

(Revision Date: 4-Jan-2012)<sup>1</sup>  
(修订日期: 4-Jan-2012)<sup>2</sup>

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**1 Identification of the substance/preparation and of the company/undertaking**  
物质/制剂鉴定以及公司/承诺

**1.1 Identification of the substance or preparation**  
物质/制剂鉴定

Bonding Wire for electronic applications, specifically product types DHF, iCu, MaxSoft, MaxSoftLD & RelCu.

使用在的电子应用中的铜焊线, 特别是DHF, iCu, MaxSoft, MaxSoftLD和RelCu产品。

**1.2 Use of substance/preparation**  
物质用途/准备

Bonding process in the electronics  
电子制造中的焊接工艺

**1.3 Company/undertaking identification**  
公司/事业鉴定

Heraeus Materials Singapore Pte Ltd  
Block 5002 Ang Mo Kio Avenue 5 #04-05 TECHplace II Singapore 569871

Tel: (65) 6571 7888 Fax: (65) 6571 7778  
电话: (65) 6571 7888 传真: (65) 6571 7778

**1.4 Emergency telephone**  
紧急电话

(65) 6571 7888

**2 Hazards identification**  
危害识别

The product does not require a hazard warning label.  
本产品不需要危险警告标签。

**3 Composition/information on ingredients**  
成分信息

Description 说明	CAS No. CAS序号	EINECS No. EINECS序号	Content 含量
Copper 铜	7440-50-8	231-159-6	98.7 - 100%

**4 First aid measures**  
急救措施

**4.1 Ingestion: Copper ingestion causes nausea, vomiting, abdominal pain, metallic taste and diarrhoea.**

<sup>1</sup> This SDS is valid for 5 years from date of release.

<sup>2</sup> 本安全数据表的有效期为5年。

Ingestion of large doses may cause stomach and intestine ulceration, jaundice, and kidney and liver damage.

食入铜将导致恶心、呕吐、腹痛、腹泻，味觉感到有金属性。摄入大剂量可导致胃和肠道溃疡，黄疸，以及肾脏和肝脏的损害。

4.2 Inhalation 吸入	Not applicable 不适用
4.3 Skin contact: Causes irritation to skin. Symptoms include redness, itching, and pain. Exposure to copper dust may cause a greenish-black discoloration. 皮肤:接触可能导致皮肤不适，症状有：发红、发痒、疼痛。接触到铜粉末可能会产生墨绿色斑点。	
4.4 Eye contact: Small copper particles in the eye may cause irritation, discoloration, and damage. 眼睛接触:微小铜颗粒不慎入眼可能造成眼睛不适，有斑点甚至影响视力。	
4.5 Physician indication 医生指导	Not applicable 不适用
5 Fire-fighting measures 消防措施	
5.1 Suitable extinguishing media 可用灭火介质	Not applicable 不适用
5.2 Unsuitable extinguishing media 禁用灭火介质	Not applicable 不适用
5.3 Hazardous decomposition products 危险分解物	Not applicable 不适用
5.4 Special protective equipment for fire fighters 消防人员的特殊保护设施	Not applicable 不适用
6 Accidental release measures 紧急疏散措施	
6.1 Personal precautions 人员防范	Not applicable 不适用
6.2 Environmental precautions 环境防范	Not applicable 不适用
6.3 Methods for cleaning up 清理方式	Not applicable 不适用
7 Handling and storage 操作与储藏	
7.1 Handling 操作	No safety or environmental hazard 无境危害环
7.2 Storage 存储	No safety or environmental hazard 无境危害环
7.3 Specific use 特殊用途	No safety or environmental hazard 无境危害环

## 8 Exposure controls/personal protection 暴露控制/个人防护

8.1 Exposure limit values  
暴露限制 Not applicable  
不适用

8.2 Exposure controls measures  
曝光控制措施 Not applicable  
不适用

8.3 Environmental exposure controls measures  
环境暴露管制措施 Not applicable  
不适用

## 9 Physical and chemical properties 物理与化学性质

### 9.1 General information 概述

Appearance  
物理形态 Solid  
固体

Colour  
颜色 Reddish brown  
铜色

Odour  
气味 Odourless  
无味

### 9.2 Important health, safety and environmental information 重要健康、安全与环境信息

pH  
pH值 Not applicable  
不适用

Flash point  
闪点 Not applicable  
不适用

Flammability  
可燃性 Not flammable  
不易燃

Explosive properties  
爆炸性能 No data  
没有数据

Oxidising properties  
氧化性能 No oxidising properties  
无氧化性能

Vapour pressure  
气化压力 Not applicable  
不适用

Relative density  
相对密度 8.94 g/cm<sup>3</sup> (DHF, iCu, MaxSoft and  
MaxSoftLD) or 8.98 g/cm<sup>3</sup> (Re1Cu)  
8.94 g/cm<sup>3</sup> (DHF, iCu, MaxSoft and  
MaxSoftLD) or 8.98 g/cm<sup>3</sup> (Re1Cu)

Water solubility  
水溶性 Insoluble in water  
不溶于水

Viscosity  
粘性 Not applicable  
不适用

## 9.3 Other information

其他信息

Melting point	1083°C (DHF, iCu, MaxSoft and MaxSoftLD) or 1076°C (Re1Cu)
熔點	1083°C (DHF, iCu, MaxSoft and MaxSoftLD) or 1076°C (Re1Cu)
Auto-ignition temperature	Not applicable
自燃溫度	不适用

## 10 Stability and reactivity

稳定性和反应

10.1	Conditions to avoid 需避免的环境	None known 无
10.2	Materials to avoid 需避免接触的物质	None known 无
10.3	Hazardous deposition products 有害沉积产品	None known 无

## 11 Toxicological information

毒理学信息

None  
无

## 12 Ecological information

生态学信息

12.1	Ecotoxicity 生态毒性	None known 无
12.2	Mobility 迁移率	None known 无
12.3	Persistence and degradability 降解性	None known 无
12.4	Bio accumulative potential 生态积累潜力	None known 无
12.5	Other adverse effects 其他不利因素	None known 无

## 13 Disposal considerations

废弃建议

### 13.1 Waste disposal 废弃建议废料处理

Copper containing waste is normally collected to recover copper value. Should waste disposal be deemed necessary, follow all Federal, State and Local disposal regulations.  
铜废料通常需被回收，因此废料处理需符合联邦、州和地区的相关规定。

## 14 Transport information

### 运输须知

- 14.1 This is not a hazardous product according to the transport regulations: RID (rail, 96/49/EC), ADR (road, 94/55/EC), IMDG (sea) and ICAO/IATA (air).  
根据有关运输规定 RID(铁路运输,96/49/EC),ADR(公路运输,94/55/EC),IMDG(海运),ICAO/IATA(空运),本产品非危险。

## 15 Regulatory information

### 法规信息

According to our present knowledge, this product is not subject to any regulation.  
本产品符合目前所有法律法规。

## 16 Other information

### 其他信息

- 16.1 No relevant R-Phases.  
无相关R-阶段。
- 16.2 The information contained herein is based on the present state of our knowledge and is intended to describe our product from the point of view safety requirements. It does therefore not guarantee specific properties of the products.  
这里所提供的信息是根据我们目前的认知,旨在从安全要求的角度来陈述本产品。因此,本文对产品的详细特性不作保证。