

MATERIAL SAFETY DATA SHEET FOR BOSS LEAD FREE SOLDER WIRE



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product type:	Solder Wire containing Tin/Copper
Intended use:	Soldering
Trade Name:	BOSS Lead Free Solder Wire
Supplier of product:	The BSS Group plc
Registered Office:	Fleet House, Lee Circle, Leicester, LE1 3QQ
Telephone/Fax Numbers:	0116 262 3232 / 0116 253 1343
E-mail Address	reception@bssgroup.com
Web site Address	www.bss-group.co.uk

2. HAZARD IDENTIFICATION

The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments	
Classification:	Not classified
Skin Contact:	Non-irritant to skin
Toxicity Data:	Not available
Additional Warning	Safety data sheet available for professional user on request
Phrases:	
See section 11 for more detailed information on health effects and symptoms	

3. COMPOSITION/INFORMATION ON INGREDIENTS.

Substance/Preparation:	Preparation			
Ingredient Name	CAS No	%	EC No	Classification
Europe				
Tin	7440-31-5	80-100	231-141-8	Not classified
Copper	7440-50-8	0.5-1	231-159-6	Not classified
See section 16 for the full text of the R-phrases declared above				
* Occupational Exposure Limit(s), if available, are listed in Section 8				
* The classification listed, indicate the potential hazards of the ingredients				

4. FIRST AID MEASURES

Skin Contact:	Flush contaminated skin with plenty of water. Cuts should be treated promptly and covered
Eye Contact:	Get medical attention if any damage to the eye is caused by the metal
Protection of First-Aiders	No action shall be taken involving any personal risk or without suitable training
Notes to Physician:	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
See section 11 for more detailed information on health effects and symptoms	

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5. FIRE FIGHTING MEASURES

Extinguishing Media	
Suitable:	Use an extinguishing agent suitable for surrounding fire
Not Suitable:	None known
Special Exposure Hazards:	No specific fire or explosion hazard Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous combustion:	Decomposition products may include the following materials: Metal oxide/Oxides
Special Protective Equipment for Fire-Fighting:	No special protection is required

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	No action shall be taken involving any personal risk or without suitable training Evacuate surrounding areas Keep unnecessary and unprotected personnel from entering
Environmental Precautions:	No specific hazard
Large Spill:	Restack safely. Take care with items that are sharp or heavy
Small Spill:	Restack safely. Take care with items that are sharp or heavy

7. HANDLING AND STORAGE:

Handling:	Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Take care with items that are sharp or heavy
Storage:	Store in accordance with local regulations
Packaging Material	
Recommended:	Use original container

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Values		
Europe:	Tin	ACCGIH TLV (United States, 1/2006) TWA: 2 mg/m ³ 8hour(s)
	Copper	ACGIH TLV (Unites Stated, 1/2006). Notes: as Cu TWA: 1mg/m ³ (as Cu) 8 hour(s) ACGIH TLV (United States, 1/2006) TWA: 0.2 mg/m ³ 8 hour(s). Form: Fume
Sweden:	Copper	AFS (Sweden, 2000) NGV: 0.2mg/m ³ 8 hour(s). Form: Fume TWA: 0.2 mg/m ³ 8 hour(s). Form: respirable dust TWA: 1 mg/m ³ 8 hour(s). Form: total dust

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Denmark:	Copper	<p>Arbejdstilsynet (Denmark, 2/3005). Notes Calculated as Cu TWA: 0.1 mg/m³, (calculated as Cu) 8 hour(s). Form: Fume</p> <p>Arbejdstilsynet (Denmark 4.2005) TWA: 1 mg/m 8 hour(s). Form: Powder and dust</p>
Norway:	Copper	<p>Arbejdstilsynet (Norway 10/2003) TWA: 1 mg/m³ 8 hour(s). Form: Dust</p> <p>TWA: 0.1mg/m³ 8 hour(s). Form: Fume</p>
France:	Copper	<p>INRS (France, 6/2006). Notes: As Cu Indicative exposure limits STEL: 2 mg/m³, (as Cu) 15 minute(s). Form: Dust</p> <p>TWA: 1 mg/m³, (as Cu) 8 hour(s). Form: Dust</p> <p>INRS (France, 6/2006). Notes: Indicative exposure limits TWA: 0.2mg/m³ 8hour(s). Form: Fume</p>
Netherlands:	Copper	<p>Nationale MAC-lijst (Netherlands, 7/2006). Notes: Administrative OEL, 8-h TWA: 0.1 mg/m³ 8 hour(s). Form: Inhalable fraction</p>
Germany:	Copper	<p>MAK-Werte Liste (Germany, 7/2006) PEAK: 0.2 mg/m³, 4 times per shift, 15 minute(s). Form: Aerosol/measured as the inhalable fraction</p> <p>TWA: 0.1 mg/m³ 8 hour(s). Form: Aerosol/measures as the inhalable fraction</p>
Finland:	Tin	<p>Työterveyslaitos (Finland, 2002) TWA: 2 mg/m³ 8 hour(s)</p> <p>Työterveyslaitos, Sosiaali-ja terveystministeriö (Finland, 4/2005) Noted: calculated as Sn TWA: 2mg/m³, (calculated as Sn) 8 hour(s)</p>
	Copper	<p>Työterveyslaitos (Finland, 2002) TWA: 1 mg/m³ 8 hour(s)</p> <p>Työterveyslaitos, Sosiaali-ja terveystministeriö (Finland, 4/2005) Noted: calculated as Cu STEL: 0.1 ppm, (Calculated as Cu) 15 minutes(s). Form: Dust, respirable fraction</p> <p>STEL: 0.1 ppm, (Calculated as Cu) 15 minute(s). Form: vapour, respirable fraction</p>
United Kingdom (UK)	Tin	<p>EH40-OES (United Kingdom (UK), 2002), TWA: 2mg/m³ 8 hour(s) STEL: 4 mg/m³ 15 minute(s)</p>
	Copper	<p>EH40-WEL (United Kingdom (UK), 9.2006). Notes: As CU WEL 15 min limit: 2 mg/m³, (As Cu) 15 minute(s). Form: Dusts and Mists</p> <p>WEL 8 hrs limit: 1 mg/m³, (as Cu) 8 hour(s). Form: Dusts and Mists</p> <p>WEL 8hrs limit: 0.2 mg/m³, (as Cu) 9 hour(s). Form: Fume</p>

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Austria	<p>Tin GVK-MAK (Austria, 6/2006) STEL: 4 mg/m³, 4 times per shift, 15 minute(s) Form: Inhalable fraction TWA: 2 mg/m³ 8 hour(s). Form: Inhalable fraction</p> <p>Copper GVK_MAK (Austria, 6/2006) STEL: 4 mg/m³, 4 times per shift, 15 minute(s) Form: Inhalable fraction STEL: 0.4mg/m³, 4 times per shift, 15 minute(s) Form: respirable fume TWA: 1 mg/m³ 8 hour(s) Form: Inhalable fraction TWA: 0.1 mg/m³ 8 hour(s) Form: respirable fume</p>
Switzerland	<p>Copper SUVA (Switzerland, 2/2005). Notes: not temporary STEL: 0.2mg/m³ 15 minute(s). Form: inhalable dust TWA: 0.1 mg/m³ 8 hour(s) Form: inhalable dust</p>
Belgium	<p>Tin Lijst Grenswaarden/Valeurs Limited (Belgium, 3/2006). Skin TWA: 2 mg/m³ 8 hour(s)</p> <p>Copper Lijst Grenswaarden/Valeurs Limited (Belgium, 3/2006), Notes: As Cu TWA: 1 mg/m³ (as Cu) 8 hour(s). Form: dusts and mists TWA: 0.2 mg/m³, (as Cu) 8 hour(s). Form: Fume</p>
Spain	<p>Tin INSHT (Spain, 1/2006) TWA: 2 mg/m³ 8 hour(s)</p> <p>Copper INSHT (Spain, 1/2006). Notes: As Cu TWA 1 mg/m³ (As Cu) 8 hour(s) Form: Dusts and mists INSHT (Spain, 1/2006) TWA: 0.2mg/m³ 8 hour(s)</p>
Turkey	<p>Tin NIOSH REL (United States, 6/2001). Notes: Note the REL and PEL also apply to other inorganic tin compounds (as Sn) Except tin oxides TWA: 2 mg/m³ 10 hour(s). Form: All forms</p> <p>Copper NIOSH REL (United States, 6/2001). Notes: Note the REL and PEL also apply to other copper compounds (as Cu) except Copper fumes. TWA: 1mg/m³ 10 hour(s) Form: Dusts and Mists</p>
Czech Republic	<p>Copper 178/2001 (Czech Republic, 6/2004). STEL: 2 mg/m³ 10 minute(s). Form: Dust STEL: 0.2 mg/m³ 10 minute(s). Form: Fume TWA: 1 mg/m³ 8 hour(s). Form: Dust TWA: 0.1 mg/m³ 8 hour(s). Form: Fume</p>

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Ireland	Copper	NAOSH (Ireland, 3/2002). Notes: As Cu. OELV-15min: 2 mg/m ³ , (As Cu.) 15 minute(s). Form: Dusts and Mists OELV-8hr: 1 mg/m ³ , (As Cu.) 8 hour(s). Form: Dusts and Mists OELV-8hr: 0.2 mg/m ³ , (As Cu.) 8 hour(s). Form: Fume
Italy	No exposure limit value known.	
Estonia	Copper	Sotsiaalminister (Estonia, 9/2001). TWA: 0.2 MG/M3 8 hour(s). Form: inhalable dust TWA: 1 MG/M3 8 hour(s). Form: total dust
Lithuania	Copper	Del Lietuvos Higienos Normos (Lithuania, 12/2001). Notes: As Cu TWA: 1 MG/M3, (As Cu) 8 hour(s). Form: Inhalable fraction TWA: 0.2 MG/M3, (As Cu) 8 hour(s). Form: Respirable fraction
Slovakia	Copper	Nariadenie Vlády Slovenskej republiky (Slovakia, 5/2006). CEIL: 2 mg/m ³ Form: dust CEIL: 0.2 mg/m ³ Form: respirable smoke TWA: 1 mg/m ³ 8 hour(s). Form: dust TWA: 0.1 mg/m ³ 8 hour(s). Form: respirable smoke
Hungary	Copper	EüM-SzCsM (Hungary, 11/2002). PEAK: 0.4 mg/m ³ 15 minute(s). Form: Dust TWA: 0.1 mg/m ³ 8 hour(s). Form: Dust
Poland	Tin	Ministra Pracy I Polityki Społecznej (Poland, 10/2005). Notes: Calculated as Sn TWA: 2 mg/m ³ , (Calculated as Sn) 8 hour(s). Form: smokes and dusts
	Copper	Ministra Pracy I Polityki Społecznej (Poland, 10/2005). Notes: Calculated as Cu STEL: 0.3 mg/m ³ , (Calculated as Cu) 15 minute(s). TWA: 0.1 mg/m ³ , (Calculated as Cu) 8 hour(s).
Slovenia	Copper	Uradni list Republike Slovenije (Slovenia, 4/2005). PEAK: 4 MG/M3, 4 times per shift, 15 minute(s). Form: Inhalable fraction PEAK: 0.4 MG/M3, 4 times per shift, 15 minute(s). Form: respirable fume TWA: 1 MG/M3 8 hour(s). Form: Inhalable fraction TWA: 0.1 MG/M3 8 hour(s). Form: respirable fume

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Latvia	Copper	LV Nat. Standardisation and Meterological Centre (Latvia, 11/2004). STEL: 1 MG/M3 15 minute(s). TWA: 0.5 MG/M3 8 hour(s).
Greece	Tin	PD 90/1999 (Greece, 2/2003). TWA: 2 MG/M3 8 hour(s).
	Copper	PD 90/1999 (Greece, 2/2003). STEL: 2 MG/M3 15 minute(s). Form: Dust TWA: 1 MG/M3 8 hour(s). Form: Dust TWA: 0.2 MG/M3 8 hour(s). Form: Fume
Portugal	Tin	Instituto Português da Qualidade (Portugal, 7/2004). TWA: 2 MG/M3 8 hour(s).
	Copper	Instituto Português da Qualidade (Portugal, 7/2004). Notes: Expressed as Cu TWA: 1 MG/M3, (Expressed as Cu) 8 hour(s). Form: Dusts and Mists TWA: 0.2 MG/M3, (Expressed as Cu) 8 hour(s). Form: Fume
Exposure Controls		
Occupational exposure controls:	No special ventilation requirements	
Hygiene Measures:	Wash thoroughly after handling	
Respiratory Protection:	Not applicable. Recommended: None assigned	
Hand Protection:	Use strong, cut-resistant gloves suitable for handling metals. <1 hours (breakthrough time): disposable Vinyl	
Eye Protection:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: safety glasses with side-shields EN 166 1F	
Skin Protection:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: overalls	

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information	
Appearance	
Physical state	Solid
Colour:	Silvery
Important health, safety and environmental information	
Melting Point:	228 to 250°C (442.4 to 482°F)
Solubility:	Insoluble in the following materials: cold water and hot water

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10. STABILITY AND REACTIVITY

Stability:	This product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur
Conditions to Avoid:	No specific data
Materials to Avoid:	No specific data
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced

11. TOXICOLOGICAL INFORMATION

Potential Acute Health Effects	
Skin Contact:	No known significant effects or critical hazards
Acute Toxicity	
Over-Exposure signs/symptoms	
Target Organs:	Contains material which causes damage to the following organs: kidneys, liver, upper respiratory tract, skin, eyes, lens or cornea

12. ECOLOGICAL INFORMATION

Aquatic Ecotoxicity				
Product/Ingredient Name	Test	Result	Species	Exposure
Copper	Intoxication	Acute EC50	Daphnia	48 hours
		0.055 mg/L		
	Intoxication	Acute EC50	Daphnia	48 hours
		0.036 mg/L		
	Intoxication	Acute EC50	Daphnia	48 hours
		0.0318 mg/L		
	Mortality	Acute LC50	Fish	96 hours
		0.0278 mg/L		
	Mortality	Acute LC50	Fish	96 hours
0.0103 mg/L				
	Mortality	Acute LC50	Fish	96 hours
		0.0094 mg/L		
Biodegradability				
Other adverse effects:	No known significant effects or critical hazards			
AOX:	The product does not contain organically bound halogens which would lead to an AOX value in waste water			

13. DISPOSAL CONSIDERATIONS

Methods of disposal:	The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
European Waste Catalogue (EWC):	10 08 11 dross and skimmings other than those mentioned in 10 08 10
Hazardous Waste:	Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC

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14. TRANSPORT INFORMATION

International transport Regulations						
Regulatory Information	UN No	Proper Shipping Name	Classes	PG*	Label	Additional Information
ADR/RID Class	Not Regulated	-	-	-	-	-
IMDG Class	Not Regulated	-	-	-	-	-
IATA Class	Not Regulated	-	-	-	-	-
PG* - Packing Group						

15. REGULATORY INFORMATION

EU Regulations	
Classification and labelling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.	
Risk Phrases:	This product is not classified according to EU legislation
Product use:	Industrial applications
Other EU Regulations	
Additional Warning Phrases:	Safety data sheet available for professional user on request
Germany	
Hazard class for Water:	mwg Appendix No. 4
Technical instructions on air quality control:	TA-Luft Number 5.2.1: 100%
Italy	
Emission Control Directive:	Not classified

16. OTHER INFORMATION

<p>Full text of R-phrases referred to in Sections 2 and 3 – Europe: None assigned</p> <p>Full text of classifications referred to in Sections 2 and 3 – Europe: None assigned</p> <p>The Health and Safety At Work Act 1974, section 6 Control of Substances Hazardous to Health (CoSHH) Regulations 2002 and its amendments</p> <p>Preparation contains solely TSCA and EINECS listed substances</p> <p>This safety data sheet has been prepared in accordance with the requirements of the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 which implement EC Directives 1999/45/EC and 2001/58/EC and their amendments</p>
<p><u>DISCLAIMER</u></p> <p>This information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.</p>