-3 (REACH-No.) 01-2119555669-21	*)	Not classified
copper	(CAS-No.) 7440-50-8 (EG-No.) 231-159-6 (REACH-No.) 01-2119480154-42	*)	Not classified
flux incorporated (Type F-SW-34)	-	1.6% (+/-0.2) 3.0% (+/- 0.2)	Not classified

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copper	(CAS-No.) 7440-50-8 (EG-No.) 231-159-6 (REACH-No.) 01-2119480154-42	*)	Not classified
flux incorporated (Type F-SW-34)	-	1.6% (+/-0.2) 3.0% (+/- 0.2)	Not classified

*) Weight dependent on the respective alloy (see alloy overview)

Alloy	Tin % wt	Silver % wt	Copper % wt
Sn95,5Ag3,8Cu0,7	Rest	3,8 +/-0.2	0,7 +/- 0.2



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<p>4.) <u>FIRST AID MEASURES</u></p> <p>4.1.) Description of the first aid measures</p> <p>First aid measures after inhalation:</p> <p>First aid measures after skin contact:</p> <p>First aid measures after eye contact:</p> <p>First aid measures after ingestion:</p> <p>4.2.) Most important symptoms and effects, both acute and delayed</p> <p>Symptoms / injuries:</p> <p>Symptoms / injuries after skin contact:</p> <p>Symptoms / injuries after eye contact:</p> <p>4.3.) Indication of any immediate medical attention and special treatment needed</p>	<p>Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.</p> <p>Lead-free solder alloys are not likely to have a harmful effect on the skin. Wash hands immediately after handling the product. In case of splash from molten metal, wash affected skin areas with copious amounts of running water. Further treatment of the burn. Soap may be used. Take victim to a doctor if irritation persists.</p> <p>Rinse immediately with plenty of water. Take victim to an ophthalmologist if irritation persists</p> <p>Dilute stomach contents with water or milk. Do NOT induce vomiting. Ask for medical advice.</p> <p>Handle in accordance with good industrial hygiene and safety practice.</p> <p>The melted product adheres to the skin and causes burns.</p> <p>In case of splash from hot solder, irritation to the eyes and if not removed, may result in serious injury. Vapours produced during soldering operations can give slight irritation of the eye tissue.</p> <p>No additional information available.</p>
<p>5.) <u>FIREFIGHTING MEASURES</u></p> <p>5.1.) Extinguishing media</p> <p>Suitable extinguishing media:</p> <p>Unsuitable extinguishing media:</p> <p>5.2.) Special hazards arising from the substance or mixture</p> <p>Fire hazard:</p> <p>Reactivity:</p> <p>5.3.) Advice for firefighters</p> <p>Protection during firefighting:</p> <p>Other information (firefighting):</p>	<p>D powder. Dry sand.</p> <p>No water spray.</p> <p>None</p> <p>Upon burning: formation of metallic fumes/vapours.</p> <p>Heat resistant gloves. Heat/fire exposure: compressed air/oxygen apparatus.</p> <p>Massive metal and the oxides are not combustible.</p>





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<p>6.) <u>ACCIDENTAL RELEASE MEASURES</u></p> <p>6.1.) Personal precautions, protective equipment and emergency procedures</p> <p>General measures:</p> <p>6.1.1.) For non-emergency personnel</p> <p>6.1.2.) For emergency responders</p> <p>6.2.) Environmental measures</p> <p>6.3.) Methods and material for containment and cleaning up</p> <p>Methods for cleaning up:</p> <p>Other information:</p> <p>6.4.) Reference to other sections</p>	<p>Not applicable for solder wire.</p> <p>No additional information available.</p> <p>No additional information available.</p> <p>Prevent spreading in sewers.</p> <p>If melted: allow liquid to solidify before taking it up – Do not discharge into groundwater, surface water or sewerage.</p> <p>Upon burning: formation of metallic fumes/vapours.</p> <p>No additional information available.</p>
<p>7.) <u>HANDLING AND STORAGE</u></p> <p>7.1.) Precautions for safe handling</p> <p>Additional hazards when processed:</p> <p>Precautions for safe handling:</p> <p>Hygiene measures:</p> <p>7.2.) Conditions for safe storage, including any incompatibilities</p> <p>Maximal storage period:</p> <p>Storage temperature:</p> <p>Storage area:</p> <p>7.3.) Specific end use(s)</p> <p><u>REACH Disclaimer:</u></p>	<p>Vapours produced during soldering operations.</p> <p>Avoid breathing fume. Work under local exhaust/ventilation. Wash hands immediately after handling the product.</p> <p>Always wash hands and face immediately after handling this product, and once again before leaving the workplace.</p> <p>2 years</p> <p>Store at ambient temperature.</p> <p>Store in a dry area.</p> <p>This information is based on current knowledge. Consistency of data in the SDS with CSR is considered, as far as the information was available at the time of compilation (cfr Revision date and Version number).</p>



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<p>8.) <u>EXPOSURE CONTROLS / PERSONAL PROTECTION</u></p> <p>8.1.) Control parameters</p> <p><u>tin (7440-31-5)</u></p> <table border="1"> <tr> <td>EU</td> <td>IOELV TWA (mg/m³)</td> <td>2 mg/m³</td> </tr> <tr> <td>Belgium</td> <td>Limit value (mg/m³)</td> <td>2 mg/m³</td> </tr> <tr> <td>Italy-Portugal-USA ACGIH</td> <td>ACGIH TWA (mg/m³)</td> <td>2 mg/m³</td> </tr> </table> <p><u>silver (7440-22-4)</u></p> <table border="1"> <tr> <td>EU</td> <td>IOELV TWA (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>Belgium</td> <td>Limit value (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>France</td> <td>VME (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>Germany</td> <td>TRGS 900 Occupational exposure limit value (mg/m³)</td> <td>0,1 E</td> </tr> <tr> <td>Italy-Portugal-USA ACGIH</td> <td>ACGIH TWA (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>The Netherlands</td> <td>MAC TGG 8H (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>United Kingdom</td> <td>WEL TWA (mg/m³)</td> <td>0,1 mg/m³</td> </tr> </table> <p><u>copper (7440-50-8)</u></p> <table border="1"> <tr> <td>Belgium</td> <td>Limit value (mg/m³)</td> <td>0,2 mg/m³</td> </tr> <tr> <td>France</td> <td>VME (mg/m³)</td> <td>0,2 mg/m³</td> </tr> <tr> <td>Italy-Portugal-USA ACGIH</td> <td>ACGIH TWA (mg/m³)</td> <td>0,2 mg/m³</td> </tr> <tr> <td>The Netherlands</td> <td>MAC TGG 8H (mg/m³)</td> <td>0,1 mg/m³</td> </tr> <tr> <td>United Kingdom</td> <td>WEL TWA (mg/m³)</td> <td>0,2 mg/m³</td> </tr> <tr> <td>United Kingdom</td> <td>WEL STEL (mg/m³)</td> <td>2 mg/m³</td> </tr> </table>	EU	IOELV TWA (mg/m ³)	2 mg/m ³	Belgium	Limit value (mg/m ³)	2 mg/m ³	Italy-Portugal-USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³	EU	IOELV TWA (mg/m ³)	0,1 mg/m ³	Belgium	Limit value (mg/m ³)	0,1 mg/m ³	France	VME (mg/m ³)	0,1 mg/m ³	Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	0,1 E	Italy-Portugal-USA ACGIH	ACGIH TWA (mg/m ³)	0,1 mg/m ³	The Netherlands	MAC TGG 8H (mg/m ³)	0,1 mg/m ³	United Kingdom	WEL TWA (mg/m ³)	0,1 mg/m ³	Belgium	Limit value (mg/m ³)	0,2 mg/m ³	France	VME (mg/m ³)	0,2 mg/m ³	Italy-Portugal-USA ACGIH	ACGIH TWA (mg/m ³)	0,2 mg/m ³	The Netherlands	MAC TGG 8H (mg/m ³)	0,1 mg/m ³	United Kingdom	WEL TWA (mg/m ³)	0,2 mg/m ³	United Kingdom	WEL STEL (mg/m ³)	2 mg/m ³	<p>8.2.) Exposure controls</p> <p>Personal protective equipment: Safety glasses. Gloves. Heat resistant gloves if handling hot metal</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>Hand protection: The selected protective gloves must meet the specifications of the EU Directive 89/686/EEC and EN 374, derived therefrom.</p> <p>Eye protection: Safety glasses.</p> <p>Consumer exposure controls: The need for personal protective equipment should be based on a workplace risk assessment for the particular use.</p>
EU	IOELV TWA (mg/m ³)	2 mg/m ³																																															
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<p>9.) <u>PHYSICAL AND CHEMICAL PROPERTIES</u></p> <p>9.1.) Information on basic physical and chemical properties</p> <p>Physical state: Appearance: Colour: Odour: Odour threshold:</p> <p>pH: Melting point: Freezing point: Boiling point: flash point:</p> <p>Relative evaporation rate (butylacetate=1):</p> <p>Flammability (solid, gas): Explosive limit: Vapour pressure: Relative vapour density at 20 °C: Relative density: Solubility:</p> <p>Log Pow: Log Kow:</p> <p>Self ignition temperature: Decomposition temperature: Viscosity, kinematic: Viscosity, dynamic: Explosive properties: Oxidising properties:</p> <p>9.2.) Other information</p>	<p>Solid Solid wire Silvery - white to grey. Odourless. No data available.</p> <p>No data available. IEC-EN-61190-1-3: Sn95,5Ag3,8Cu0,7: 217 °C - 226 °C No data available. No data available. (Flux) 170 °C</p> <p>No data available.</p> <p>No data available. No data available. No data available. No data available. No data available. No data available. No data available. No data available.</p> <p>No data available. No data available.</p> <p>No data available. No data available. No data available. No data available. No data available. No data available.</p> <p>No additional information available.</p>
<p>10.) <u>STABILITY AND REACTIVITY</u></p> <p>10.1.) Reactivity:</p> <p>10.2.) Chemical stability</p> <p>10.3.) Possibility of hazardous reactions</p> <p>10.4.) Conditions to avoid</p> <p>10.5.) Incompatible materials</p> <p>10.6.) Hazardous decomposition products:</p>	<p>Upon burning: formation of metallic fumes/vapours.</p> <p>Stable under normal conditions.</p> <p>No additional data available.</p> <p>High temperatures. Will emit toxic metallic oxides.</p> <p>No additional data available.</p> <p>Tin, copper and silver compounds</p>



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<p>11.) TOXICOLOGICAL INFORMATION</p> <p>11.1.) Information in toxicological effects</p> <p>Acute toxicity</p> <p>Skin corrosion/irritation:</p> <p>Serious eye damage/irritation:</p> <p>Respiratory or skin sensitisation:</p> <p>Germ cell mutagenicity:</p> <p>Carcinogenicity:</p> <p>Reproductive toxicity:</p> <p>Specific target organ toxicity (single exposure):</p> <p>Specific target organ toxicity (repeated exposure):</p> <p>Aspiration hazard:</p>	<p>Not classified.</p> <p>silver (7440-22-4)</p> <table border="1"> <tr> <td>LD50 Oral rat</td> <td>>1000 mg/kg (rat)</td> </tr> <tr> <td>LD 50 Dermal rat</td> <td>>2000 mg/kg (rat)</td> </tr> </table> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p> <p>Not classified.</p>	LD50 Oral rat	>1000 mg/kg (rat)	LD 50 Dermal rat	>2000 mg/kg (rat)										
LD50 Oral rat	>1000 mg/kg (rat)														
LD 50 Dermal rat	>2000 mg/kg (rat)														
<p>12.) ECOLOGICAL INFORMATION</p> <p>12.1.) Toxicity</p> <p>Ecology - general::</p> <p>Ecology - water:</p> <p>tin (7440-31-5)</p> <table border="1"> <tr> <td>LC50 fishes 1</td> <td>0,42 mg/l (672 h; Salmo gairdneri (Oncorhynchus mykiss);Metal-ion)</td> </tr> <tr> <td>LC50 other aquatic organisms 1</td> <td>10 mg/l (144 h, GAMMARUS SP.)</td> </tr> <tr> <td>EC50 Daphnia 1</td> <td>1,5 mg/l (504 h, DAPHNIA MAGNA)</td> </tr> <tr> <td>EC50 other aquatic organisms 1</td> <td>21,23 mg/l (96 h, TUBIFEX TUBIFEX)</td> </tr> <tr> <td>LC50 fish 2</td> <td>0,42 mg/l (672 St. SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS, METALL-ION)</td> </tr> <tr> <td>LC50 other aquatic organisms 2</td> <td>42 mg/l (48 St. DAPHNIA MAGNA)</td> </tr> <tr> <td>EC50 other aquatic organisms 2</td> <td>140,28 mg/l (48 St. TUBIFEX TUBIFEX, METALL-ION)</td> </tr> </table>	LC50 fishes 1	0,42 mg/l (672 h; Salmo gairdneri (Oncorhynchus mykiss);Metal-ion)	LC50 other aquatic organisms 1	10 mg/l (144 h, GAMMARUS SP.)	EC50 Daphnia 1	1,5 mg/l (504 h, DAPHNIA MAGNA)	EC50 other aquatic organisms 1	21,23 mg/l (96 h, TUBIFEX TUBIFEX)	LC50 fish 2	0,42 mg/l (672 St. SALMO GAIRDNERI/ ONCORHYNCHUS MYKISS, METALL-ION)	LC50 other aquatic organisms 2	42 mg/l (48 St. DAPHNIA MAGNA)	EC50 other aquatic organisms 2	140,28 mg/l (48 St. TUBIFEX TUBIFEX, METALL-ION)	<p>The solder wire is not biodegradable and may therefore not be disposed in the environment.</p> <p>Flux used for solder wire is readily biodegradable.</p>
LC50 fishes 1	0,42 mg/l (672 h; Salmo gairdneri (Oncorhynchus mykiss);Metal-ion)														
LC50 other aquatic organisms 1	10 mg/l (144 h, GAMMARUS SP.)														
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12.2.) Persistence und degradability

tin (7440-31-5)

Persistence and degradability	Biodegradability: not applicable. Absorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

silver (7440-22-4)

Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Absorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

copper (7440-50-8)

Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Absorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3.) Bioaccumulative potential

tin (7440-31-5)

BCF fish 1	< 0,00036 (Pisces; Dry weight)
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silver (7440-22-4)

Bioaccumulative potential	Not bioaccumulative.
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copper (7440-50-8)

Bioaccumulative potential	No bioaccumulation data available.
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12.4.) Mobility in soil

No additional data available.

12.5.) Results of PBT and vPvB assessment

No additional data available.

12.6.) Other adverse effects

No additional data available.

13.) DISPOSAL CONSIDERATIONS

13.1.) Waste treatments methods

Regional legislation (waste)

Disposal must be done according to official regulations.



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<p>Waste disposal recommendations:</p> <p>Ecology – waste materials:</p>	<p>Do not discharge into the sewer. Do not discharge into surface water. Recycle/reuse.</p> <p>Do not discharge into surface water - Do not discharge into the sewer - Recycle/reuse - LWCA (the Netherlands): KGA category 05.</p>
<p>14.) <u>TRANSPORT INFORMATION</u></p>	<p>No dangerous good in sense of transport regulations.</p> <p>Additional rules to be obtained at EDSYN GMBH EUROPA</p> <p>Remark: Above mentioned regulations are in force at the moment of publication of this (SDS) safety data sheet. With reference to possible modifications in transport regulations of dangerous goods, we advise you to verify its validity at EDSYN GMBH EUROPA.</p>
<p>15.) <u>REGULATORY INFORMATION</u></p> <p>15.1.) Safety, health and environmental regulations/legislations specific for the substance or mixture</p> <p>15.1.1.) EU-Regulations</p> <p>EURAL code :</p> <p>15.1.2.) National regulations</p> <p>Storage class (LGK):</p> <p>15.2.) Chemical safety assessment</p>	<p>Contains no REACH candidate substance</p> <p>10 08 11</p> <p>LGK 13 – Non-combustible solids</p> <p>Chemical safety assessment of substance in this preparation were carried out.</p>
<p>16.) <u>OTHER INFORMATION</u></p> <p>Other information:</p> <p>SDS Version:</p> <p>Revision date:</p>	<p>Intrastat code 8311 30 00</p> <p>7.1/ED</p> <p>06.06.2014 / 26.01.2016</p>

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

DISCLAIMER

The information in this Material Safety Data Sheet (SDS) is believed to be correct as of the date issued. Because we cannot anticipate or control the many different conditions under which this information and our products may be used, we do not guarantee the applicability or the accuracy of this information or the suitability of our products in any given situation. Users of our products should make their own tests to determine the suitability of each such product for their particular purposes. The products discussed are sold without such warranty, either expressed or implied.

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