

## 1. Information about the goods and manufacturer

### Product identifier

Name of Goods : 3:1 Dual Wall Flame-retardant Heat Shrink Tubing  
 Description of Goods : Irradiated Polyolefin Heat Shrink Tubing with meltable adhesive liner

### Details of the supplier of the safety data sheet

Premier Farnell  
 150 Armley Road  
 Leeds LS12 2QQ  
 Tel. : +44 (0) 8701 202530

### Emergency telephone number

+44 1865 407333

## 2. Chemical Properties

Ingredient	Chemical Formula	Function	Percentage	CAS No.
Ethylene-vinylacetate copolymer	$(\text{CH}_2\text{CH}_2)_m\text{-(CH}_2\text{-CH-COOCH}_3)_n$	Main Material	50%	24937-78-8
Magnesium hydroxide	$\text{Mg(OH)}_2$	Flame Retardants	30%	1309-42-8
DBDPE	$\text{C}_{14}\text{H}_4\text{Br}_{10}$	Flame Retardants	10%	84852-53-9
Anti-oxide	$\text{C}_{35}\text{H}_{62}\text{O}_3$	Antioxidant	1%	6683-19-8
Pigment	Pigment	Colorant	4%	1333-86-4
Printing Ink	-	Print	-	-
EVA	$(\text{C}_2\text{H}_4)_x\text{.(C}_4\text{H}_26\text{O}_2)_y$	Sealant	5%	-

## 3. Hazard Information

Key Hazards	Toxicological Effects on Health: After the tubes are ignited, the flame will self-extinguish in a short time. A little fume will give off and have slight harm on the respiratory passage of the human body.
	Influence on Environment: It will cause air pollution when the tubes burn.
	Physical and Chemical Hazards: Normally it is in tubular shape, and shrink at 125°C, which perhaps is harmful
	Special Hazards: When roasted or fumigated, the smoke given off will have impact on the eyes and respiratory system, and is harmful to the human body.
Main symptoms: Weep, sneeze, cough, etc. These symptoms can be relieved through breathing fresh air.	
Hazards generated when burning: The tubing will burn for a short period of time after being ignited.	

## 4. First-Aid Measures

### First-aid measures for exposing in different occasions

Inhalation : During proper operation, there is no danger caused by inhalation.  
 Skin contact : No damage to skin in normal contact. As skin is easily scratched by the tubes, the operators are suggested to put on gloves in operation.  
 Eye contact : No harm.  
 Ingestion : Not edible.  
 Key harmful effects : It will impact the respiratory System if you inhale smokes generated by the burning of the tubes.

Protective measures for the rescuers : Wear respiration protection equipment.  
Suggestions to doctor : Those who have suffered severe damage in respiratory system should keep on inhaling fresh air to relieve the symptom.

## 5. Fire-fighting Measures

Suitable fire-extinguishing agent : Dry Powder Extinguisher should be used in order to put out the fire in a short time.  
Special harms possibly incurred in fire-fighting: Small amount of smoke will give off when the tubes burn, which will impact the respiratory system of human body.  
Special fire-fighting procedures : No  
Special protective equipment for the fire-fighters : Normal fire-extinguishing equipment.

## 6. Emergency measures for leakage

Attentions need to be paid by individuals : No  
Environmental notice : No  
Cleaning Method : No

## 7. Operation and Storage

Operation : The tubes will shrink when heated by oven or heat gun.  
Storage : Pack the tubes with cartons properly and place them at a shady place and at normal temperature.

## 8. Contact controls and personal protection

Contact controls : Not harmful  
Personal protective measures : No

## 9. Physical and Chemical Properties

	Properties	Test Method	Test result
Physical Properties	Tensile strength /MPa	ASTM D2671	≥12.0
	Elongation/%	ASTM D2671	≥300
	Longitudinal Shrinkage	UL224	±8%
	Elongation after aging/%	UL 224: 158°C ×168hr	≥200
Electrical Properties	Dielectric Strength (KV/mm)	IEC243	≥15
	Volume resistance/Ω·cm	UL224	≥1×10 <sup>14</sup>
Chemical Properties	Corrosion	ASTM D2671	No corrosion
	Copper stability	UL 224	PASS
	Flammability	UL 224	VW-1

Hot-melt adhesive

Property	Test Method	Test result
Water Absorption	ISO 62	≤0.2%

Property	Test Method	Test result
Softening Point	ASTM E28	95°C
Peel Strength (PE)	ASTM D1000	120N/25mm
Peel Strength (AL)	ASTM D1000	80N/25mm

## 10. Stability and Reactivity of the goods

Stability : Irresolvable  
Hazardous effects under special conditions : If exposed to fire, the products will burn in a short time and give off smoke.  
Conditions to be avoided : The products will shrink under high temperature.  
Substance to be avoided : Fire  
Hazardous decomposition product : Smoke

## 11. Toxicological Information

Acute Toxicity : No  
Partial Effect : No  
Allergic Reactions : No  
Slow toxicity or long-term toxicity : No  
Special Effects : No

## 12. Ecological Information

Possible effects on environment : The products are irresolvable naturally and are not harmful to animals, plants and aquatic life.

## 13. Waste Disposal

Trash disposal : It is suggested that the waste be collected to waste-collection station for treatment.

## 14. Transport Information

Regulations on international transportation : No  
U.N. code : No  
Regulations on Domestic transportation : No  
Special transportation method and notice : Avoid distortion caused by extrusion and damage caused by edged tools.

## 15. Regulation Information

Applicable regulation : UL224

## 16. Other Information

NA

<b>Part Number</b>
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HS119
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