

MATERIAL SAFETY DATA SHEET

**ICORALLY**

2575 E BAYSHORE ROAD  
PALO ALTO, CA 94303

Effective Date: April 1991

**HEAT SHRINKABLE POLYMERIC PRODUCTS**

**SECTION 1 - - PRODUCT INFORMATION**

MANUFACTURER'S NAME: INSULATION SOURCES, INC DBA ICO RALLY  
COMPANY PHONE NUMBER: 650-856-9900  
PRODUCT NAME: Heat Shrinkable Polymeric Products (excluding Solder Sleeves see Separate MSDS)

**SECTION 2 - - INGREDIENTS / IDENTITY INFORMATION**

COMPONENTS	CAS NUMBER	OSHA PEL
Polymeric Products	Not Applicable	Not listed

**SECTION 3 - - HAZARDOUS INGREDIENTS**

Heat Shrinkable Polymeric Products are not hazardous during proper installation but may emit hazardous thermal decomposition and combustion byproducts if overheated to degradation. See Thermal Degradation and Combustion Byproduct" section of this MSDS for more specific information. Base polymer materials include polyethylene and olefin copolymers, fluoropolymers, chloropolymers, polyamides, polyesters, and silicones. Heat shrinkable products may be coated with or used in conjunction with adhesives/mastics which are based on olefin copolymers or polyamides.

**SECTION 4 - - PRODUCT APPLICATIONS**

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, and cable joining, splicing, and termination in commercial and military/aerospace electronic applications.

**SECTION 5 - - PHYSICAL DATA**

FLASH POINT (deg F)/METHOD	Not applicable	
VAPOR PRESSURE (mm/Hg@20 deg C)	Not applicable	
FLAMMABLE LIMITS IN AIR (volume%)	Lower: <u>Not applicable</u>	Upper: <u>Not applicable</u>
APPEARANCE AND ODOR	Plastic tubing and molded parts in a variety of shapes, sizes and colors. No odor.	

**SECTION 6 - - HEALTH HAZARD INFORMATION**

TOXICOLOGICAL INFORMATION EXPOSURE LIMITS: None established for polymer mixtures

HEALTH EFFECTS/SYMPTOMS OF EXPOSURE: In common with most organic materials, degradation and combustion byproducts may be toxic and should not be inhaled. (See Thermal Degradation and Combustion Byproducts Section for more specific information.) Overheating the product to charring or burning will product fumes that may cause eye, skin, nose, and throat irritation.

SUSPECTED CANCER AGENT: No ingredient of these products that is present at concentrations equal to or greater than 0.1% of the product is listed by OSHA, NTP, or IARC as suspect carcinogen.

**SECTION 7 - - STORAGE, HANDLING, AND PREVENTIVE MEASURES**

VENTILATION: In accordance with good industrial hygiene practice, ensure ventilation adequate to control exposures below state and federal permissible exposure limits (PELs) during installation.

STABLE AT ROOM TEMPERATURE: Yes

CONDITIONS TO AVOID: Avoid overheating of product.

HANDLING: Heat resistant gloves are required if hot products are handled after installation.

## **MSDS HEAT SHRINKABLE POLYMERIC PRODUCTS Continued**

**SPECIAL PRECAUTIONS:** Avoid heating products beyond temperatures required for normal installation. See installation instructions for proper installation procedures. If products char or burn, immediately stop heating. Avoid inhaling any fumes which may evolve under such circumstances. Allow any fumes to disperse and ventilate before continuing work in the area.

**THERMAL DEGRADATION AND COMBUSTION BYPRODUCTS:** In common with most organic materials, degradation and combustion byproducts may be toxic and should not be inhaled. Thermal degradation is not significant at temperatures achieved during proper installation, as directed by product installation guides. At temperatures higher than those recommended for proper installation, most significantly if the product burns, thermal degradation byproducts will depend on the base polymer used and may include, but not be limited to, carbon monoxide, carbon dioxide, aldehydes, acetic acid, low molecular weight hydrocarbons, silicon dioxide, hydrogen chloride, hydrogen fluoride, hydrogen bromide, fluoro-olefins, and oxides of nitrogen, phosphorus, and sulfur.

**PROTECTIVE CLOTHING & EQUIPMENT:** To be based on the operation performed, following OSHA, ANSI, or NIOSH guidelines. If there is a danger of molten adhesive or mastic contacting the skin or eyes, use eye/face protection and heat resistant gloves. If it is necessary to handle grossly overheated or fire-damaged products, wear impervious gloves to prevent possible contact with potentially corrosive inorganic acid residues. If installation occurs in all confined, unventilated area, NIOSH/MSHA-approved respirators are recommended.

**TRANSPORTATION:** These products are non-hazardous under Department of Transportation Regulations 49, CFR Section 171.8, IATA, IMD, and AFR 744. Because there are no applicable shipping regulations for these products, labels are not required on the outside shipping container for these products and all products may be shipped through the U.S. Postal Services.

**DISPOSAL:** All products are classified as non-hazardous waste and should be buried or incinerated at approved sites. If there are local regulations covering the controlled incineration of halogenated materials, then all flame retarded products, with the exception of zero halogen products, will be subject to such regulations. Refer to the product literature for identification of flame retarded products.

**INSTALLATION:** Follow appropriate 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 equipment.

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## **SECTION 8 - - EMERGENCY & FIRST AID PROCEDURES**

**EYES:** If eye irritation occurs, flush with water for at least 15 minutes. Seek medical attention

**SKIN:** If molten adhesive/mastic contact skin, cool 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. If swallowed, seek medical attention.

**INHALATION:** Remove to fresh air. Seek medical attention if any breathing problems develop.

**FIRE:** Toxic fumes may evolve in a fire. Firefighters should wear self-contained breathing apparatus in enclosed areas.

**EXTINGUISHING MEDIA:** carbon dioxide X water X dry chemical X foam X other     

## **SECTION 9 - - SUPPLIER INFORMATION**

**DISCLAIMER** This information is supplied in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200). Users are advised to ensure that this information is brought to the attention of the employees, agents, or contractors handling this product. Distributors of this product are advised to forward this document, or the information contained herein, to their purchaser. ICO RALLY's obligations shall be only as set forth in ICO RALLY's standard terms and conditions of sale for this product and in no case will ICO RALLY be liable for any incidental, indirect, or consequential damages arising out of the sale, resale, use or misuse of the product. User of ICO RALLY products should make their own evaluation to determine the suitability of each such product for the specific application and to establish safe handling and installation procedures.

**END OF MSDS**