## 1. Product Identification

| | | |
|---|---|---|
| **Product Code** | 619D Solder Paste | |
| **Trade Name** | Delta ™ Solder Paste | |
| **Manufacturer** | Qualitek-Europe Ltd | Unit 9 Apex Court,Bassendale Road<br>Bromborough,Wirral.CH62 3RE. UK.<br>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 % * | | 7440-31-5 | | |
| Lead | 36 - 37% * | | 7439-92-1 | | R21/22 |
| Silver | 2% * | | 7440-22-4 | | |
| Modified Rosin | <4.5% | | 65997-05-9 | Xi:Irritant | R43 |
| High boiling point Glycol Ether | <1.5% | | 112-73-2 | | |

* Typically 85-90% 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

| | |
|---|---|
| **Main Hazards** | Irritant<br>May cause sensitisation by skin contact<br>Irritating to eyes, respiratory system and skin |
| **Health Effects Inhalation - Ingestion** | 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 and there is the risk of accumulative affects through repeated ingestion of lead. |
| **Chronic (Prolonged effects)** | 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

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

## 5. Fire Fighting Measures

| | |
|---|---|
| **Extinguishing media** | Use Carbon Dioxide, Dry chemical, Alcohol resistant foam. Beware of the possibility of re-ignition. |
| **Special Hazards** | 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. |
| **Protective Equipment for Fire Fighting** | Wear full protective clothing and use breathing apparatus. |

## 6. Accidental Release Measures

| | |
|---|---|
| **Personal Precautions** | Wear appropriate protective clothing especially gloves. Eliminate sources of ignition. Avoid breathing vapour and contact with skin. |
| **Environmental Precautions** | Capture all paste and dispose of via registered waste disposal contractor |
| **Spillages** | 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

| | |
|---|---|
| **Handling** | 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 |
| **Storage** | 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** | **ACGHIH TLV** |
|---|---|---|---|
| Tin | 2mg/m$^3$ | 2mg/m$^3$ | 2mg/m$^3$ |
| Lead | 0.05mg/m$^3$ | 0.05mg/m$^3$ | 0.15mg/m$^3$ |
| Silver | 0.1mg/m$^3$ | 0.01mg/m$^3$ | 0.1mg/m$^3$ |
| Antimony | 0.5mg/m$^3$ | 0.5mg/m$^3$ | 0.5mg/m$^3$ |
| Fumes from Rosin fluxes | | 0.3mg/m$^3$ * (OES under review) | |

| | |
|---|---|
| **Engineering Control Measures** | 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. |
| **Respiratory Protection** | Respiratory protection if there is a risk of exposure to high soldering vapour levels. |
| **Eye Protection** | Suitable eye protection should be worn to prevent splashing or flicking of paste into eyes. |
| **Skin Protection** | Suitable gloves. Wash hands after use and remove paste from under fingernails. |
| **Foot Protection** | 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** | 183 Deg C (for Sn63/Pb37 alloy) | |
| **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 | ($H_2O$ = 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. |

## 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 |

## 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** $X_i$ Irritant

**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.

## 16. Other Information

**Application** See technical data sheet for application information