

## 1. Product Identification

Product Code	QSW NC600 Solder Wire		
Trade Name	Delta <sup>TM</sup> Solder Wire		
Manufacturer	Qualitek (Europe) Ltd	Unit 9 Apex Court, Bassendale Road, Bromborough, Wirral CH62 3RE. UK. Fax 44(0)151-346-1408 Tel 44(0)151-334-0888	
Supplier / Importer			

## 2. Composition and information on Components

Components	Content	EC No	CAS	Hazard	Risk
Tin	60 - 63 % *	231-141-8	7440-31-5		
Lead	36 - 37% *	231-100-4	7439-92-1		Repr; Cat1 R61- Repr Cat3 R62 Xn R20/22
Silver	2% *		7440-22-4		
Modified Rosin	<4%	232-475-7	8050-09-7	Xi: Irritant	Xn R43

\* Typically 98% of the wire 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

**Fumes Produced by rosin when the product is heated in normal use may additionally cause respiratory sensitisation by inhalation.**

<b>Main Hazards</b>	Thermal burns from contact with molten product Exposure to rosin based solder flux fume can cause occupational asthma or exacerbate pre-existing asthmatic conditions.
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**INHALATION** The fumes produced by heating rosin when the product is in normal use may cause sensitisation by inhalation. Solder alloys containing lead give off negligible lead fumes at normal soldering temperatures up to 500C.

**INGESTION** Contains Lead, which is a cumulative poison. Long term effects include anaemia, fatigue, abdominal pain, anorexia, constipation or diarrhoea, reduced oxygen carrying capacity of blood. It can also cause birth defects and other reproductive harm.

**SKIN & EYES** Molten metal may cause severe damage to skin and eyes.

**Environmental** Tin and lead in the product may leach from landfill as salts and these are potentially hazardous to aquatic organisms.

**The product supplied is classifiable as:-** Repr cat1; R61 – Repr cat3: R62 – R33 – Xn R20/22- Xn R43

#### 4. First Aid Measures

<b>First Aid - Inhalation</b>	Inhalation of solder flux fume(at normal use temperatures) may cause respiratory distress, and inhalation of lead fumes(produced at temperatures above 500C) can give rise to lead poisoning.Remove to fresh air.If patient has respiratory difficulty seek medical attention
<b>First Aid - Skin</b>	Rosin based solder flux fume may cause a skin rash to develop.If any skin rash develops, seek medical advice.
<b>Eye Contact</b>	Rosin based solder flux fume may irritate eyes.Flush immediately with plenty of water.The flux may spit during soldering.In cases where spitting flux has entered the eye seek medical attention.
<b>First Aid - Ingestion</b>	Do not induce vomiting. Obtain medical advice.

#### 5. Fire Fighting Measures

<b>Extinguishing media</b>	n/a
<b>Special Hazards</b>	The fumes produced by rosin may cause sensitisation by inhalation.Temperatures above 500C may produce fumes and/or vapours that,on cooling,may condense as heavy metal dust.
<b>Protective Equipment for Fire Fighting</b>	Wear full protective clothing and breathing apparatus operated in positive Pressure mode.

#### 6. Accidental Release Measures

<b>Personal Precautions</b>	Avoid inhalation of any fume from hot product .Avoid contact with hot product, and wash hands after handling cold product.Refer to section 8, Personal Protection.
<b>Environmental Precautions</b>	Ensure solder is collected in suitable containers for disposal in accordance with local and national legislation.Refer to section 13 ,Disposal
<b>Spillages</b>	n/a but observe personal hygiene measures in Section 8

#### 7. Handling and Storage

<b>Handling</b>	The fumes produced during use should be extracted away from the breathing zone of the operators using properly designed efficient, well –maintained, local exhaust ventilation. See HSE publications HSG 37 and especially INDG 249. Ensure that the general area is well ventilated.Do not eat, drink or smoke during use.Wash hands with soap and water after handling soldering products,particularly before eating, drinking or smoking.
<b>Storage</b>	Keep out of the reach of children and away from food and drink.

## 8. Exposure Controls - Personal Protection

Work Place Exposure Limits	WEL
Tin	2mg/m <sup>3</sup>
Lead	0.15mg/m <sup>3</sup>
Silver	0.1mg/m <sup>3</sup>
Antimony	0.5mg/m <sup>3</sup>
Fumes from Rosin fluxes *	0.05mg/m <sup>3</sup>

\* Rosin based solder flux fume has been assigned a Workplace Exposure Limit (WEL), measured as total resin acids, in HSE Publication EH40. The COSHH Asthmagens ACOPI requires that exposure must be reduced as far as reasonably practicable below the WEL. Monitoring for rosin based solder flux fume should be in accordance with the guidance in MDHS 83/2

<b>Respiratory Protection</b>	Fume should be primarily controlled by engineering measures (see under handling). If there is inadequate fume extraction during use then a combined particulate and organic vapour filter or cartridge to FFP3 to EN149:2001 should be the minimum requirement, however this may not provide adequate protection from facial skin sensitisation caused by exposure to the fumes.
<b>Eye Protection</b>	Operators should wear CE marked glasses or goggles conforming to EN166, to protect the eyes if there is a risk from spitting flux.
<b>Skin Protection</b>	May be required if there is a likelihood of thermal burns. For protection against molten solder or hot objects a glove manufactured from Kevlar or similar material will be required. This should be worn over a single use nitrile glove to give protection against skin exposure to the rosin. Appropriate precautions should be taken to ensure that long term use of gloves does not lead to skin conditions that could result in irritant contact dermatitis. We recommend that appropriate specialist advice be obtained either from an independent adviser or from a reputable glove manufacturer.
<b>Health surveillance</b>	Exposure to rosin, even as fume, can cause dermatitis, and health surveillance is recommended. Health surveillance is also advisable to monitor for the onset of any respiratory problems unless the risk assessment of the fume control strategy is such that there is not a reasonable likelihood that occupational asthma may occur.
<b>Environmental</b>	Do not allow solder wire to enter the general waste stream.

## 9. Physical and Chemical Properties

<b>Form</b>	Light grey metal wire
<b>Appearance</b>	Metallic-grey
<b>Odour</b>	None
<b>Boiling point</b>	1380 Deg C (vehicle)
<b>Melting point</b>	183 Deg C (for Sn63/Pb37 alloy)
<b>Flash Point</b>	>115 Deg C
<b>Auto Ignition Temperature</b>	>226 Deg C
<b>Flammability limits in air</b>	Lower : n/a Upper : n/a
<b>Explosion Limits</b>	Lower : n/a Upper : n/a
<b>Vapour pressure</b>	n/a
<b>Vapour Density</b>	n/a (Air = 1)
<b>Evaporation Rate</b>	n/a (BuAc = 1)
<b>Specific Gravity</b>	3.5 to 5.5 (H <sub>2</sub> O = 1 @ 25 Deg C)
<b>Solubility</b>	Partially soluble in water (vehicle)

## 10. Stability and Reactivity

<b>Stability</b>	Stable under normal conditions
<b>Conditions to avoid</b>	If solder is exposed to temperatures over 500C lead fume will be produced.
<b>Materials to avoid</b>	Strong acids, strong oxidising agents
<b>Hazardous Decomposition Products</b>	May release toxic vapours / gases such as Carbon Monoxide, Carbon Dioxide

## 11. Toxicological Information

<b>Basis of Assessment</b>	Information given is based on product data
<b>Acute Toxicity - Oral</b>	LD50 > 3000 mg/kg (lead)
<b>Acute Toxicity - Dermal</b>	LD50 > 3000 mg/kg
<b>Acute Toxicity - Inhalation</b>	LD50 > 5mg/L
<b>Eye Irritation</b>	Flux fumes may irritate the eyes
<b>Skin Irritation</b>	Rosin is a skin sensitiser and may cause dermatitis in use. Solder fumes in contact with the skin may cause a skin reaction. Cold lead is not regarded as a skin hazard, but lead can be transferred from the skin on to food, cigarettes etc, if a high standard of personal hygiene is not exercised. see Ingestion below.
<b>Inhalation</b>	The product does not present a risk at ambient temperatures. Inhalation is the main route of exposure for flux fumes. Rosin based solder flux fume is a respiratory sensitiser which can cause or exacerbate occupational asthma. Providing that soldering temperature is below 500C the amount of lead in the fume should be negligible.
<b>Ingestion</b>	Whilst in the form supplied, lead ingestion is not considered likely, heating lead above 500C will give rise to lead fume which can condense as fine particles or dust in the workplace and contaminate skin, food, cigarettes etc. Lead is a reprotoxic material that can cause harm to the unborn child and may also impair fertility. Lead can cause blood formation impairment and central nervous system depression.

## 12. Ecological Information

<b>Mobility</b>	The product is most likely to separate in water
<b>Degradability</b>	Solvent vehicle may degrade but alloy will not
<b>Bio-accumulation</b>	Lead is bioaccumulated by terrestrial and aquatic plants and animals, but is not biomagnified in terrestrial or aquatic food chains. However tin and lead in the product may leach from landfill as salts and these salts are potentially hazardous to aquatic organisms (See section 13).
<b>Ecotoxicity</b>	

## 13. Disposal

<b>Product</b>	Waste solder wire is classified as HAZARDOUS WASTE under the Hazardous waste (England and Wales) Regulations 2005 (SI No 894) (HWR) and the list of wastes (England) Regulations 2005 (SI 895) (LoWR) and equivalents in Wales, Scotland and Northern Ireland and should be put in suitable containers and consigned to an appropriately licensed disposal or recovery facility.
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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

The use of this product is subject to the requirements of the Control of Substances Hazardous to Health Regulations 2002(COSHH) (SI 2002 No.2677, as amended). See also HSE COSHH Essentials (<http://www.coshh-essentials.org.uk/>)

The use of this product is subject to the EC Restrictions of the use of certain hazardous substances in Electrical and Electronic Equipment Directive (2002/95/EC) as implemented by the restriction of the use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2006 (SI 2006 No 1463)

<b>Risk Phrases</b>	R21/22	: Harmful if swallowed and by inhalation
	R33	: Danger of cumulative effects
	R43	: May cause sensitisation by skin contact
	R61	may cause harm to unborn child
	R62	Possible risk of impaired fertility

### Symbol Letters and phrases used in section2 Short Terms :

Repr = Substance Toxic for reproduction  
Cat = Category (1= worst)

<b>EC Annex 1 Classification</b>	X <sub>i</sub>	Irritant
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<b>Regulations / References</b>	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

<b>Application</b>	See technical data sheet for application information
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