



11.07.2019

**Material Safety Data Sheet - according to directive 1907/2006/EC**

**INTERNATIONAL STANDARD NORM ISO 11014-1**

Trade Name: SACR	Solder wire S-Sn96,5 Ag3 Cu0,5 Flux F-SW26 Typ 1.1.2 B DIN EN 29 453 NF EN 29 454.1																																																
1.) <b>Manufacturer:</b> <b>Address:</b>	EDSYN GMBH EUROPA Finkenweg 2 Tel.: 09342 - 6413 D 97892 Kreuzwertheim Fax: 09342 - 6417																																																
2.) <b>COMPOSITIONS / INFORMATION ON INGREDIENTS.</b>	<table border="1" data-bbox="748 762 1479 898"> <thead> <tr> <th>Product (metal)</th> <th>Symbol</th> <th>CAS-No.</th> <th>EC-No.</th> <th>R-Phrase</th> <th>S-Phrase</th> </tr> </thead> <tbody> <tr> <td>Tin</td> <td>Sn</td> <td>7440-31-5</td> <td>231-141-8</td> <td>-</td> <td>-</td> </tr> <tr> <td>Copper</td> <td>Cu</td> <td>7440-50-8</td> <td>231-159-6</td> <td>-</td> <td>-</td> </tr> <tr> <td>Silver</td> <td>Ag</td> <td>7440-22-4</td> <td>231-131-3</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>Alloys composition Sn96,5Ag3Cu0,5</p> <table border="1" data-bbox="748 974 1463 1056"> <thead> <tr> <th>Tin %</th> <th>Lead %</th> <th>Copper %</th> <th>Silver %</th> <th>Bismuth %</th> <th>Antimony %</th> </tr> </thead> <tbody> <tr> <td>96,5</td> <td>-</td> <td>0,5</td> <td>3</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>Incorporated flux composition</p> <table border="1" data-bbox="748 1134 1463 1310"> <thead> <tr> <th>Product</th> <th>CAS-No.</th> <th>EC-No.</th> <th>R-Phrase</th> <th>S-Phrase</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>Modified rosin</td> <td>8050-09-7</td> <td>-</td> <td colspan="2">Not classified hazardous</td> <td>2,2% (nominal) Other: consult us.</td> </tr> </tbody> </table>	Product (metal)	Symbol	CAS-No.	EC-No.	R-Phrase	S-Phrase	Tin	Sn	7440-31-5	231-141-8	-	-	Copper	Cu	7440-50-8	231-159-6	-	-	Silver	Ag	7440-22-4	231-131-3	-	-	Tin %	Lead %	Copper %	Silver %	Bismuth %	Antimony %	96,5	-	0,5	3	-	-	Product	CAS-No.	EC-No.	R-Phrase	S-Phrase	%	Modified rosin	8050-09-7	-	Not classified hazardous		2,2% (nominal) Other: consult us.
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3.) <b>HAZARDS IDENTIFICATION</b>  <b>Hazard description:</b>  <b>Information concerning particular hazards for human and environment:</b>  <b>Prevention:</b>  <b>GHS label elements:</b>	<p>The product is not classified as dangerous. This alloy contains lead. Industrial use only. Keep children away. Avoid contact with basics, acids and oxidizing chemicals. Hazardous reactions with mineral acids: sulfuric acids, phosphoric, nitric (concentred). No hazardous reaction when normally used.</p> <p>The product could cause burns during soldering. Its use during soldering may produce or release fumes which can be sensitizing to asthmatic workers. This product is stable.</p> <p>It is recommended to wear safety glasses, protective gloves, to wash hands after use and to work with a good ventilation of area, and suitable fumes extraction system locally installed.</p> <p>None</p>																																																



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<p>4.) <b><u>FIRST AID MEASURES</u></b></p> <p><b>General information:</b></p> <p><b>After inhalation:</b></p> <p><b>After skin contact:</b></p> <p><b>After eye contact:</b></p> <p><b>After swallowing:</b></p> <p><b>Ingestion:</b></p>	<p>Take affected persons out into the fresh air. Take affected persons out of danger area and lay down.</p> <p>Take affected persons into fresh air. If irritation persists, get medical attention. Always carry out soldering and melting operations in well ventilated areas to prevent a concentration of fumes higher to the MAC values.</p> <p>Immediately wash with water and soap and rinse thoroughly. If skin irritation persists, get medical attention. If burns should occur from molten metal, treat for burn and get medical assistance if necessary. Burns: cool affected parts under running water. Do not remove adhering material, apply a sterile dressing and seek medical advice. May cause sensitisation by skin contact.</p> <p>Rinse opened eye for several minutes under running water. Get medical attention if irritation occurs. Immediately flood the eye with plenty of water for at least 15 minutes. Obtain medical attention.</p> <p>Call for a doctor immediately. Do not induce vomiting unless directed to do so by medical personnel.</p> <p>Do not give water when unconscious. Keep warm and at rest.</p>
<p>5.) <b><u>FIRE FIGHTING MEASURES</u></b></p> <p><b>Suitable extinguishing agents:</b></p> <p><b>Extinguishing agents to avoid:</b></p> <p><b>Special hazards caused by the substance, its products of combustion or resulting gases:</b></p> <p><b>Protective equipment:</b></p>	<p><b>Non-flammable product</b></p> <p>Dry chemical powder, water spray or foam (CO<sub>2</sub>), Alcohol resistant foam</p> <p>Do not use water jet on fire where molten metal is present.</p> <p>Molten metal produces fumes or vapours that may be sensitizing to asthmatic persons. Molten metal reacts violently with oxidising agents.</p> <p>Wear appropriate self-contained breathing apparatus. Do not inhale combustion gases. Wear full body protective clothing.</p>
<p>6.) <b><u>ACCIDENTAL RELEASE MEASURES</u></b></p> <p><b>Person related safety precautions:</b></p> <p><b>Measures for environmental protection:</b></p> <p><b>Measures for cleaning/collecting:</b></p> <p><b>Additional information:</b></p>	<p>Remove persons from danger area. Wear protective equipment. Keep unprotected persons away. Use respiratory protective device against the effects of fumes/dust. Ensure adequate ventilation. Wear appropriate protective clothing.</p> <p>Do not allow to enter sewers/surface or ground water.</p> <p>After cooling, collect the released product and store it in sealed containers. Wash the contaminated surface with an organic solvent or a detergent. Transfer into suitable containers for recovery or disposal.</p> <p>Exposure levels indicated in section 8 are relevant to these and other operations.</p>



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<p><b>Environmental precaution:</b></p>	<p>See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.</p> <p>Residues should be stored in closed containers. Extract fumes. Try to prevent the material from entering drains or water courses. Disposals should be in accordance with local states.</p>												
<p>7.) <b><u>HANDLING AND STORAGE</u></b></p> <p>7.1) <b><u>HANDLING:</u></b></p> <p><b>Measures for safety handling</b></p> <p><b>Using advices:</b></p> <p>7.2) <b><u>STORAGE:</u></b></p> <p><b>Conditions of storage and protective equipment</b></p> <p><b>Incompatible materials</b></p> <p><b>Recommended packaging</b></p> <p><b>Not advisable:</b></p> <p><b>Classification reference:</b></p>	<p>Due to its high density, the product is heavy. Avoid the fall of the product. Wear protective shoes. S37 = Wear suitable gloves. Wash hands after handling.</p> <p>Ensure efficient local air ventilation or extraction systems at the workplace. Extract fumes during the melting. Avoid breathing metal fumes. Make sure that people work in safety conditions. Do not drink, do not smoke in soldering areas.</p> <p>Hazardous reactions with concentrated sulfuric acid, concentrated phosphoric acid and concentrated nitric acid. Real risks of lead fumes above 500 °C. Lead is harmful if absorbed through the digestive system or skin.</p> <p>On spool, in original cardboard, at room temperature, keep away from inclemency. S2 = Keep out of the reach of children. S13 = Keep away from food, drink and animal feedingsstuffs.</p> <p>Storage area should be at ambient temperature (20 °C-25°C). Avoid sun exposure and heating.</p> <p>Strong oxidizing chemicals.</p> <p>Store in original containers. * plastics PP or PE, recyclable polypropylen spools, recyclable containers.</p> <p>* metallic (as aluminum).</p> <p>Page 13 according to VCI-.</p>												
<p>8.) <b><u>EXPOSURE CONTROLS / PERSONAL PROTECTION</u></b></p> <p>8.1) <b>Exposure control</b></p>	<p>Actual limit value/max. concentration (Germany) of working place:</p> <table border="1" data-bbox="747 1627 1485 1848"> <thead> <tr> <th>Product</th> <th>max. concentration (Germany) of working place</th> <th>Limit value</th> </tr> </thead> <tbody> <tr> <td>Tin</td> <td>0,1 mg/m<sup>3</sup></td> <td>0,2 mg/m<sup>3</sup></td> </tr> <tr> <td>Copper</td> <td>0,2 mg/m<sup>3</sup> (fume) 1 mg/m<sup>3</sup> (dust)</td> <td>2 mg/m<sup>3</sup> (dust)</td> </tr> <tr> <td>Silver</td> <td>0,1 mg/m<sup>3</sup> (metal) 0,01 mg/m<sup>3</sup> (soluble component)</td> <td>-</td> </tr> </tbody> </table>	Product	max. concentration (Germany) of working place	Limit value	Tin	0,1 mg/m <sup>3</sup>	0,2 mg/m <sup>3</sup>	Copper	0,2 mg/m <sup>3</sup> (fume) 1 mg/m <sup>3</sup> (dust)	2 mg/m <sup>3</sup> (dust)	Silver	0,1 mg/m <sup>3</sup> (metal) 0,01 mg/m <sup>3</sup> (soluble component)	-
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<p><b>Additional information:</b></p> <p><b>8.2) Personal protective equipment</b></p> <p><b>General protective and hygienic measures:</b></p> <p><b>Respiratory protection:</b></p> <p><b>Hand protection:</b></p> <p><b>Eye protection:</b></p> <p><b>Body protection:</b></p>	<p>Permissible air concentration (mg/m<sup>3</sup>)</p> <table border="1"> <thead> <tr> <th>Product</th> <th>PEL</th> <th>REL</th> <th>TLV</th> </tr> </thead> <tbody> <tr> <td>Tin</td> <td>2,0</td> <td>2,0</td> <td>2,0</td> </tr> <tr> <td>Copper</td> <td>1 0,1 (fume)</td> <td>1 0,1 (fume)</td> <td>1 0,2 (fume)</td> </tr> <tr> <td>Silver</td> <td>0,01</td> <td>0,01</td> <td>0,1</td> </tr> </tbody> </table> <p>                     PEL = Permissible exposure limit (OSHA)                      REL = Recommended exposure limit (NIOSH)                      TLV = threshold Limit value (ACGIH)                      OSHA = Occupational Safety and Health Administration                      ACGIH = American Conference of Governmental Industrial Hygienists                      NIOSH = National Institute for Occupational Safety and Health                 </p> <p>The usual precautionary measures are to be adhered to when handling chemicals: do not smoke, drink and eat at work place.                      Keep away from foodstuffs, beverages and feed.                      Immediately remove all soiled and contaminated clothing.                      Wash hands before breaks and at the end of work.                      Do not inhale gases / fumes. Avoid contact with the eyes and skin</p> <p>Suitable fumes extraction system must be locally installed.</p> <p>Cotton gloves are recommended.</p> <p>Safety glasses are recommended.</p> <p>Protective work clothing is recommended: cotton blouse.</p>	Product	PEL	REL	TLV	Tin	2,0	2,0	2,0	Copper	1 0,1 (fume)	1 0,1 (fume)	1 0,2 (fume)	Silver	0,01	0,01	0,1
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<p><b>9. <u>PHYSICAL AND CHEMICAL PROPERTIES</u></b></p> <p><b>9.1) Physical properties</b></p> <p><b>Form:</b></p> <p><b>Physical state</b></p> <p><b>Colour:</b></p> <p><b>Application:</b></p> <p><b>Odour:</b></p>	<p><b><u>Binary alloy n° 2 according to NF EN 29453 Standard</u></b></p> <p>wire                      Solid                      silver metal                      For soft soldering                      none</p> <table border="1"> <thead> <tr> <th>Properties</th> <th>T° Solidus (°C)</th> <th>T° Liquidus (°C)</th> <th>Density (g/cm<sup>3</sup>)</th> </tr> </thead> <tbody> <tr> <td>Sn96,5Ag3Cu0,5</td> <td colspan="2">E 217</td> <td>7,4</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Properties of fluxes</th> <th>Acid number (mg/g)</th> <th>Chloride content (%)</th> </tr> </thead> <tbody> <tr> <td>CMA</td> <td>147,6 to 159,4</td> <td>0,493 to 0,567</td> </tr> </tbody> </table>	Properties	T° Solidus (°C)	T° Liquidus (°C)	Density (g/cm <sup>3</sup> )	Sn96,5Ag3Cu0,5	E 217		7,4	Properties of fluxes	Acid number (mg/g)	Chloride content (%)	CMA	147,6 to 159,4	0,493 to 0,567		
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<p><b>10.) <u>STABILITY AND REACTIVITY</u></b></p> <p><b>Stability:</b></p> <p><b>Conditions to avoid:</b></p>	<p>Stable under normal conditions of use and storage.</p> <p>Strong oxidisers may cause violent reaction.</p>																



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<p><b>Hazardous decomposition products:</b></p> <p><b>Materials to avoid:</b></p>	<p>No hazardous decomposition under normal conditions of use.</p> <p>Powerful oxidizing chemicals.</p>
<p><b>11.) <u>TOXICOLOGICAL INFORMATION</u></b></p> <p><b>Eye contact:</b></p> <p><b>Skin contact:</b></p> <p><b>Inhalation:</b></p> <p><b>Acute toxicity:</b></p>	<p>May cause eye irritation due to the fumes during soldering.</p> <p>May cause skin irritation in case of flux projections or fumes during soldering. It is recommended to wear cotton gloves to prevent burns by projections.</p> <p>Use of product during soldering may produce or release fumes due to heated rosin, which can be sensitizing to asthmatic workers.</p> <p>No adverse health effect is expected under normal conditions of use.</p>
<p><b>12.) <u>ECOLOGICAL INFORMATION</u></b></p> <p><b>General notes:</b></p> <p><b>Water pollution:</b></p>	<p>Do not allow product to reach ground water, water course or sewage system. Tin and lead are not biodegradable and cannot be disposed of.</p> <p>Water polluting product: WGK. Do not allow to reach the ground water, rivers and drains of water courses.</p>
<p><b>13.) <u>DISPOSAL CONSIDERATIONS</u></b></p>	<p>Disposal must be made according to official regulations.</p>
<p><b>14.) <u>TRANSPORT INFORMATION</u></b></p> <p><b>DOT regulations:</b></p> <p><b>14.1) Land transport:</b> &gt;&gt;&gt; ADR,RID (cross border)</p> <p><b>14.2) Air transport</b> &gt;&gt;&gt;IATA-DGR</p>	<p>Hazard class: Not regulated. Not hazardous product regarding transport</p> <p>ADR/RID class: Not regulated.</p> <p>IATA Class: Not regulated.</p>
<p><b>15.) <u>REGULATORY INFORMATION</u></b></p>	<p>The product does not require any hazard warning label in accordance with EC directives on dangerous substances.</p>
<p><b>16.) <u>OTHER INFORMATION</u></b></p>	<p>This material safety data sheet is entirely written in accordance with regulations in force.</p> <p>The relevant data sheet is applicable here. The information contained here in is based on data considered accurate and is offered at no charge.</p> <p>Our aim, by providing the above information which reflects the current status of our knowledge and experience is to describe our product in terms of safety requirements. Liability is expressly disclaimed for loss or injury arising out of use of this information or the use of any materials designated. Supplementary copies of this data sheet are available on request.</p>



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<p><b>Abbreviations and acronyms:</b></p>	<p><b>ADR:</b> European Agreement concerning the International Carriage of Dangerous Goods by Road. <b>RID:</b> Regulations Concerning the International Transport of Dangerous Goods by Rail. <b>IMDG:</b> International Maritime Code for Dangerous Goods <b>IATA:</b> International Air Transport Association <b>IATA-DGR:</b> Dangerous Goods Regulations by the "International Air Transport Association" (IATA) <b>ICAO:</b> International Civil Aviation Organization <b>ICAO-TI:</b> Technical Instructions by the "International Civil Aviation Organization" (ICAO) <b>GHS:</b> Globally Harmonized System of Classification and Labeling of Chemicals <b>EINECS:</b> European Inventory of Existing Commercial Chemical Substances <b>CAS:</b> Chemical Abstracts Service (division of the American Chemical Society)</p>
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