



28.03.2013

**Material Safety Data Sheet - according to directive 91/155/EWG**

**INTERNATIONAL STANDARD NORM ISO 11014-1**

<b>Trade Name: SS</b>		<b>Solder wire S-Sn60Pb38Cu2 DIN EN 29 453</b>		<b>Flux F-SW 32 DIN EN 29 454</b>		
1.) <b><u>MANUFACTURER</u></b> Address:		EDSYN GMBH EUROPA Finkenweg 2 D 97892 Kreuzwertheim				Tel.: 09342 - 6413 Fax: 09342 - 6417
2.) <b><u>COMPOSITION / SPECIFICATION OF CONSTITUENTS</u></b>		2.1) <b>Chemical features:</b>  2.2) <b>Compounds:</b>				Alloy composed of tin, copper and lead, Flux: Solidified melt of (stabilized) natural resins containing dissolved halogen-free activators
Content (in %)	Substance	EINECS No.	CAS No.	Symbols	R-sentences	
59,5 – 60,5	tin	231-141-8	7440-31-5	-	-	
1,5 – 2,0	copper	231-159-6	7440-50-8	-	-	
remainder	lead	231-100-4	7439-92-1	T	61, 62, 20/22, 23	
< 3,5	colophony	232-475-7	8050-09-7	Xi	43	
	carboxylic acid	204-673-3	124-04-9	Xi	36	
3.) <b><u>POTENTIAL HAZARDS</u></b>		Preparation, no hazardous in terms of the Toxic Chemicals Ordinance. Harmful to health by inhaling dusts and fumes or by swallowing.				
4.) <b><u>FIRST AID MEASURES</u></b>		4.1) <b>After skin contact:</b> In case of burns immediately cool the burnt area for several minutes with cold running water. In case of serious burns cover the wound with sterile material and contact a doctor. 4.2) <b>After eye contact:</b> Wash the eye with water for several minutes while holding up the lid. Contact a doctor! 4.3) <b>After swallowing:</b> After having swallowed the substance, provoke vomiting by drinking much water. See a doctor for medical treatment! 4.4) <b>After inhalation:</b> After having inhaled dust or fumes take the patient to the fresh air, give artificial respiration, if necessary. See a doctor for medical treatment! Symptoms of poisoning may occur only at a later time. Ventilate the working areas sufficiently during soldering. 4.5) <b>Information for doctors:</b> In case of acute intoxication, give i.v. Na <sub>2</sub> Ca-EDTA or D-Penicillaminin. Or irrigation of the stomach with a 2-3% sodium sulphate solution and charcoal for the absorption of the produced lead sulphate. Do not give any milk or alcohol.				



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<p>5.) <b><u>FIRE-FIGHTING MEASURES</u></b></p> <p>5.1)</p> <p>5.2) <b>Attention!</b></p> <p>5.3) <b>Notes for the fire fighters:</b></p>	<p>Substance itself is not flammable. Use fire fighting measures suited for the environment concerned. Confine source of fire, prevent the fire from spreading to the surround area. Harmful vapours or smoke may form at the source of fire as a result of the action of the heat on lead-containing alloys. As they are inodorous, persons exposed to them may not be aware of the hazard! Wear respiratory equipment which is independent of the surrounding air.</p> <p>Lead produces toxic lead oxides in form of conflagration gases.</p> <p>Extinguish with water, powder type fire extinguisher, carbonic acid, foam or spray water.</p>
<p>6.) <b><u>MEASURES IN CASE OF UNINTENTIONAL RELEASE</u></b></p> <p>6.1) <b>Personal safety precautions:</b></p> <p>6.2) <b>Environmental safety protection:</b></p> <p>6.3) <b>Cleaning / removal measures:</b></p>	<p>Get uninvolved people off the area to windward.</p> <p>Inform users of drinking, service and cooling water.</p> <p>Mechanical capture</p>
<p>7.) <b><u>HANDLING AND STORAGE</u></b></p> <p>7.1) <b>Handling:</b></p> <p>7.2) <b>Protection against fire and explosion:</b></p> <p>7.3) <b>Requirements as to store rooms and receptacles:</b></p> <p>7.4) <b>Storage instructions:</b></p> <p><b>Do not store together with:</b></p>	<p>The workplace has to be ventilated sufficiently. Do not inhale fumes. Observe the respective regulations of the employers' liability insurance association and the labour safety instructions and regulations of industrial hygiene.</p> <p>No special measures necessary.</p> <p>No special requirements.</p> <p>foodstuffs, beverages and animal feed, gases which are compressed, liquefied or dissolved under pressure, self-igniting substances, substances developing inflammable gases when getting in contact with water, incendiary substances of group 1 according to TRGS 515, inflammable solid substances of storage class 4.1 A, flammable materials.</p>
<p>8.) <b><u>LIMITATION OF EXPOSURE, PERSONAL PROTECTIVE OUTFIT AND ORGANIZATIONAL MEASURES</u></b></p> <p>8.1) <b>Constituents with workplace-related limiting values to be monitored:</b></p>	<p>BAT-value: lead concentration 400 µg/l blood, women under 45 years 300 µg/l</p>



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<p><b>8.2) MAK-values of constituents at the workplace:</b></p> <p><b>8.3) General protective and hygienic measures:</b></p> <p><b>8.4) Body protection:</b></p> <p><b>8.5) Organizational measures:</b></p>	<p>Designation of substance: <u>mg/m<sup>3</sup></u></p> <table border="0"> <tr> <td>Lead</td> <td>0,1</td> </tr> <tr> <td>Tin</td> <td>2</td> </tr> </table> <p>Do not inhale dust, smoke, fumes etc., wash hands before breaks. After finishing the work it is recommended to wash the whole body thoroughly.</p> <p>Wear protective clothes and safety glasses; breathing mask, if necessary. (Adequate protection ensured only within specified wearing period!)</p> <p>Instructions on hazards and protective measures on the basis of operating instructions (TRGS 505, 555) with signature required. These instruments must be given prior to employment and then at least once a year. An evacuation and escape plan must be worked out if required due to location, extension and type of use of the working area. Access to the working areas only permissible of employees. Fix respective information signs.</p> <p>Observe restrictions of employment of adolescents pursuant to the Protection of Young Workers Act and of expectant and nursing mothers as well as women in childbearing age pursuant to the Maternity Protection Act!</p>	Lead	0,1	Tin	2																						
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<p><b>9.) <u>PHYSICAL AND CHEMICAL FEATURES</u></b></p> <p><b>Shape:</b></p> <p><b>Colour:</b></p> <p><b>Odour:</b></p> <p><b>Softening point:</b></p> <p><b>Melting point / range:</b></p> <p><b>Boiling point / range:</b></p> <p><b>Flashpoint:</b></p> <p><b>Inflammation temperature:</b></p> <p><b>Decomposition temperature:</b></p> <p><b>Spontaneous inflammability:</b></p> <p><b>Explosion hazard:</b></p> <p><b>Solubility in water:</b></p>	<table border="0"> <thead> <tr> <th><u>Solder</u></th> <th><u>Flux</u></th> </tr> </thead> <tbody> <tr> <td>solid</td> <td>solid</td> </tr> <tr> <td>silvery</td> <td>yellowish to amber</td> </tr> <tr> <td>inodorous</td> <td>slight</td> </tr> <tr> <td>183 – 190 °C</td> <td>75 – 85 °C</td> </tr> <tr> <td>n. a.</td> <td>n. a.</td> </tr> <tr> <td>n. e.</td> <td>n. e.</td> </tr> <tr> <td>n. a.</td> <td>n. a.</td> </tr> <tr> <td>n. e.</td> <td>n. e.</td> </tr> <tr> <td>product is not self-igniting.</td> <td></td> </tr> <tr> <td>product is not potentially explosive.</td> <td></td> </tr> <tr> <td>insoluble</td> <td>insoluble</td> </tr> <tr> <td>n. a. = not applicable</td> <td>n. b. = not estimable</td> </tr> </tbody> </table>	<u>Solder</u>	<u>Flux</u>	solid	solid	silvery	yellowish to amber	inodorous	slight	183 – 190 °C	75 – 85 °C	n. a.	n. a.	n. e.	n. e.	n. a.	n. a.	n. e.	n. e.	product is not self-igniting.		product is not potentially explosive.		insoluble	insoluble	n. a. = not applicable	n. b. = not estimable
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<p><b>10.) <u>STABILITY AND REACTIVITY</u></b></p> <p><b>10.1) Thermal decomposition / conditions to be avoided:</b></p> <p><b>10.2) Hazardous reactions:</b></p>	<p>No decomposition in case of appropriate use. Formation of nitrous gases in contact with nitric acid.</p> <p>Reacts with air and water and produces lead ions. Brisk reactions with oxidizing agents. Soluble in several acids. Lead is largely unstable to lyes; do not bring in contact with potash lye, caustic lye of soda and lime mortar.</p>																										



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<p>11.) <b><u>TOXICOLOGY</u></b></p> <p>11.1) Referring to hazards arising from lead:</p> <p>11.2) Further notes (on experimental toxicology):</p>	<p>TC<sub>L0</sub> (inhalation, person) 0,01 mg/m<sup>3</sup>                  TD<sub>L0</sub> (orally, woman) 450 mg/kg</p> <p>Animal experiments showed mutagenic, reproduction-toxic effects and carcinogen effects.</p>
<p>12.) <b><u>ECOLOGICAL INFORMATION</u></b></p> <p>12.1) General instructions:</p>	<p>Lead and lead compounds are not biologically decomposable. Dangers for drinking water by formation of water-soluble lead salts.                  Lead salts = water hazard class: 3.</p> <p>A number of activators used in this flux are regarded as being slightly hazardous to water = water risk class: 1.</p>
<p>13.) <b><u>INFORMATION AS TO THE DISPOSAL</u></b></p> <p>13.1) Product:</p> <p>13.2) Identification of lead-containing waste (recommendation):</p> <p>13.3) Waste code number:</p> <p>13.4) Unclean packing material:</p>	<p>Do not dispose with household rubbish. Waste should be recycled to the manufacturer.</p> <p>UN-number: 3288                  Designation: toxic inorganic substance, n.a.g. (lead compounds)                  Class: 6.1                  Packaging group: III                  R- / S-sentences: refer to item 15</p> <p>According to EAK catalogue</p> <p>Disposal according to government regulations. Unclean empty containers must be treated as hazardous waste.</p>
<p>14.) <b><u>TRANSPORT REGULATIONS</u></b></p> <p>14.1) Land transport ADR/RID and GGVS/GGVE (transnational/national) ADR/RID-GGVS/E Class:</p> <p>14.2) Sea vessel transport IMDG/GGV See IMDG/GGV See-Class:</p> <p>14.3) Air transport ICAO-TI and IATA-DGR ICAO/IATA-Class:</p> <p>14.4) Transport / further information:</p>	<p>none</p> <p>none</p> <p>none</p> <p>No hazardous good according to the above regulations.</p>
<p>15.) <b><u>REGULATIONS</u></b></p> <p>15.1) Identification according to EC Directives:</p>	<p>This product is not subject to identification requirements according to the Directive 1999/45/EC Annex VII in connection with the Directive 67/548/EEC Annex VI Number 9.3.</p>



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<p><b>15.2) Information according to Directive 67/548/EEC Annex VI Number 9.3:</b></p> <p><b>Identification letter and hazard definition of the product:</b></p> <p><b>R-sentences:</b></p> <p><b>S-sentences:</b></p> <p><b>15.3) Classification according to the Ordinance on Industrial Safety:</b></p> <p><b>15.4) Classification according to the Ordinance on Combustible Fluids:</b></p> <p><b>15.5) Water hazard class:</b></p>	<p>20 / 22 Also harmful to the health by inhaling and swallowing</p> <p>33 Hazard of cumulative effects</p> <p>61 Can cause injury to the embryo/foetus in the womb</p> <p>62 Might impair the reproduction ability</p> <p>45 Contact doctor immediately in case of accident or sickness (show this label if possible)</p> <p>53 Avoid exposition – seek special instructions before use</p> <p>60 This product and its containers have to be disposed of as hazardous waste</p> <p>61 Avoid release to the environment. Seek special instructions/ read the security data sheet.</p> <p>Not applicable</p> <p>Not applicable</p> <p>This product is not hazardous to water</p>
<p><b>16.) <u>FURTHER NOTES</u></b></p>	<p>The information given in this security data sheet reflects the latest knowledge ref. to our product. The security data sheet intends to describe the product with reference to its safety requirements. This does not imply a warranty that our product is of a specific quality in terms of liability or guarantee provisions and therefore, the information is without obligation.</p>