

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS**1. Identification of the substance/preparation and of the company/undertaking****1.1 Identification of the substance or preparation:**

Synonyms: Tubing: AP-2000, APTR, AST, AST-FR, AT099, ATUM, BLOX-100, CAPT, C-BLOCK, CBS, CGAT, CGPT, CGTM, CGVT, CPVC, CRN, DCPT, DWP, DWTC, FOIT, FOPT, FTB, FTS, GPO-135, GPT, GPT-FR, GSTB, HCDR, HFR-FR, HSR-HF, HSR-FR, HTAT, HT-SCE, LSTT, LTMS, NT, RAYBLOCK, RAYRIM, RBK-ESS, RBK-GTR, RBK-ILS-85, RBK-ILS-125, RBK-MTS, RBK-VWS, RNF-100, RNF-3000, RP-4800, RPPM, RPS, RT-3, RT-15, RT-102, RT-876, SCL, SRFR, TAT-125, TMS, TMS-SCE, TPDM, TRSA, TUGA, TW-TMS, UWCS, VERSAFIT, WLF-NR400, WMTM, WNTM, ZHS

Moulded Parts Type: -3, -4, -6, -8, -15, -25, -130, PD CAPS, TC-400X

CAS no.	: N.A.	Reference	: RAY/3122E Revision 6
EC index No.	: N.A.	NFPA code	: N.D.
EINECS No.	: N.A.	Molecular weight	: N.A.
RTECS No.	: N.A.	Formula	: N.A.

1.2 Use of the substance or the preparation:

Heat-Shrinkable Polymeric Products

1.3 Company/undertaking identification:

TYCO Electronics
Cheney Manor Industrial Estate
SN2 2QE Swindon, United Kingdom
Tel. : +44 1793 57 38 24
Fax : +44 1793 57 39 53

1.4 Telephone number for emergency:

+32 14 58 45 45
Brandweerinformatiecentrum voor gevaarlijke stoffen (B.I.G.)
Technische Schoolstraat 43A, B-2440 Geel

2. Composition/information on ingredients

Plastic materials may be based on polyethylene and olefin copolymers, chloropolymers, polyamides or silicones. Products may be coated with, or used in conjunction with adhesives/mastics based on polyamides and/or olefin copolymer

For products coated with Tyco Electronics Unicure-225 precatalysed epoxy resin adhesive, refer to supplementary information on Tyco Electronics SDS RAY/3111E

3. Hazards identification

- This Safety Data Sheet applies to a group of products which are not hazardous as supplied in accordance with directives 67/548/EEC and 1999/45/EEC
- Products may emit hazardous thermal decomposition products if overheated or burnt (see section 10.3)

4. First aid measures**4.1 Eye contact:**

- If molten material contacts the eye:
Rinse immediately with plenty of water for 15 minutes
- Consult a doctor/medical service if irritation persists

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

4.2 Skin contact:

- If molten material contacts the skin:
Immediately flush with cold water for 15 minutes
Do not attempt to remove material stuck to the skin
Treat as a burn
- Consult a doctor/medical service

4.3 After inhalation:

- If exposed to fumes from overheated or burnt material:
Remove the victim into fresh air
Keep warm and at rest
- Consult a doctor/medical service if breathing problems develop

4.4 After ingestion:

- Not applicable

5. Fire-fighting measures

5.1 Suitable extinguishing media:

- Water spray
- Polyvalent foam
- ABC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:

- No data available

5.3 Special exposure hazards:

- Toxic decomposition products may be evolved in a fire (see section 10.3)

5.4 Instructions:

- Not applicable

5.5 Special protective equipment for firefighters:

- Self-contained breathing apparatus with full face piece
- Protective clothing for exposure to chemicals

6. Accidental release measures

6.1 Personal protection/precautions: see headings 8.1/8.3/10.3

6.2 Environmental precautions:

- Not applicable

6.3 Clean-up:

- Pick up for continued use or disposal

7. Handling and storage

7.1 Handling:

- Refer to Tyco Electronics product installation instructions
- Avoid overheating the product after shrinkage has occurred
- Stop heating immediately if the product blisters, chars or shows other signs of degradation
- Avoid inhaling fumes which may be released and ventilate the area thoroughly before resuming work
- Avoid contact with molten material
- Wash hands before eating, drinking or smoking
- Practice good standards of personal and industrial hygiene

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

7.2 Storage:

- Store in a dry area
- Store in a cool area
- Product should be stored at temperatures below 40°C to avoid prerecovery of expanded product
- Store in the original packaging
- Keep away from: heat sources

Storage temperature	: < 40	°C
Quantity limits	: N.D.	kg
Storage life	: N.D.	
Materials for packaging	:	
- suitable	: no data available	
- to avoid	: no data available	

7.3 Specific uses:

- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

- Not applicable

Sampling methods:

- No data available

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

- Work under local exhaust/ventilation
- When using gas torches in confined spaces ensure an adequate supply of fresh air to avoid oxygen depletion

8.2.2 Environmental exposure controls: see heading 13

8.3 Personal protection:

8.3.1 respiratory protection:

- Not required for normal conditions of use
- Approved respirator or self contained breathing apparatus for installations in confined/unventilated areas

8.3.2 hand protection:

- Heat resistant gloves if handling hot products after installation
- Suitable materials: No data available
- Breakthrough time: N.D.

8.3.3 eye protection:

- Safety glasses with side shield, goggles or face shield depending on application

8.3.4 skin protection:

- Protective clothing
- Suitable materials: No data available

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	: Plastic tubing and moulded parts
Odour	: Almost odourless
Colour	: Variable in colour

9.2 Important health, safety and environmental information:

pH value	: N.D.	
Boiling point/boiling range	: N.D.	°C
Flashpoint	: N.D.	°C
Explosion limits	: N.D.	vol% (°C)
Vapour pressure (at 20°C)	: N.D.	hPa
Vapour pressure (at 50°C)	: N.D.	hPa
Relative density (at 20°C)	: 0.9/2.2	
Water solubility	: Insoluble	
Soluble in	: N.D.	
Relative vapour density	: N.D.	
Viscosity	: N.D.	Pa.s
Partition coefficient n-octanol/water	: N.D.	
Evaporation rate		
ratio to butyl acetate	: N.D.	
ratio to ether	: N.D.	

9.3 Other information:

Melting point/melting range	: 70/170	°C	(Adhesives)
Auto-ignition point	: N.D.	°C	
Saturation concentration	: N.D.	g/m ³	

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:

- Stable under normal conditions

10.2 Materials to avoid:

- Keep away from: heat sources

10.3 Hazardous decomposition products:

- Thermal decomposition is not significant when products are used in accordance with Tyco Electronics product installation instructions
- At higher temperatures and if materials burn, thermal decomposition products will depend on the base polymer used and may include, but are not limited to : alcohols, aldehydes, carbon monoxide, carbon dioxide, hydrocarbons, hydrogen bromide, hydrogen chloride, silicon dioxide and oxides of nitrogen, phosphorus and sulphur

11. Toxicological information

11.1 Acute toxicity:

LD50 oral rat	: N.D.	mg/kg
LD50 dermal rat	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: N.D.	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

11.2 Chronic toxicity:

EC carc. cat. : not listed
EC muta. cat. : not listed
EC repr. cat. : not listed

Carcinogenicity (TLV) : not listed

IARC classification : not listed

11.3 Routes of exposure: inhalation of thermal decomposition products

11.4 Acute effects/symptoms:

- **AFTER INHALATION**
 - Overheating products during installation may produce vapours/fumes that can cause irritation of the respiratory tract
 - Symptoms may include coughing, headache, dizziness, nausea and in the absence of ventilation, possible asphyxiation
- **AFTER SKIN CONTACT**
 - Contact with molten material may cause thermal burns
- **AFTER EYE CONTACT**
 - Overheating products during installation may produce vapours/fumes that can cause irritation and redness of the eye tissue
- **AFTER INGESTION**
 - Not a normal route of exposure

11.5 Chronic effects:

- None known

12. Ecological information

12.1 Ecotoxicity:

- No data available

12.2 Mobility:

- **Volatile organic compounds (VOC):** N.D.
- Insoluble in water

For other physicochemical properties see heading 9

12.3 Persistence and degradability:

- **biodegradation BOD₅** : N.D. % ThOD
- **water** :
 - Not readily biodegradable in water
 - test: OECD
- **soil** : T_{1/2}: N.D. days

12.4 Bioaccumulative potential:

- log P_{ow} : N.D.
- BCF : N.D.

12.5 Other adverse effects:

- **WGK** : N.D.
- **Effect on the ozone layer** : Not dangerous for the ozone layer (1999/45/EC)
- **Greenhouse effect** : No data available
- **Effect on waste water purification** : No data available

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (75/442/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 07 02 13 (waste plastic)

13.2 Disposal methods:

- Landfill or incinerate at an approved site in accordance with national and local regulations
- Recycle/reuse
- Remove to an authorized dump (Class II)
- For incineration use a high temperature incinerator equipped with secondary combustion chamber and acid gas scrubber
- Do not discharge to wastewater treatment installation

13.3 Packaging/Container:

- No available data

14. Transport information

14.1 Classification of the substance in compliance with UN Recommendations

UN number	:	-
CLASS	:	
SUB RISKS	:	
PACKING	:	
PROPER SHIPPING NAME	:	

14.2 ADR (transport by road)

CLASS	:	NOT SUBJECT
PACKING or CLASSIFICATION CODE	:	
DANGER LABEL TANKS	:	
DANGER LABEL PACKAGES	:	

14.3 RID (transport by rail)

CLASS	:	NOT SUBJECT
PACKING or CLASSIFICATION CODE	:	
DANGER LABEL TANKS	:	
DANGER LABEL PACKAGES	:	

14.4 ADNR (transport by inland waterways)

CLASS	:	NOT SUBJECT
PACKING or CLASSIFICATION CODE	:	
DANGER LABEL TANKS	:	
DANGER LABEL PACKAGES	:	

14.5 IMDG (maritime transport)

CLASS	:	NOT SUBJECT
SUB RISKS	:	
PACKING	:	
MFAG	:	
EMS	:	
MARINE POLLUTANT	:	

14.6 ICAO (air transport)

CLASS	:	NOT SUBJECT
SUB RISKS	:	
PACKING	:	
PACKING INSTRUCTIONS PASSENGER AIRCRAFT	:	
PACKING INSTRUCTIONS CARGO AIRCRAFT	:	

14.7 Special precautions in connection with transport

: Not restricted for any mode of international transport

THERMOFIT HEAT-SHRINKABLE POLYMERIC PRODUCTS

15. Regulatory information

Classification according to directives 67/548/EEC and 1999/45/EC

NOT APPLICABLE

16. Other information

Users are advised that they may have additional disclosure obligations under other national and local laws. Users are advised to ensure that this information is brought to the attention of all employees, agents, and contractors handling this product. Users of Tyco Electronics 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. Distributors of this product are advised to forward this document, or the information contained herein, to every purchaser of this product.

Tyco Electronics makes no warranties as to the accuracy or completeness of this information and disclaims any liability in connection with its use. Tyco Electronics obligations shall be only as set forth in Tyco Electronics standard terms and conditions of sale for this product. In no case will Tyco Electronics be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of this product.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
* = INTERNAL CLASSIFICATION

Exposure limits:

TLV : Threshold Limit Value - ACGIH USA
OES : Occupational Exposure Standards - United Kingdom
MEL : Maximum Exposure Limits - United Kingdom
MAK : Maximale Arbeitsplatzkonzentrationen - Germany
TRK : Technische Richtkonzentrationen - Germany
MAC : Maximale aanvaarde concentratie - The Netherlands
VME : Valeurs limites de Moyenne d'Exposition - France
VLE : Valeurs limites d'Exposition à court terme - France
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium
GWK : Grenswaarde kortstondige blootstelling - Belgium
EC : Indicative occupational exposure limit values - directive 2000/39/EC