

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** VPB Tubing, DR-25 Tubing, DCNS Tubing  
VPB Molded Parts (-50), and EPB Molded Parts (-51)

**MANUFACTURER:** Tyco Electronics Corporation  
**DIVISION:** Thermofit  
**ADDRESS:** 300 Constitution Drive  
Menlo Park, CA 94025-1164 USA

**SUPPLIERS**

**EMERGENCY TELEPHONE NUMBERS:** US: CHEMTREC 1-800-424-9300  
CN: CHEMTREC 1-800-424-9300  
Outside North America: 1-703-527-3887  
(Collect calls accepted)

**NON-EMERGENCY HEALTH/SAFETY INFORMATION:** North America: 1- 650-361-4907

**CHEMICAL FAMILY:** Not applicable – These products are manufactured articles.

**PRODUCT USE:** Typical uses of heat-shrinkable polymeric products include primary electrical insulation, EMI/RFI shielding, cable jacketing and repair, strain relief, component encapsulation, waterproofing, packaging, environmental/mechanical protection, cable joining and splicing, and terminations in commercial and military/aerospace electronic applications.

These products may emit thermal decomposition and combustion byproducts that contain hazardous substances that regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (67/548/EEC-Dangerous Substance Labelling, 98/24/EC-Chemical Agents at Work, 99/45/EC-Preparation Labeling, 2001/58/EC-MSDS Content, and 1907/2006/EC-REACH). A MSDS/SDS is required for these products considering that when burned, they may present a health and safety exposure or other hazard.

**SECTION 2: HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** These products are not hazardous during proper installation, as directed by product installation guides. If overheated to degradation, most significantly if the product burns, thermal degradation and combustion byproducts may be toxic and should not be inhaled.

Thermal degradation and combustion byproducts generated will depend on the base polymers used, and may include, but are not limited to: carbon monoxide, carbon dioxide, aldehydes, organic acids, alcohols, esters, ureas, halogenated hydrocarbons, tetrahydrofuran, silicon dioxide, hydrogen fluoride, hydrogen bromide, oxides of nitrogen, phosphorus, and sulfur, and aromatic amines, aromatic isocyanates and traces of hydrogen cyanide.

Heat-shrinkable products may be coated with or used in conjunction with adhesives/mastics which are based on olefin copolymers or polyamides.

**POTENTIAL HEALTH EFFECTS:**

This Safety Data Sheet applies to a group of products which are not hazardous as supplied, but which may be emit hazardous thermal decomposition products

**ACUTE HEALTH HAZARDS:**

**EYES:** Heating these products may generate **small amounts** of isocyanates which may cause eye irritation. Contact with molten material may cause thermal burns.

**SKIN:** Heating these products may generate **small amounts** of isocyanates which may cause skin irritation. Contact with the molten material may cause thermal burns. No harmful effects are expected from skin absorption of These products

**INGESTION:** Ingestion of these products is highly unlikely. There is insufficient information available on these materials to predict the effects from ingestion.

**INHALATION:** Heating these products may generate **small amounts** of aromatic isocyanates which can cause an asthma-like condition in sensitized individuals. This condition may be delayed up to several hours after exposure. Hypersensitive persons may suffer respiratory problems (shortness of breath, wheezing, or cough) even at low isocyanate concentrations.

**CHRONIC HEALTH HAZARDS:**

None of the ingredients to which users may be exposed and which are present at equal to or greater than 0.1% of the product, are listed by OSHA, NTP, or IARC as suspect carcinogens.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**

Overheating the product to charring or burning may produce vapors that may cause eye, skin, nose and throat irritation. Persons with pre-existing eye, skin, or respiratory disorders (e.g., asthma conditions) may be more susceptible to the effects of these vapors.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Not applicable – These products are manufactured articles.

Base polymer materials may include polyethylene, olefin copolymers, and fluoropolymers. Heat-shrinkable products may be coated with or used in conjunction with adhesives/mastics, which are based on olefin copolymers or polyamides.

**SECTION 4: FIRST AID MEASURES**

**EYE CONTACT:** If eye irritation occurs, hold eyelids apart and flush affected area(s) with clean water. Seek medical attention.

**SKIN CONTACT:** First aid is normally not required. After handling product, it is good work practice to wash your hands. If molten material contacts skin, cool area immediately in water. **DO NOT** attempt to remove material from the skin. Treat as a burn, and seek medical attention.

**INGESTION:** Not a normal route of exposure. However, if swallowed and symptoms develop, seek medical attention.

**INHALATION:** If respiratory symptoms or other symptoms of exposure develop, move victim to fresh air. If symptoms persist, seek medical attention. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention. If victim is not breathing, immediately begin artificial respiration. Keep victim warm and quiet; seek immediate medical attention.

**SECTION 5: FIRE-FIGHTING MEASURES****FLAMMABLE PROPERTIES**

**FLASHPOINT:** Not applicable

**METHOD USED:** Not applicable

**FLAMMABLE LIMITS**

**UPPER FLAMMABILITY LIMIT (% BY VOLUME):** Not applicable

**LOWER FLAMMABILITY LIMIT (% BY VOLUME):** Not applicable

**AUTOIGNITION TEMPERATURE:** Not determined

**SUITABLE EXTINGUISHING MEDIA:**

Carbon dioxide, water, dry chemical, or foam

Selection of extinguishing media should be based upon the size of the fire, the firefighting training/experience of the individual attempting to extinguish or control the fire, and the packaging materials exposed to the fire.

**SPECIAL FIRE FIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:**

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive demand mode when fighting fires.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Toxic fumes may be given off in a fire. See also sections on Thermal Degradation and Combustion Byproducts and Other Precautions.

**SPECIFIC HAZARDS IN CASE OF FIRE:**

**SENSITIVITY TO STATIC DISCHARGE:** None known

**SENSITIVITY TO MECHANICAL IMPACT:** None known

**HAZARDOUS COMBUSTION PRODUCTS:**

Thermal degradation is not likely to occur at temperatures achieved during proper installation, as directed by product installation guides. At temperatures higher than those recommended, most significantly if the product burns, the thermal degradation and combustion byproducts will depend on the base polymers used and may include, but are not limited to polyethylene and olefin copolymers, fluoropolymers, polyamides, and polyesters. Heat-shrinkable products may be coated with or used in conjunction with adhesives/mastics which are based on olefin copolymers or polyamides.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS:**

Wear appropriate personal protection when responding, as specified under Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENVIRONMENTAL PRECATIONS:**

Prevent spilled material from entering sewers and waterways.

**SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:**

Sweep up and collect in a suitable container for disposal or reuse.

**SECTION 7: HANDLING AND STORAGE****PRECAUTIONS FOR SAFE HANDLING AND STORAGE:**

**Handling:** Heat resistant gloves are required if hot products are handled after installation. Avoid breathing any vapors/fumes given off when the product is heated. Allow any vapors/fumes to disperse and ventilate before continuing work in the area. Avoid contact with molten material. Heat-resistant gloves are required if hot products are handled after installation. Do not consume food, beverages or tobacco in the immediate work area. Wash hands before eating, drinking or smoking.

**Installation:** Follow appropriate Raychem installation instructions and application guides to ensure that installation is performed properly. Ensure that any local requirements/legislation concerning the use of hand-held electrical equipment are observed. When using IR (infrared) heating devices, observe specific instructions. Do not touch hot surfaces on installation equipment.

**Storage:** These products are stable under normal conditions.

**OTHER PRECAUTIONS (e.g.; Incompatibilities):**

See installation instructions for proper installation procedures. If product chars or burns, immediately stop heating. Avoid inhaling any vapors/fumes which may be given off under such circumstances. Allow any vapors/fumes to disperse and ventilate before continuing work in the area.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:**

OSHA, ANSI, or NIOSH guidelines should be followed.

**VENTILATION:**

Provide general or local exhaust ventilation systems

**RESPIRATORY PROTECTION:**

If installation occurs in a confined, unventilated area, NIOSH/MSHA-approved air-supplied respirators are recommended.

**EYE PROTECTION:**

If there is a danger of molten material contacting the eyes, use eye/face protection.

**SKIN PROTECTION:**

If there is a danger of molten material contacting the skin, wear heat resistant gloves.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:**



**HAZARDOUS POLYMERIZATION:** Will not occur. No known polymerization conditions to avoid.  
**CONDITIONS TO AVOID:** Avoid overheating of product.

**SECTION 11: TOXICOLOGICAL INFORMATION****ACUTE TOXICITY (Test Results Basis and Comments):**LD<sub>50</sub> (Oral, Rat): Not determinedLC<sub>50</sub> (Inhalation, Rat): Not determined**ROUTES OF ENTRY/EFFECTS OF ACUTE OVEREXPOSURE:**

Overheating the product to charring or burning may produce vapors that may cause eye, skin, nose and throat irritation.

**SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):**

Not determined.

**IRRITANCY OF PRODUCT:** Vapours from the heated product may cause irritation of the eyes, skin, nose, and throat.**SENSITIZATION TO MATERIAL:** Persons with pre-existing eye, skin, or respiratory disorders (e.g., asthma conditions) may be more susceptible to the effects of vapors produced by burning or charring product.**CARCINOGENICITY:** None of the ingredients to which users may be exposed and which are present at equal to or greater than 0.1% of the product, are listed by OSHA, NTP, or IARC as carcinogens.**REPRODUCTIVE TOXICITY:** Not determined.**TERATOGENICITY:** Not determined.**MUTAGENICITY:** Not determined.**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** Not determined.**SECTION 12: ECOLOGICAL INFORMATION****PERSISTENCE & DEGRADABILITY:**

No data available on biodegradation.

**BIO-ACCUMULATIVE POTENTIAL (Including Mobility):**

No data available on bioaccumulation.

**AQUATIC TOXICITY (Test Results & Comments):**

No data available on aquatic toxicity.

Additional Information

- No known effects on stratospheric ozone depletion.
- Water Endangering Class (WGK): NA

**SECTION 13: DISPOSAL CONSIDERATIONS****WASTE DISPOSAL METHOD:**

Treatment, storage, and disposal must be in accordance with applicable, federal, state, provincial, and local regulations.

**HAZARDOUS WASTE**

If there are local regulations covering the controlled incineration of halogenated materials. Then all halogen-containing products will be subject to such regulations. Refer to the product literature for identification of halogen-containing products.

**CLASS/CODE:**US - Not applicable to material as manufactured for distribution into commerce.  
CN - Not applicable to material as manufactured for distribution into commerce.  
EWC - Not applicable to material as manufactured for distribution into commerce.Additional Information

Not Included - Dispose/Recycle as allowed by local jurisdiction for the end-of-life characteristics as-disposed.

**SECTION 14: TRANSPORT INFORMATION**

These products are non-hazardous under Department of Transportation Regulations 49, CFR Section 171.8, IATA, IMO, and AFR 71-4.

**GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR:**

Proper Shipping Name	Not Subject to HMR		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

**AIRCRAFT – ICAO-IATA:**

Proper Shipping Name	Not Subject to DGR		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

**VESSEL – IMO-IMDG:**

Proper Shipping Name	Not Subject to IMDG		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

**Additional Information**

- Transportation must be in accordance with applicable, federal, state, provincial, and local regulations.
- Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped. Statement of Jurisdictional/Modal Special Provision(s) required.
- Not restricted for any mode of international transport as finished goods.
- Not a Marine Pollutant as-shipped per IMO/IMDG.

**SECTION 15: REGULATORY INFORMATION**

**INVENTORY STATUS:**

All components are listed on the TSCA; EINECS/ELINCS; and DSL, unless noted otherwise below.

**U.S. FEDERAL REGULATIONS:**

**TSCA Section 8b – Inventory Status:** All chemicals comprising these products are either exempt or listed on the TSCA Inventory.

**TSCA Section 12b – Export Notification:** If the product contains chemicals subject to TSCA Section 12b export notification they are listed below:

<u>Chemical</u>	<u>CAS #</u>
None	NA

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)**

Chemicals present in the product which could require reporting under the statute:

<u>Chemical</u>	<u>CAS #</u>
None	NA

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

If the product contains chemicals subject to the reporting requirements of Section 313 of SARA Title III, they are listed below.

<u>Chemical</u>	<u>CAS #</u>	<u>% wt</u>
None	NA	NA

**CERCLA SECTION 311/312 HAZARD CATEGORIES:** Note that these products are exempt from these regulations.

Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No
Immediate Hazard	No
Delayed Hazard	No

**STATE REGULATIONS (US):**

California Proposition 65

The following chemicals identified to exist in the product as distributed into commerce are known to the State of California to cause cancer, birth defects, or other reproductive harm:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
None	NA	NA

**INTERNATIONAL REGULATIONS (Non-US):****Canadian Domestic Substance List (DSL)**

Not applicable.

**WHMIS Classifications**

These products have been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all of the information required by the *Controlled Products Regulations*."

**NPRI and Ontario Regulation 127/01**

These products contain the following chemicals subject to the reporting requirements of Canada NPRI and/or Ont. Reg. 127/01:

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
None	N/A	N/A

**European Inventory of Existing Commercial Chemical Substances (EINECS)**

All ingredients remaining in the product as distributed into commerce are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances.

**European Communities (EC) Hazard Classification according to directives 67/548/EEC and 1999/45/EC.**

<u>R-Phrases</u>	<u>S-Phrases</u>
None	None

Additional Information

These products may be regulated under additional regulations and laws not identified above, such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution into specific domestic destinations.

**SECTION 16: OTHER INFORMATION****OTHER INFORMATION:**

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

**MSDS/SDS PREPARATION INFORMATION:**

**Department Issuing MSDS:** Tyco Electronics, Menlo Park

**Contact:** Robin Adair, EHS Programs Manager

Tel: 1-650-361-3022

Fax: 1-650-361-3696

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**END**