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### MATERIAL SAFETY DATA SHEET

**PRODUCT:** Polyurethane Solderable Enamel Wire

#### APPLICATIONS

Round copper wires used in the wiring of electronic circuits, windings of electrical motors, instruments and components.

#### CHEMICAL AND PHYSICAL PROPERTIES

- Composition of resin: Modified Polyurethane
- Physical State: Solid
- Thermal Class: (IEC 172): 155

### STORAGE AND HANDLING AND TRANSPORT

- Special transport precautions: None
- Special Storage precautions: None
- Personal protection measures: None

#### INFLAMMABILITY AND EXPLOSION DANGER

- Not inflammable without primer
- With primer it is inflammable at temperature over 400°C
- It is immediately auto-extinguishing
- It is not explosive

#### TOXICOLIGICAL DATA

In the case of total destruction by fire (by persistent flame at 700°C) before auto-extinguishing, the product will exhale CO, CO2, H2O as steam and will leave carbon residue. HAZARDOUS FUMES or DUST may be generated when soldering, welding, burning, wire brushing, melting or processing enameled wires. Excessive exposure to dust may cause irritation to the eyes, skin and/or respiratory systems. The wearing of appropriate protective eye, skin and breathing equipment may be required. Inhalation of fumes should be avoided. The soldering of polyurethane enamel can present an Isocyanate inhalation hazard. Levels of free Isocyanate above the control limit can be generated during the soldering operation. It is recognised that exposure to Isocyanates can lead to sensitisation and occupational Asthma. Fumes should be removed by efficient exhaust ventilation.

#### **EXPOSURE LIMITS**

Exposure limit 0.020mg per cubic metre for an 8 hour time weighted average reference period. Short term exposure limit 0.07mg per cubic metre for a 10 minute period.

#### ECOLOGICAL DATA

Waste should normally be recycled due to the high value of the base metal.

It should be noted that enameled wires are lubricated with wax at <75 mg per square metre of wire surface.

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# Notes for guidance when using the Roadrunner System

### General Wire Schedule.

To obtain full benefit from the Roadrunner System it is essential to generate a wiring schedule, giving consideration to component placement.

Sig.No.	1stConn(a/p)	2nd Conn.	3rd Conn.
0	A4-6	B4-3	C4-2
1	/		
		A4-6 ≡ 1C A4 pin 6	

The 2nd column is an 'output' ie. an Ic output or an input signal to contact fingers from an external source. Decide on Ic/Holder Layout

With strip positioned

(a) - high packing density(b) - low packing density

Glue fix strips - coat the base of the strip with a quickset adhesive then place in position.

Press Fix strips - press fit into Roadrunner® boards.

### **Proceed with Wiring**

After loading, the Ic's/holder bend the relevant +v and Gnd pins to retain the components in the board. Turn the board over and wire +v and Gnd pins first.

Refer to wiring schedule: If wiring run includes connections to contact fingers wire contact fingers first. With double sided contact finger connections to component side of the board refer c). Don't turn the board over yet - this wastes time - wait until all 'wiring side' connections have been made.

When beginning the 'run' from an Ic/holder pin d) extend - say, 4mm of wire from the pencil tip and bend to a suitable angle for insertion, into the hold containing the Ic leg. Wrap 2-3 times around the pin and lead off into the WD strip to the next pin and again wrap 2-3 times - and so on: e). At the end of the 'run', extend the wire, say 4mm and cut the wire close to the Ic leg. This leaves the correct wire length for the next new 'run'.

On completion of wiring, solder all joints. This is effected with the use of a very hot iron, approximately 420°C with resin cored solder. The application of the iron and solder removes the protective lacquer on the wire and makes good the joint. - See warning notice.

## **Replacement of Ic's**

Ideally holders should be used. However, when wiring direct to Ic legs, replacement is straight forward. In order not to upset the wiring to the Ic, check that all leads are connected to the solder pads on the wiring side of the board. Remove Ic by cutting the pins at the shoulder (comp. side). Place a new component over the leads of the previous device and solder to the original leads.

### **Wire Modifications**

Cut the wire close to the Ic pin. Push this 'clean' end into the 'strip' forming an easily detectable loop that can be followed along the channels, thus making the tracing of wires a simple operation.









