

## 1. Product Identification

<b>Product Code</b>	878 Lead free Solder Paste	
<b>Trade Name</b>	Delta <sup>TM</sup> Solder Paste	
<b>Manufacturer</b>	Qualitek-Europe Ltd	Unit 9 Apex Court, Bassendale Road Bromborough, Wirral, CH62 3RE. UK. Fax 44(0)151-346-1408 Tel 44(0)1513340888
<b>Supplier / Importer</b>		

## 2. Composition and information on Components

Components	Content	EC No	CAS	Hazard	Risk
Tin	***		7440-31-5		
Copper	***		7440-50-8		
Silver	***		7440-22-4		
Modified Rosin	<4.5%		65997-05-9	Xi:Irritant	R43
High Boiling point Glycol Ether	<1.5%		112-73-2		

\* Typically 85-89% of the paste will be constituted by metal alloy. Percentage weights of metals will vary according to the alloy type - see product label for details.

## 3. Hazard Identification

<b>Main Hazards</b>	Irritant May cause sensitisation by skin contact Irritating to eyes, respiratory system and skin
<b>Health Effects Inhalation - Ingestion</b>	Inhalation of the fumes or ingestion may cause headache, nausea, muscular pain. Irritation of the eyes and nose may result from contact with soldering fumes. Contact with the skin may cause sensitisation .
<b>Chronic (Prolonged effects)</b>	Anaemia, insomnia, weakness, constipation, nausea and abdominal pain due to ingestion. Skin rash, damage of mucous membrane due to skin exposure and inhalation. Possibility of Asthmatic reactions through repeated exposure to soldering fumes.

## 4. First Aid Measures

<b>First Aid - Eyes</b>	Immediately flush the eyes with water for at least 15 minutes, holding the eye open. Obtain medical attention urgently.
<b>First Aid - Skin</b>	Wash thoroughly with soap and water and remove all contaminated clothing as washing proceeds. Apply suitable lotion to prevent dryness. Seek medical attention.
<b>First Aid - Inhalation</b>	Remove person to fresh air and keep subject warm and at rest. Seek medical attention.
<b>First Aid - Ingestion</b>	Wash out mouth with water. Do not induce vomiting. Keep subject warm and at rest. Seek medical attention.

## 5. Fire Fighting Measures

<b>Extinguishing media</b>	Use Carbon Dioxide, Dry chemical, Alcohol resistant foam. Beware of the possibility of re-ignition.
<b>Special Hazards</b>	Dangerous when exposed to heat of flame. Containers may explode in heat of fire. Vapours can travel a considerable distance to source of ignition to cause flash-back.
<b>Protective Equipment for Fire Fighting</b>	Wear full protective clothing and use breathing apparatus.

## 6. Accidental Release Measures

<b>Personal Precautions</b>	Wear appropriate protective clothing especially gloves. Eliminate sources of ignition. Avoid breathing vapour and contact with skin.
<b>Environmental Precautions</b>	Capture all paste and dispose of via registered waste disposal contractor
<b>Spillages</b>	Scoop up and return to original container. Any remaining paste should then be wiped up using cloth or strong paper based wipes using IPA or detergent and water. Spent wipes should be collected by a registered waste disposal contractor.

## 7. Handling and Storage

<b>Handling</b>	Use in well ventilated area. Avoid breathing in vapour or resultant soldering fumes. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Always wear gloves before opening containers and during handling. Wash hands after handling paste. Cardboard boxes containing multiple packages may weigh up to 30Kgs
<b>Storage</b>	Storage area should be well ventilated, cool and dry. Store in original containers under refrigeration at 6 Deg C. Avoid temperature fluctuation during storage.

## 8. Exposure Controls - Personal Protection

Occupational Exposure Limits	TLV	OSHA PEL	ACGIH TLV
Tin	2mg/m <sup>3</sup>	2mg/m <sup>3</sup>	2mg/m <sup>3</sup>
Copper	0.20mg/m <sup>3</sup>	0.20mg/m <sup>3</sup>	0.20mg/m <sup>3</sup>
Silver	0.1mg/m <sup>3</sup>	0.01mg/m <sup>3</sup>	0.1mg/m <sup>3</sup>
Antimony	0.5mg/m <sup>3</sup>	0.5mg/m <sup>3</sup>	0.5mg/m <sup>3</sup>

<b>Engineering Control Measures</b>	Ensure work area is well ventilated and equipment properly exhausted. Work area should be arrange so as not expose the operator to unnecessary vapour levels.
<b>Respiratory Protection</b>	Respiratory protection if there is a risk of exposure to high soldering vapour levels.
<b>Eye Protection</b>	Suitable eye protection should be worn to prevent splashing or flicking of paste into eyes.
<b>Skin Protection</b>	Suitable gloves. Wash hands after use and remove paste from under fingernails.
<b>Foot Protection</b>	Not necessary unless handling cartons holding multiple quantities of containers

## 9. Physical and Chemical Properties

Form	Paste
Appearance	Metallic-grey
Odour	Ethereal Odour
Boiling point	197 Deg C (vehicle)
Melting point	217 Deg C
Flash Point	>98 Deg C
Auto Ignition Temperature	>226 Deg C
Flammability limits in air	Lower : n/a Upper : n/a
Explosion Limits	Lower : n/a Upper : n/a
Vapour pressure	n/a
Vapour Density	n/a (Air = 1)
Evaporation Rate	n/a (BuAc = 1)
Specific Gravity	3.5 to 5.5 (H <sub>2</sub> O = 1 @ 25 Deg C)
Solubility	Partially soluble in water (vehicle)

## 10. Stability and Reactivity

Stability	Stable under normal conditions
Conditions to avoid	none
Materials to avoid	Strong acids, strong oxidising agents
Hazardous Decomposition Products	May release toxic vapours / gases such as Carbon Monoxide, Carbon Dioxide

## 11. Toxicological Information

Basis of Assessment	Information given is based on product data
Acute Toxicity - Oral	LD50 > 3000 mg/kg (lead)
Acute Toxicity - Dermal	LD50 > 3000 mg/kg
Acute Toxicity - Inhalation	LD50 > 5mg/L
Eye Irritation	Slight irritant
Skin Irritation	Slight Irritant - risk of sensitisation
Respiratory Irritation	Irritant in animal studies with possibility of sensitisation.
Skin sensitisation	May cause skin sensitisation
(Sub) Chronic Toxicity	Repeated exposure causes liver damage
Human effects	Repeated exposure can lead to allergic contact dermatitis. Repeated exposure to high levels of soldering fumes may give rise to occupational asthma.

## 12. Ecological Information

Mobility	The product is most likely to separate in water
Degradability	Solvent vehicle may degrade but alloy will not
Bio-accumulation	Possibility of accumulation of metallic alloys.
Ecotoxicity	

## 13. Disposal

Product	Product and spent containers should be disposed of by registered waste disposal contractor.
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## 14. Transport Information

UN Number, Shipping name and Class	n/a
Proper Shipping Name	n/a
UN Class / Packing Group	not classified
Packing Symbol	n/a

Trem Card Number	none
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## 15. Regulatory Information

### Labelling Information

Irritant



Risk Phrases	R21/22	: Harmful if swallowed and by inhalation
	R36/37/38	: Irritating to eyes, respiratory system and skin
	R43	: May cause sensitisation by skin contact

Safety Phrases	S2	:Keep out of reach of children.
	S23	:Do not breathe soldering fumes.
	S24/25	:Avoid contact with skin and eyes.
	S36/37	:Wear suitable protective clothings and gloves.

EC Annex 1 Classification	X <sub>i</sub>	Irritant
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Regulations / References	Refer to the requirements of all relevant local regulations. For the United Kingdom, see Control of Substances Hazardous to Health Regulations (COSHH), the Health and Safety at Work Act (HSWA) and the Carriage of Dangerous Goods by Road and Rail Regulations 1994.
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## 16. Other Information

Application	See technical data sheet for application information
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