

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Heat-Shrinkable Non-Flammable-Retardant Polyolefin Products

MANUFACTURER: CommScope
DIVISION: CommScope
ADDRESS: 8000 Purfoy Road
 Fuquay-Varina, NC 27526

Suppliers: CommScope
 8000 Purfoy Road
 Fuquay-Varina, NC 27526

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

NON-EMERGENCY HEALTH/SAFETY INFORMATION: North America: 1- 888-557-8901

CHEMICAL FAMILY: Cross-linked heat-shrinkable polyolefin products

PRODUCT USE: Typical uses of heat-shrinkable polymeric products include primary electrical insulation, EMI/RFI shielding, cable jacketing and repair, strain relief, waterproofing, cable/pipe identification, corrosion protection, environmental/mechanical protection, and cable joining, splicing, and termination in telecommunications applications.

This product is considered an Article thus it is not regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (1272/2008/EC-Classification, Labelling and Packaging of Substances and Mixtures, 98/24/EC-Chemical Agents at Work, 2001/58/EC-MSDS Content, and 1907/2006/EC-REACH), and an MSDS is not required for this product considering that when used as recommended or intended, or under ordinary conditions, it does not emit a hazardous substance upon drying/curing, and should not present a health and safety exposure or other hazard. If heated, charred, burned, or shredded the health and safety information presented below may apply.

Additional Information

This product is not intended for solvent-containing or extreme temperature or pressure. Please request information if considering non-standard, harsh-conditions or use beyond current product labelling or not covered in the Product Installation Guide.

SECTION 2: HAZARDS IDENTIFICATION GHS

GHS Classification: Not applicable to articles

Health	Environmental	Physical
Acute Toxicity – NL Skin Corrosion/Irritation – NL Eye Corrosion/Irritation – NL Respiratory or Skin Sensitization – NL Mutagenicity – NL Carcinogenicity – NL Reproductive/Developmental – NL Target Organ Toxicity – NL	Aquatic Toxicity – NL	Flammability – NL (Not flammable or combustible)

NL – Not listed. No GHS category corresponds to the low level of hazard anticipated when used under normal conditions.

Note: The Globally Harmonised System (GHS) for Classification of Chemical Substances had not been fully implemented in Canada at the time that this safety data sheet was developed.

GHS Label: As required for Finished Goods according to End-Use Products Regulations

Symbols (Industrial/Commercial Goods Only): Not Applicable	
Hazard Statements Not applicable	Precautionary Statements Not applicable

EMERGENCY OVERVIEW: Heat-Shrinkable Polymeric Products are not hazardous during proper installation but may emit hazardous thermal decomposition and combustion by-products if overheated to degradation*. Base polymer materials include polyethylene and olefin copolymers. Heat-shrinkable products may be coated with or used in conjunction with adhesives/mastics which are based on olefin copolymers or polyamides. Larger products may be coated on their exterior with an acrylic-based temperature sensitive paint which indicates to the installer when sufficient heat has been applied to cause the adhesive to flow.

*For more information thermal decomposition and combustion by-products, refer to Section 10: "Hazardous Decomposition or By-Products."

POTENTIAL HEALTH EFFECTS:

EYES: Contact with molten material may cause thermal burns.

SKIN: This product is not expected to be a skin irritant. Contact with the molten material may cause thermal burns. No harmful effects are expected from skin absorption of this product.

INGESTION: Ingestion of this product is highly unlikely. There is insufficient information available on this material to predict the effects from ingestion.

INHALATION: In common with most organic materials, thermal degradation and combustion by-products may be toxic and should not be inhaled. (See Section 10 for thermal decomposition products).

ACUTE HEALTH HAZARDS:

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

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 is listed by OSHA, NTP, or IARC as suspect carcinogens.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Persons with pre-existing eye, skin, or respiratory disorders (e.g., asthma conditions) may be more susceptible to the effects of these vapors.

Additional Information

None.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:	EC No.:
Not applicable – This polymer is manufactured article consisting of crosslinked, het-shrinkable polyolefins.	NA	ND	NA

NA – Not applicable/ND – Not determined

Additional Information

None.

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 not normally 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.

Additional Information

None.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE/UNSUITABLE EXTINGUISHING MEDIA:

Carbon dioxide, dry chemical, water, or foam.

SPECIAL FIRE FIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:

Firefighters should wear self-contained breathing apparatus with a full face piece 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 Section 10. Do not use water spray on live electrical parts.

SPECIFIC HAZARDS IN CASE OF FIRE:

None known

Additional Information

None known.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear appropriate personal protection when responding, then sweep up and collect in a suitable container for disposal or reuse. See Section 5 if responding to burning or charred materials.

ENVIRONMENTAL PRECAUTIONS:

Sweep up and collect in suitable container for disposal or reuse. Dispose in accordance with all local, state and federal regulations.

SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:

Transfer contaminated waste into approved waste containers. Keep out of sewers, storm drains, surface waters, and soil.

Additional Information

None.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:

HANDLING: For products containing a thermochromic temperature indicator, discontinue heating after the color changes from green to colorless. Avoid any vapors given off if the product is heated to decomposition, as shown by a darkening and browning of the sleeve. 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 CommScope installation instructions and application guides to ensure that installation is performed properly. Ensure that all local requirements/legislation concerning the use of hand-held electrical equipment are observed. Do not touch hot surfaces on installation equipment.

OTHER PRECAUTIONS (e.g.; Incompatibilities):

Avoid heating products beyond temperatures required for normal installation. If product chars or burns, immediately stop heating. Avoid inhaling any fumes, which may be given off under such circumstances. Allow any vapors to disperse and ventilate before continuing work in the area.

Additional Information

None.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:

Follow appropriate installation instructions and applications guide to insure that installation is performed properly. Ensure that any local requirements/legislation concerning the use of open-flame gas torches and working in confined spaces are observed.

Do not touch hot surfaces on installation equipment.

VENTILATION:

In accordance with good industrial hygiene practice, ensure adequate ventilation during installation.

RESPIRATORY PROTECTION:

If installation occurs in a confined, unventilated area, approved respirators are recommended.

EYE PROTECTION:

Safety glasses with side shields are generally recommended during installation and may be related for required for related activities in accordance with the employer's occupational health and safety program.

SKIN PROTECTION:

Not required during normal conditions of use. Consider wearing heat-resistant work gloves and long sleeves to prevent contact with molten material.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Provincial, Federal, CSA standards should be followed. If there is a danger of molten material the skin or eyes, use eye/face protection and heat resistant gloves. If necessary to handle grossly overheated or fire-damaged products, wear natural rubber gloves to prevent possible contact with potentially corrosive inorganic acid residues.

EXPOSURE GUIDELINES & LIMITS:

OSHA	Permissible Exposure Limit (PEL)	NE
ACGIH	Threshold Limit Value (TLV)	NE
Quebec	Permissible Exposure Value (PEV)	NE
Ontario	Occupational Exposure Limit (OEL)	NE
WorkSafe BC	Occupational Exposure Limit	NE
Germany	Maximale Arbeitsplatzkonzentrationen (MAK)	NE
United Kingdom	Workplace Exposure Limit (OES)	NE

TWA – 8-Hour Time Weighted Average/ NE – Not Established

Additional Information

None.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Plastic tubing, wrap-around sleeves, and molded parts in a variety of shapes, sizes and colors.
ODOR:	No odor
ODOR THRESHOLD:	NA
PHYSICAL STATE:	Solid
pH:	NA
BOILING POINT:	NA
MELTING POINT:	Melting points vary. See installation guide.
FREEZING POINT:	NA
VAPOR PRESSURE:	NA
VAPOR DENSITY (AIR = 1):	NA
SPECIFIC GRAVITY (H₂O = 1):	1.2 – 2.0 g/ml
EVAPORATION RATE:	Negligible
SOLUBILITY IN WATER:	Insoluble
FLASH POINT:	NA
AUTO-IGNITION TEMPERATURE:	NA
LOWER EXPLOSIVE LIMIT (LEL):	NA
UPPER EXPLOSIVE LIMIT (UEL):	NA
PARTITION COEFFICIENT:	NA
DECOMPOSITION TEMPERATURE:	Not Available

FLAMMABILITY/HMIS HAZARD CLASSIFICATIONS (US/CN/EU):

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

Additional Information

None.

SECTION 10: STABILITY AND REACTIVITY**STABILITY**

Stable under normal working conditions, at ambient temperature.

INCOMPATIBILITY (MATERIAL TO AVOID):

None Known.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Thermal Degradation and Combustion By-products: In common with most organic materials, degradation and combustion by-products 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 and combustion by-products will depend on the base polymer used, and may include, but are not limited to, carbon monoxide, carbon dioxide, aldehydes, acetic acid, low molecular weight hydrocarbons, and oxides of nitrogen and sulphur.

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID:

Avoid extreme heating that result in product decomposition. No other known conditions to avoid.

Additional Information

None.

SECTION 11: TOXICOLOGICAL INFORMATION**ACUTE TOXICITY (Test Results Basis and Comments):**

No data available.

SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):

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

Additional Information

- No Chronic toxicity data available.
- Not listed as a Carcinogen.

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. Low toxicity expected since products are inert and insoluble in water.

Additional Information

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

SECTION 13: DISPOSAL CONSIDERATIONS
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WASTE DISPOSAL METHOD: Follow local, State/Provincial, and Federal/National regulations applicable to as-used, end of-life characteristics to be determined by end-user. Contact local environmental agency for specific rules and regulations.

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

Proper Shipping Name	Finished Product Not Regulated as Dangerous Goods.		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

AIRCRAFT – ICAO-IATA:

Proper Shipping Name	Finished Product Not Regulated as Dangerous Goods.		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

VESSEL – IMO-IMDG:

Proper Shipping Name	Finished Product Not Regulated as Dangerous Goods.		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

Additional Information

- 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; AICS; and DSL, unless noted otherwise below.

US FEDERAL REGULATIONS:

TSCA Section 8b – Inventory Status: All chemicals comprising this product 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 this product is 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

California Consumer Product Volatile Organic Compound Emissions

This product may be regulated as a Consumer Product for purposes of CARB/OTC VOC Regulations, as-sold for the intended purpose and into the industrial/Commercial supply chain (See Section 12 for VOC information)

CANADIAN AND EUROPEAN REGULATIONS:

Canadian Domestic Substance List (DSL)

All ingredients remaining in the product as distributed into commerce are included on the Domestic Substances List.

WHMIS Classifications

Not Applicable.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Controlled Products Regulations.

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI and/or Ont. Reg. 127/01, however, the finished product is exempt.

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

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 1272/2008/EC-Classification, Labelling and Packaging of Substances and Mixtures and 98/24/EC-Chemical Agents at Work.

Please refer to the GHS Classification and hazard/precaution statements in section 2.

Additional Information

Not Applicable. US, Canada and EEC/EU Directives related to chemical hazards provide exemption of manufactured articles composed of discrete solid structures, and for articles that do not pose a safety or health hazard, or otherwise emit hazardous substances under normal use. When properly used as intended, this product is not expected to present a safety or health hazard when distributed into commerce.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION

This product 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.

REFERENCES:

1. ACGIH (2012), 2010 TLVs and BEIs Based on the Documentation of the Threshold Limit Values and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio.

2. CSST (2012) Laws and Corresponding Regulations of Québec, "Regulation respecting the quality of the work environment, An Act respecting occupational health and safety" (L.R.Q., c. S-2.1, r. 11), La Commission de la Santé et de la Sécurité du Travail du Québec. Updated 1 November 2010.
3. WorkSafeBC (2012), "Occupational Health and Safety Regulation, Section R5.48," WorkSafeBC (British Columbia Ministry of Labour), Vancouver, British Columbia. Updated 20 April 2012.
4. Ontario Ministry of Labour Regulations (2012). Control of Exposure to Biological or Chemical Agents. R.R.O. 1990, Regulation 833, as amended by O. Reg. 149/12. Updated 12 June 2012.
5. European Chemicals Agency (2012), "International Uniform Chemical Information Database (IUCLID)," European Commission. Version 5.4.1, downloaded 30 November 2012.
6. U.S. Department of Labor, Occupational Safety and Health Administration (2012), "Air Contaminants," 29 CFR 1910.1000.
7. Cal-EPA (2012), Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity, 2 November 2012.
8. IARC (2012) "IARC Monographs on the Evaluation of Carcinogenic Risks to Humans," Volumes 1-106, International Agency for Research on Cancer, World Health Organization, Lyon, France. Updated 6 November 2012.
9. United Kingdom Health and Safety Executive (2011), "Table 1: List of approved workplace exposure limits (as consolidated with amendments, October 2007)," Health & Safety Commission, EH40/2005. Updated through 2011.

MSDS/SDS PREPARATION INFORMATION:DATE OF ISSUE: **11 December 2012**SUPERCEDES **7 May 2008****DISCLAIMER:**

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