



3. Mai 2012

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

INTERNATIONAL STANDARD NORM ISO 11014-1

Trade Name: CR 11				SMD Solder paste CR 11 DIN EN 29 453		Flux F-SW 32 NF EN 29 454.1.2.3			
1.) <u>MANUFACTURER</u> Address:				EDSYN GMBH EUROPA Finkenweg 2 D 97892 Kreuzwertheim				Tel.: 09342 - 6413 Fax: 09342 - 6417	
2.) <u>HAZARDS IDENTIFICATION</u>				This article does not contain dangerous substances of preparations intended to be released under normal or reasonably foreseeable conditions of use.					
2.1) Classification:				Xi Irritating					
2.2) Information pertaining to special dangers for human and environment: Adverse human health effects and symptoms:				At soldering generated vapours can irritate the eyes and provoke headache, irritate breathing organs or harm them. Inhalation can cause sickness, vomiting, headache or joint and muscular pain. Can slightly irritate skin and eyes. Prolonged contact can provoke a sensitization. Hot melted solder can cause severe burns.					
Adverse environmental effects:				Weakly water hazardous if containing copper.					
Other adverse hazards:				At processing under normal conditions and under surveillance of general hygienic rules no harm is caused by the product.					
3.) <u>COMPOSITION / INFORMATION ON INGREDIENTS</u>									
3.1) Chemical characterization:				Solder pastes are a mixture of metal powder alloy with a flux based on rosin with activators and thixotropic agents.					
3.2) Hazard ingredients:									
Chemical name	EC-No. (EINECS)	Reach-No.	Index-No.	CAS-No.	Content (%)	Classification		Remark	
						Hazard statements	R-phrases		
Sn	231-141-8	n.a.	n.a.	CAS# 7440-31-5	40-63%/weight	n.a.			
Bi	231-177-4	k.a.	k.a.	CAS# 7440-69-9	0-58%/weight	n.a.			
Ag	231-131-3	n.a.	n.a.	CAS# 7440-22-4	0-2%/weight	n.a.			
Plastic and resin mix		n.a.	n.a.		1-3,5%/weight	n.a.			
Terpenes mix		n.a.	n.a.	CAS# 9855-5	6-9%/weight	n.a.			
Thixotropic agents mix		n.a.	n.a.		1,5-3%/weight	n.a.			
3.3) Additional statements:				At processing under normal conditions and under surveillance of general hygienic rules no harm is caused by the product					



<p>4.) <u>FIRST AID MEASURES</u></p> <p>4.1) General information:</p> <p>4.2) In case of inhalation:</p> <p>4.3) In case of skin contact:</p> <p>4.4) In case of eye contact:</p> <p>4.5) In case of ingestion:</p>	<p>No special information.</p> <p>In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. In case of respiratory tract irritation, consult a physician.</p> <p>After contact with skin, wash immediately with soap and plenty of water. In case of skin irritation, consult a physician.</p> <p>In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart.</p> <p>Rinse mouth immediately and drink plenty of water.</p>
<p>5.) <u>FIRE-FIGHTING MEASURES</u></p> <p>5.1) Suitable extinguishing media:</p> <p>5.2) Extinguishing media which must not be used for safety reasons:</p> <p>5.3) Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:</p> <p>5.4) Special protective equipment for fire-fighters:</p> <p>5.5) Additional information:</p>	<p>Foam, extinguishing powder, CO₂</p> <p>Water</p> <p>In case of fire may be liberated: Carbon monoxide, Carbon dioxide or other hazardous fumes. At soldering with open flame the flux can inflame and burn. At very high temperatures metal fumes can be set free.</p> <p>In case of fire: Wear self-contained breathing apparatus.</p> <p>Do not inhale explosion and combustion gases. Co-ordinate fire-fighting measures to the fire surroundings.</p>
<p>6.) <u>ACCIDENTAL RELEASE MEASURES</u></p> <p>6.1) Personal precautions:</p> <p>6.2) Environmental precautions:</p> <p>6.3) Methods for cleaning up:</p> <p>6.4) Additional information:</p>	<p>Wear personal protection equipment. Provide adequate ventilation.</p> <p>Do not allow to enter drains / surface water / ground-water.</p> <p>Take up mechanically, placing in appropriate containers for disposal.</p> <p>No special information.</p>
<p>7.) <u>HANDLING AND STORAGE</u></p> <p>7.1) Handling: Advices on safe handling: Protective measures:</p> <p>Technical measures:</p> <p>Specific requirements or handling rules:</p> <p>Precautions against fire and explosion:</p>	<p>Avoid inhalation, skin and eye contact.</p> <p>Do not let the product leak into canalization, waters or ground.</p> <p>Always close containers tightly after the removal of product.</p> <p>Usual measures for fire prevention. Product can burn at use of flame soldering.</p>



3. Mai 2012

<p>7.2) Storage: Technical measures and storage conditions:</p> <p>Packaging materials:</p> <p>Requirements for storage rooms and vessels:</p> <p>Hints on storage assembly:</p>	<p>No special protection measures are necessary.</p> <p>Cans, cartridges</p> <p>Store in original container in a cool, well-ventilated place.</p> <p>Keep away from food, drink and animal feeding stuffs.</p>																				
<p>8.) <u>EXPOSURE CONTROLS / PERSONAL PROTECTION</u></p> <p>8.1) Additional information on plant design:</p> <p>8.2) Exposure controls: Components with occupational exposure limits resp. biological occupational exposure limits requiring monitoring:</p>	<p>Generally a sufficient ventilation is to be foreseen at soldering.</p>																				
<table border="1"> <thead> <tr> <th data-bbox="235 1018 414 1092">Ingredient</th> <th data-bbox="414 1018 576 1092">CAS#</th> <th data-bbox="576 1018 738 1092">Approximate Percent by weight</th> <th data-bbox="738 1018 1096 1092">Occupational exposure limits (OELs)</th> <th data-bbox="1096 1018 1500 1092">LD50/LC50 Species and Route</th> </tr> </thead> <tbody> <tr> <td data-bbox="235 1092 414 1165">Tin</td> <td data-bbox="414 1092 576 1165">7440-31-5</td> <td data-bbox="576 1092 738 1165">40-63</td> <td data-bbox="738 1092 1096 1165">OSHA PEL 2 mg/m³ ACGIH TLV 2 mg/m³ NIOSH REL 2 mg/m³</td> <td data-bbox="1096 1092 1500 1165">no data</td> </tr> <tr> <td data-bbox="235 1165 414 1249">Silver</td> <td data-bbox="414 1165 576 1249">7440-22-4</td> <td data-bbox="576 1165 738 1249">0-2</td> <td data-bbox="738 1165 1096 1249">OSHA PEL 0,01 mg/m³ ACGIH TLV 0,1 mg/m³ NIOSH REL 0,01 mg/m³</td> <td data-bbox="1096 1165 1500 1249">LD50 Mouse-oral > 10,000 mg/kg</td> </tr> <tr> <td data-bbox="235 1249 414 1354">Bismuth</td> <td data-bbox="414 1249 576 1354">7440-69-9</td> <td data-bbox="576 1249 738 1354">0-58</td> <td data-bbox="738 1249 1096 1354">OSHA PEL not established ACGIH TLV not established NIOSH REL not established</td> <td data-bbox="1096 1249 1500 1354">Rat oral LD50 > 5,000 mg/kg Mouse oral LD50 > 10,000 mg/kg</td> </tr> </tbody> </table>	Ingredient	CAS#	Approximate Percent by weight	Occupational exposure limits (OELs)	LD50/LC50 Species and Route	Tin	7440-31-5	40-63	OSHA PEL 2 mg/m ³ ACGIH TLV 2 mg/m ³ NIOSH REL 2 mg/m ³	no data	Silver	7440-22-4	0-2	OSHA PEL 0,01 mg/m ³ ACGIH TLV 0,1 mg/m ³ NIOSH REL 0,01 mg/m ³	LD50 Mouse-oral > 10,000 mg/kg	Bismuth	7440-69-9	0-58	OSHA PEL not established ACGIH TLV not established NIOSH REL not established	Rat oral LD50 > 5,000 mg/kg Mouse oral LD50 > 10,000 mg/kg	
Ingredient	CAS#	Approximate Percent by weight	Occupational exposure limits (OELs)	LD50/LC50 Species and Route																	
Tin	7440-31-5	40-63	OSHA PEL 2 mg/m ³ ACGIH TLV 2 mg/m ³ NIOSH REL 2 mg/m ³	no data																	
Silver	7440-22-4	0-2	OSHA PEL 0,01 mg/m ³ ACGIH TLV 0,1 mg/m ³ NIOSH REL 0,01 mg/m ³	LD50 Mouse-oral > 10,000 mg/kg																	
Bismuth	7440-69-9	0-58	OSHA PEL not established ACGIH TLV not established NIOSH REL not established	Rat oral LD50 > 5,000 mg/kg Mouse oral LD50 > 10,000 mg/kg																	
<p>8.2.1) Occupational exposure controls: Personal protection equipment: Respiratory protection:</p> <p>Hand protection:</p> <p>Eye protection:</p> <p>Body protection:</p> <p>8.2.2) Environmental exposure controls:</p> <p>8.2.3) Final user exposure controls by substances released from articles:</p>	<p>No personal respiratory protective equipment normally required.</p> <p>Tested gloves must be worn: Suitable gloves type: One-time gloves, PE (polyethylene), NR (natural rubber, natural latex), NBR (nitrile rubber) Breakthrough times and swelling properties of the material must be taken into consideration. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.</p> <p>Eye glasses</p> <p>Not required.</p> <p>See section 7. No additional measures necessary.</p> <p>Not defined</p>																				



3. Mai 2012

<p>9.) <u>PHYSICAL AND CHEMICAL PROPERTIES</u></p> <p>Form: Colour: Odour: Melting point / range: Boiling temperature: Flaming point: Flammability: Explosion danger: Vapour pressure: Density: Water solubility: pH value: Viscosity: Solvent separation test: Solvent content:</p>	<p>pasty metallic grey specific, very weak Rosin > 80° C, Metal > 138° C n.a n.a flammable with flame n.a n.a > 3 n.a n.a (Flux 4-6) 400 – 1000 Pa n.a 4-6% / weight</p>
<p>10.) <u>STABILITY AND REACTIVITY</u></p> <p>10.1) Conditions to avoid: 10.2) Materials to avoid: 10.3) Hazardous decomposition products:</p>	<p>n.a The product is stable under normal conditions. Thermal decomposition can lead to the escape of irritating gases and vapours. The following decomposition products result from melting: Carbon dioxides, carbon monoxides, gas / vapours, toxic.</p>
<p>11.) <u>TOXICOLOGICAL INFORMATION</u></p> <p>11.1) Practical experience:</p>	<p>In seldom cases the product can cause temporary redness of the skin. Metallic tin and silver are generally considered as not toxic. Weakly water hazardous through copper.</p>
<p>12. <u>ECOLOGICAL INFORMATION</u></p>	<p>The organic part of the product is biodegradable.</p>
<p>13.) <u>DISPOSAL CONSIDERATIONS</u></p> <p>13.1) Appropriate disposal / product: 13.2) List of proposed waste codes / waste designations in accordance with AVV:</p>	<p>Dispose of waste according to applicable local, state and federal regulations.</p> <p><u>Waste codes product:</u> 12 01 04 Disposal of solder products</p> <p><u>Waste codes packing:</u> 12 01 04 Packaging</p>
<p>14.) <u>TRANSPORT INFORMATION</u></p>	<p>No dangerous good in sense of the transport regulations of RID, ADR, ADN, IMDG, IATA-DGR.</p>



3. Mai 2012

<p>15.) <u>REGULATORY INFORMATION</u></p> <p>15.1) EU-Regulations: Chemical Safety Assessment:</p> <p>Labelling:</p> <p>Hazard symbols and hazard statements of dangerous substances and preparations:</p> <p>Hazard components for labelling:</p> <p>R-phrases:</p> <p>S-phrases:</p> <p>15.2) National regulations: Restrictions of occupation:</p> <p>Water hazard class (WGK):</p> <p>Other regulations, restrictions and prohibition regulations:</p>	<p>For this substance a chemical safety assessment is not required.</p> <p>Xi - Irritant</p> <p>R 36/38 Irritating to eyes and skin. R 42/43 May cause sensitization by inhalation and skin contact.</p> <p>S 24/25 Avoid contact with skin and eyes. S 36/37 Wear suitable protective clothing and gloves. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible).</p> <p>Restrictions according to § 5 MuSchRiV are to be applied and concerned.</p> <p>Weakly water-endangering (WGK 1).</p> <p>Observe in addition any national regulations!</p>
<p>16.) <u>OTHER INFORMATION</u></p> <p>16.1) Relevant R-phrases (Number and full text):</p> <p>16.2) Training instructions:</p> <p>16.3) Recommended restrictions on use:</p>	<p>Recommended restrictions on use:</p> <p>Make sure that employees are aware of the hazard risk and are trained in the usage of the product.</p> <p>For industrial purposes only. The product must only be handled for soldering and by people who where informed sufficiently about the nature of the product and about the necessary safety precautions.</p> <p>The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.</p>