

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Thermofit S-1125 Adhesive, Parts A and B

MANUFACTURER: TE Connectivity

DIVISION: Aerospace, Defense & Marine

ADDRESS: 300 Constitution Drive

Menlo Park, CA 94025-1164 USA

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: (US) 1-800-522-6752

(CAN) 1-905-475-6222

CHEMICAL FAMILY: Epoxy

PRODUCT USE: This product is a two-part epoxy resin.

This adhesive is intended for use in conjunction with other Raychem products.

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This two-part epoxy resin consists of a viscous grey paste with a pungent odor (Part A) and

a viscous black paste with a very slight epoxy odor (Part B). Avoid personal contact.

Causes skin and eye irritation and burns.

Part A - May cause chemical eye burns. May cause allergic skin reaction. May cause severe skin irritation. Contains a chemical or chemicals which can cause birth defects or

other reproductive harm.

Part B - May cause allergic skin reaction.

OSHA HAZARDS: Irritating, Sensitizing

GHS CLASSIFICATION: Serious eye damage (Category 1A) Parts A

Skin sensitization (Category 1B) Part A Skin irritant (Category 3) Part A & B

GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

PICTOGRAM:

SIGNAL WORD: Danger Warning

HAZARD STATEMENT(S)

H315 Causes skin irritation.

H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H335 May cause respiratory irritation.

PRECAUTIONARY STATEMENT(S):

P261 Avoid breathing vapours

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment

P280 Wear protective gloves/eye protection/face protection.
P302 + P352 If on Skin: Wash with plenty of soap and water.

P304 + P340 If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for

breathing.

P305 + P351 + P338 If In Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if

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present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P331 Do NOT induce vomiting.

P332 + P313 If skin irritation occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container to an approved waste disposal facility.

NFPA HAZARD CLASSIFICATIONS (US/CN/EU):

Part A

HEALTH: 3 FLAMMABILITY: 0 REACTIVITY: 1

Part B

HEALTH: 2 FLAMMABILITY: 0 REACTIVITY: 1

POTENTIAL HEALTH EFFECTS:

The health effects described below refer to the uncured resin, Parts A & B. The information presented below corresponds to the individual components of this product. Toxicity studies have not been performed on the mixture as a whole.

ACUTE HEALTH HAZARDS:

EYES: Part A: This material is corrosive. Direct contact with the product or exposure to vapors or mists can

cause severe burns to the eyes. Symptoms may include cloudy appearance of the cornea, chemical burns, pain, tearing, ulcers, impaired vision, or loss of vision. Direct contact or exposure to vapors or mists may cause stinging, tearing, redness, swelling, corneal damage, and

irreversible eye damage. Persons with pre-existing eye disorders may be more susceptible to the

effects of this material.

Part B: This material is an eye irritant. Direct contact or exposure to vapors or mists may cause stinging,

tearing, redness, swelling, and hazy vision. Persons with pre-existing eye disorders may be more

susceptible to the effects of this material.

SKIN: Part A: Severe Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness,

cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): Signs/symptoms may

include redness, swelling, blistering, and itching.

Part B: This material may cause mild skin irritation. Symptoms of exposure may include localized

redness, swelling, and itching. Allergic Skin Reaction (non-photo induced): Signs/symptoms may

include redness, swelling, blistering, and itching...

SKIN Part A: There is insufficient information available to predict the effects from skin absorption.

ABSORPTION: Part B: There is insufficient information available to predict the effects from skin absorption.

INGESTION: Part A: Ingestion of this product is highly unlikely if used as intended. However, if swallowed in excessive

quantities, this material may cause pain, abdominal tenderness, nausea, diarrhea, blood in

vomits, blood in feces, and gastrointestinal irritation.

Part B: Ingestion of this product is highly unlikely if used as intended. However, if swallowed in excessive

quantities, this material may cause pain, abdominal tenderness, nausea, diarrhea, blood in

vomits, blood in feces, and gastrointestinal irritation.

INHALATION: Part A: Vapors produced during heat curing may cause irritation of the upper respiratory tract. Symptoms

may include soreness of the nose and throat, coughing, and sneezing. Pre-existing lung disorders (e.g., asthma-like conditions) may be aggravated by exposure to this material.

Part B: Vapors produced during heat curing may cause irritation of the upper respiratory tract. Symptoms

may include soreness of the nose and throat, coughing, and sneezing. Pre-existing lung

may include soreness of the nose and throat, coughing, and sneezing. Pre-existing lung disorders (e.g., asthma-like conditions) may be aggravated by exposure to this material.

CHRONIC HEALTH HAZARDS:

Prolonged or repeated exposure to Parts A & B by inhalation may cause Pneumoconiosis: Symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Overheating the material to temperatures above 149°C (300°F) may produce vapors that may cause eye, skin, nose, and throat irritation. Respiratory symptoms associated with pre-existing lung disorders (e.g., asthma-like conditions) may be aggravated by exposure to overheated material.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):		CAS No.:	% by Wt:	EC No.:
Part A:	Amine Terminated Polymer	68911-25-1	40 - 70	NE
	Kaolin*	1332-58-7	30 - 60	310-194-1
	Bis(3-Aminopropyl) Ether of Diethylene Glycol	4246-51-9	7 - 13	224-207-2
Part B:	Bisphenol A/Epichlorohydrin Epoxy Resin	25068-38-6	70-80	NE
	Kaolin*	1332-58-7	20 - 30	310-194-1
	Carbon Black*	1333-86-4	1	215-609-9

^{*}The Carbon Black and Kaolin are physically bound within the resin matrix

NA – Not applicable/NE – Not Established/ND – Not determined

SECTION 4: FIRST AID MEASURES

This product is a two-part epoxy resin. The first aid statements described below refer to exposure to Part A or Part B of the uncured resin.

EYE CONTACT: Hold eyelids apart and flush affected eye(s) immediately with clean water for at least 15 minutes.

Seek immediate medical attention.

SKIN CONTACT: Flush skin with plenty of water and wash affected area(s) with mild soap and water. Remove

contaminated clothing and wash before reuse. Thoroughly clean shoes before reuse. If irritation

persists or allergic symptoms develop, seek medical attention.

INGESTION: Not a normal route of exposure. DO NOT induce vomiting. If victim is conscious and alert,

immediately rinse mouth with water and dilute the ingested material by giving one glass of water to

drink. Seek immediate medical attention.

INHALATION: If respiratory symptoms or other symptoms of exposure develop, move victim to fresh air and seek

medical attention. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention. If victim is not breathing, move to fresh air and immediately begin artificial respiration. Keep victim warm and quiet; seek immediate medical

attention.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: Part A: >240°C (>464°F) Part B: >240°C (>464°F)

METHOD USED: Part A: Not Available Part B: Not Available

FLAMMABLE LIMITS

UPPER FLAMMABILITY LIMIT (% BY VOLUME): Not established LOWER FLAMMABILITY LIMIT (% BY VOLUME): Not established

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 operated in the positive pressure demand mode when fighting fires. Use water spray to cool nearby containers and structures exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Part A: Closed containers exposed to heat from fire may build pressure and explode.

SPECIFIC HAZARDS IN CASE OF FIRE:

None Known

HAZARDOUS COMBUSTION PRODUCTS:

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Degradation and combustion by products may be toxic and should not be inhaled. Thermal degradation is not significant at temperatures achieved during proper application, as directed by product instructions. If the products are exposed to excessive heat or most significantly if the products are burned, the thermal degradation products may include, but are not limited to, carbon monoxide, carbon dioxide, nitrogen compounds, amine compounds, acids, aldehydes, toxic vapors, gases, or particulates.

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:

For larger spills: Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Sweep up and collect in a suitable container for disposal.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:

Handling: Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Application of adhesive (Parts A and B) should be done in a well-ventilated area in accordance with good industrial hygiene practice. Parts A and B release heat when combined.

Storage: Store in a cool, dry, well-ventilated area.

OTHER PRECAUTIONS (e.g.; Incompatibilities):

Heating resin above 149°C (300°F) in the presence of air may cause slow oxidative decomposition. Above 260°C (500°F) polymerization may occur. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. Do not breathe fumes.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:

None required under normal use conditions.

VENTILATION:

Provide general or local exhaust ventilation systems

RESPIRATORY PROTECTION:

Avoid breathing of vapors, mists or spray. If ventilation is inadequate to keep airborne concentrations below the established exposure limits, the use of respiratory protection is recommended. Depending on the airborne concentration of material, a NIOSH/MSHA-approved air purifying respirator with a combination organic vapor/HEPA cartridge is recommended. Thermal degradation is possible at excessive temperatures; therefore, NIOSH/MSHA-approved air-supplied respirators are recommended.

EYE PROTECTION:

Use safety glasses with side shield or goggles to prevent contact.

SKIN PROTECTION:

Avoid prolonged or repeated contact with skin. Wear rubber gloves to prevent or minimize contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

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EXPOSURE GUIDELINES & LIMITS:

There are no exposure limits applicable to this product as supplied or used.

Part A and B: KAOLIN (Bound in Matrix)

15 mg/m³ (total dust)

5 mg/m³ (resperable

OSHA Permissible Exposure Limit (PEL/TWA) fraction)

ACGIH Threshold Limit Value (TLV) 10 mg/m³ (inhalable

fraction)

2 mg/m³ (resperable

fraction)

10 mg/m³ (inhalable)

Ontario Occupational Exposure Level (OEL) 3 mg/m³ (resperable)

Germany Maximale Arbeitsplatzkonzentrationen (MAK) Not established
United Occupational Exposure Standard (OES) Not established

Kingdom

Part B: CARBON BLACK (Bound in Matrix)

OSHA Permissible Exposure Limit (PEL/TWA) 3.5 mg/m3

ACGIH Threshold Limit Value (TLV) 3.5 mg/m3

Ontario Occupational Exposure Level (OEL) 3.5 mg/m3

Germany Maximale Arbeitsplatzkonzentrationen (MAK) Not established

United Occupational Exposure Standard (OES) Not established

Kingdom

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Part A: Viscous grey paste

Part B: Viscous black paste

ODOR: Part A: Pungent odor.

Part B: Very slight epoxy odor.

ODOR THRESHOLD: Part A: Not determined

Part B: Not determined

PHYSICAL STATE: Part A: Viscous liquid/paste

Part B: Viscous liquid/paste

pH: Part A: Not determined

Part B: Not determined

BOILING POINT: Part A: >150°C (>302°F)

Part B: >150°C (>302°F)

MELTING POINT: Part A: Not determined

Part B: Not determined

FREEZING POINT: Part A: Not determined

Part B: Not determined

VAPOR PRESSURE (mmHg @ 25°C): Part A: Not determined

Part B: Not determined

VAPOR DENSITY (AIR = 1): Part A: Not determined

Part B: Not determined

SPECIFIC GRAVITY (H2O = 1): Part A: 1.26

Part B: 1.33

EVAPORATION RATE Part A: Not determined

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(Butyl acetate=1): Part B: Not determined

SOLUBILITY IN WATER: Part A: Insoluble

Part B: Insoluble

FLASH POINT: Part A: Not established

Part B: Not established

AUTO-IGNITION TEMPERATURE: Part A: Not established

Part B: Not established

LOWER EXPLOSIVE LIMIT (LEL): Part A: Not established

Part B: Not established

UPPER EXPLOSIVE LIMIT (UEL): Part A: Not established

Part B: Not established

PARTITION COEFFICIENT: Part A: Not determined

Part B: Not determined

VISCOSITY (centipoise @ 25° C): Part A: 40000 - 80000

Part B: 75000 - 150000

DECOMPOSITION TEMPERATURE: Part A: Not determined

Part B: Not determined

SECTION 10: STABILITY AND REACTIVITY

STABILITY: This product is stable under normal conditions, at ambient temperature.

INCOMPATIBILITY (MATERIAL TO AVOID): Uncured resins may react exothermically (release heat) with acids,

bases, and strong oxidizing agents.

HAZARDOUS DECOMPOSITION OR BY-

PRODUCTS:

See Section 5: FIRE FIGHTING MEASURES (Hazardous Combustion

Products).

HAZARDOUS POLYMERIZATION: Will not occur. No known polymerization conditions to avoid.

CONDITIONS TO AVOID: Avoid excessive heat for prolonged periods of time. Do not cure a mass

large than 50 grams in a confined space, as this may cause a reaction

generating intense heat and smoke.

SECTION 11: TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY

Skin absorption may occur, but there is insufficient evidence to predict the effects resulting from this route of exposure. Eye contact may also occur. Inhalation of vapors may occur during heat cuing of the product. Ingestion is unlikely to occur in normal use.

ACUTE TOXICITY (Test Results Basis and Comments):

Part A causes severe eye burns and mild skin irritation. Part B causes skin and eye irritation. Inhalation of heated product (Part A or Part B) may cause irritation of the upper respiratory tract.

Information below refers only to the principal component of each Part of this product.

LD₅₀ / LC₅₀: Part A: Amine Terminated Polymer: Not Available

Part B: Bisphenol A/Epichlorohydrin Epoxy Resin: LD50 (rat, acute oral): 11.4 g/kg

LD₅₀ (mouse, acute oral): 15.6 g/kg LD₅₀ (rabbit, acute dermal): >20 mL/kg

Kaolin*: LD₅₀ (rat, oral): >5 g/kg

Carbon Black*: LD₅₀ (rat, oral): >15400 mg/kg LD₅₀ (rabbit, dermal): >3 g/kg

*Note: While the toxicological data provided above have been obtained for kaolin and carbon black, these materials are bound within the resin matrix of the product and are not available for exposure.

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SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):

Both Part A and Part B are potential sensitizers.

IRRITANCY OF PRODUCT: Vapors from the heated product may cause irritation of the eyes, skin, nose, and throat.

SENSITIZATION TO MATERIAL: Not known.

CARCINOGENICITY:

<u>Part A:</u> The ingredients of this product, present at equal to or greater than 0.1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.

Part B: Carbon Black is classified by IARC as possibly carcinogenic to humans (Group 2B), when resperable.

REPRODUCTIVE TOXICITY: None known.

TERATOGENICITY: None known.

MUTAGENICITY:

Part A: None know.

<u>Part B</u>: A component of Part B of this product (Bisphenol A/Epichlorohydrin Epoxy Resin) is positive in *in vitro* microbial mutagenicity screening tests, and has produced chromosomal aberrations in cultured rat liver cells. It has, however, proven to be inactive when tested in *in vivo* mutagenicity assays. (Note: Mutagenicity assays are a means to identify if a chemical may cause changes in the genetic material (DNA) of a cell.) What these findings mean to humans is uncertain.

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None known

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

Treatment, storage, and disposal must be in accordance with applicable, federal, state,

METHOD: provincial, and local regulations.

HAZARDOUS WASTE
CLASS/CODE:

Dispose of completely cured (or polymerized) wastes in a sanitary landfill.

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

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

Proper Shipping Name Not regulated per U.S. DOT

Hazard Class NA ID Number NA Packing Group NA Labels NA

AIRCRAFT - ICAO-IATA:

Proper Shipping Name Not regulated per U.S. IATA

Hazard Class NA ID Number NA
Packing Group NA Labels NA

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VESSEL - IMO-IMDG:

Proper Shipping Name Not regulated per U.S. IMO

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 in US as-shipped per IMO/IMDG.
- For shipments of Part B in the EU:

ADR: UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Epoxy Resin), 9, III, M6

IMDG: UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Epoxy Resin), 9, III, EmS:F-A, S-F

IATA: UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Epoxy Resin), 9, III

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 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:

Chemical CAS # None NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

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

Chemical CAS # 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.

 Chemical
 CAS #
 % wt

 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 Yes
Delayed Hazard Yes

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:

 Chemical None
 CAS # NA
 % Wt NA

INTERNATIONAL REGULATIONS (Non-US):

Canadian Domestic Substance List (DSL)

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

WHMIS Classifications

Information below refers only to the principal component of each Part of this product.

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Part B: Bisphenol A/Epichlorohydrin Epoxy Resin

D2B Toxic Material Causing Other Toxic Effects (skin sensitization in animals).

Part B: Carbon Black (Bound in Matrix)

D2A Very Toxic Material Causing Other Toxic Effects carcinogenicity: IARC group 2B

This product has 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

This product contains the following chemicals subject to the reporting requirements of Canada NPRI and/or Ont. Reg. 127/01:

 Chemical
 CAS #
 % Wt

 Carbon Black*
 1333-86-4
 1

 Bisphenol A/Epichlorohydrin Epoxy Resin
 25068-38-6
 70-80

European Inventory of Existing Commercial Chemical Substances (EINECS)

This chemical substance is not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances.).

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

Information below refers only to the principal component of each Part of this product.

<u>R-Phrases</u> <u>S-Phrases</u>

R41 Risk of serious damage to eyes. S24 Avoid contact with skin.

R38 Irritating to skin. S37/39A Wear suitable gloves and eye protection. R43 May cause sensitisation by skin contact. S26 In case of contact with eyes, rinse immediately with

plenty of water and seek medical advice.

Additional 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, 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 SDS: TE Connectivity, Menlo Park **Contact:** Dov Nitzan, Materials Development Engineer

Tel: 001 650 361 2230 Email: dov.nitzan@te.com

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