



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DCC Grease (with or without blue colouring) **RAY4554**
SYNONYMS: Discharge Control Compound

MANUFACTURER: TE Connectivity Ltd.
DIVISION: TE Connectivity Energy Division
ADDRESS: 2901 Fulling Mill Road
Middletown, PA 17057-3163

SUPPLIERS TE Connectivity Canada Ltd.
20 Esna Park Drive
Markham, Ontario L3R 1E1

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: North America: 1-800-327-6996

CHEMICAL FAMILY: This is a fluorosilicone grease containing polytetrafluoroethylene (PTFE).

PRODUCT USE: Non-Consumer Silicone-based Grease. This finished product provides a silicone-based grease in a viscous suspension with an as-designed, intended-use consisting of direct end-use application, such as for preventing electrical charge build-up. For more information on proper use, refer to the TE Connectivity Product Use Instructions that accompany the product.

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, or burned the health and safety information presented below may apply.

Additional Information

This product is not intended for solvent-containing or extreme temperature or pressure environments (see Section 7). Please request information if considering use beyond current product labelling or not covered in the Product Use Guide.

SECTION 2: HAZARDS IDENTIFICATION

GHS Classifications: None applicable to articles

Health Hazards Acute Toxicity – 5 (Based on PTFE) Skin Corrosion/Irritation – NL Eye Corrosion/Irritation – NL Respiratory or Skin Sensitization – NL Mutagenicity – NL Carcinogenicity – NL	Reproductive/Developmental – NL Target Organ Toxicity – NL Physical Hazards Flammability – NL (Not flammable or combustible)	Environmental Hazards Aquatic Toxicity – NL
---	--	---

NL – Not listed. No GHS category corresponds to the low level of hazard anticipated.

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



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

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

Symbols (Industrial/Commercial Goods Only): Not Applicable

Hazard Statements	Precautionary Statements
Contact with residues from fires can cause irritation or burns. Breathing smoke from overheated/burning material can cause polymer fume fever.	Avoid Contact with Mucous Membranes, Eyes, or Oral Cavity. Do Not Inhale Vapours/Fumes or Particulates. Wash hands before eating or smoking.

EMERGENCY OVERVIEW:

At temperatures above 300 degrees F (149°C), toxic fluorine gases and highly toxic vapors of trifluoropropionaldehyde may be formed. This product may cause immediate or delayed eye irritation. Direct contact with the product may cause stinging, tearing, redness, and swelling of the eye. If eye irritation occurs, hold eyelids apart and flush affected eye(s) immediately with clean water for at least 15 minutes. Seek medical attention. In case of skin contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. If irritation develops and persists, seek medical attention. Wash clothing before reuse. No harmful effects are expected from skin absorption.

Note: For more information on thermal decomposition and combustion by-products, refer to Section 10.

POTENTIAL HEALTH EFFECTS:

EYES: This product may cause immediate or delayed eye irritation. Direct contact with the product may cause stinging, tearing, redness, and swelling. Persons with pre-existing eye disorders may be more susceptible to the effects of this material.

SKIN: This product may cause mild skin irritation. Persons with pre-existing skin conditions may be more susceptible to the effects of this material. No harmful effects are expected from skin absorption of this product.

INGESTION: Ingestion of this product is highly unlikely. Oral toxicity has not been determined for this product.

INHALATION: Because of the low volatility of this product, exposure to vapours is unlikely. Smokers should avoid contamination of tobacco products with this material. Smoking tobacco products contaminated with this material may cause polymer fume fever, a temporary flu-like illness with fever, chills, and sometimes cough of approximately 48 hours duration. See Section 10 for Thermal Degradation products (if overheated).

ACUTE HEALTH HAZARDS:

Repeated or prolonged contact may cause mild skin irritation.

CHRONIC HEALTH HAZARDS:

This product's ingredients, present at equal to or greater than 0.1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Persons with skin, eye, or respiratory conditions (such as asthma) may be at greater risk for irritation if exposed to thermal decomposition products due to overheating of product.

Additional Information

None.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:	EC No.:
Polytetrafluoroethylene (PTFE)	9002-84-0	30-50	NE
Poly-3,3,3-trifluoropropyl-methylsiloxane	63148-56-1	55-75	NE
Blue colouring (non-hazardous)	Proprietary	<1	NE

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

Additional Information

These ingredients reflect components of the finished product related to performance of the product as distributed into commerce.



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

SECTION 4: FIRST AID MEASURES

- EYE CONTACT:** Hold eyelids apart and flush eye(s) immediately with plenty of clean water for at least 15 minutes.
- SKIN CONTACT:** Immediately wash affected area(s) with mild soap and water. Remove contaminated clothing and shoes. If irritation develops, seek medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- INGESTION:** Ingestion of this lubricant is highly unlikely. Never give fluids or induce vomiting if patient is unconscious or having convulsions. To conscious individual give one cup of water to dilute ingested material. If swallowed and symptoms develop, seek 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, qualified personnel should administer oxygen. 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.

Additional Information

Note to physician: Individual exhibiting symptoms consistent with polymer fume fever should be removed from any further exposure to overheated fluoropolymer pending specific medical evaluation by an occupational medicine specialist.

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE/UNSUITABLE EXTINGUISHING MEDIA:

Use media suitable for the surrounding fire: Water spray, Polyvalent foam, Dry chemical powder, or Carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:

Firefighters should wear self-contained breathing apparatus with a full-face piece 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:

See decomposition products listed in Section 10.

SPECIFIC HAZARDS IN CASE OF FIRE:

None known

Additional Information

None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Wear chemical safety goggles, rubber boots and rubber neoprene or nitrile gloves. Respiratory protection may be required if spill is overheated greater than 300°F (149°C). Sweep up, place in bag & hold for waste disposal. Clean area as appropriate since some silicone materials, even in small quantity, may present a slip hazard.

ENVIRONMENTAL PRECAUTIONS:

Prevent spilled material from entering sewers and waterways.

SPILL CONTAINMENT & CLEANUP METHODS/MATERIALS:

Add absorbent to spill area. Sweep or shovel spilled material and absorbent and place in approved container.

Additional Information

None.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING AND STORAGE:

HANDLING: Avoid contact with eyes, skin and clothing. Avoid any vapours given off if the product is overheated to decomposition. Do not consume food, beverages or tobacco in the immediate work area. Wash hands before eating, drinking or smoking. Avoid contact with residues from fire damaged products (see Section 10)

STORAGE: Store in closed containers in a cool, dry, well-ventilated area. Do not store food, drink, or tobacco in areas where



SAFETY DATA SHEET

RAY4554

(US, CN, EU Version for International Trade)

they may become contaminated with this product.

INSTALLATION: Follow appropriate TE Connectivity 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. 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 vapours to disperse and ventilate before continuing work in the area.

OTHER PRECAUTIONS (e.g.; Incompatibilities):

Other Precautions: If it is necessary to handle overheated or fire-damaged products, wear heat-resistant and natural rubber gloves to prevent possible contact with potentially corrosive inorganic acid residues.

Additional Information

None.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/SYSTEM DESIGN INFORMATION:

Use adequate enclosures, machine guarding if products are shredded for recycling

VENTILATION:

In accordance with good industrial hygiene practice, ensure adequate ventilation during application, particularly in enclosed areas. Provide mechanical ventilation if material is to be heated above 149 °C (300 °F)

RESPIRATORY PROTECTION:

Not required for normal conditions of use. When used in an adequately ventilated area and under normal conditions of use, respiratory protection is not required. At temperatures higher than 149°C (300°F), or most significantly if the product burns, thermal degradation is possible and, therefore, NIOSH approved air-supplied respirators are recommended for unknown concentrations of thermal degradation products.

EYE PROTECTION:

Use of appropriate safety eyewear is suggested.

SKIN PROTECTION:

Use gloves to prevent contact, as appropriate to the given operation.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

None required under normal use conditions.

EXPOSURE GUIDELINES & LIMITS:

OSHA	Permissible Exposure Limit (PEL)	NE	
ACGIH	Threshold Limit Value (TLV)	NE	
Quebec	Permissible Exposure Value (PEV)	Polytetrafluoroethylene decomposition products, expressed as Fluorides (F)	2.5 mg/m ³
Ontario	Occupational Exposure Level (OEL)	NE	
Netherlands	Maximaal Aanvaarde Concentratie (MAC)	NE	
Germany	Maximale Arbeitsplatzkonzentrationen (MAK)	NE	
United Kingdom	Occupational Exposure Standard (OES)	NE	
TWA – 8-Hour Time Weighted Average/ NE – Not Established			

Additional Information

- Not Included as International Trade.
- May be required to meet Domestic Requirements for a Specific Destination(s).
- Decomposition products do not occur unless exposed to flame or elevated temperatures over 149° C (300° F).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Light blue or off-white waxy grease
ODOR:	Odourless
ODOR THRESHOLD:	NA
PHYSICAL STATE:	Grease, Semisolid
pH:	NA
BOILING POINT:	> 316° C (>600° F)
MELTING POINT:	NA



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

FREEZING POINT: NA
VAPOR PRESSURE: Nil
VAPOR DENSITY (AIR = 1): NA
SPECIFIC GRAVITY (H₂O = 1): 1.45
EVAPORATION RATE: NA
SOLUBILITY IN WATER: <1
FLASH POINT: > 101 °C (>214 °F)
AUTO-IGNITION TEMPERATURE: NA
LOWER EXPLOSIVE LIMIT (LEL): NA
UPPER EXPLOSIVE LIMIT (UEL): NA
PARTITION COEFFICIENT: NA
VISCOSITY (poise @ 25° C): ND
Decomposition Temperature: 149 °C (300 °F)

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

HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0

Additional Information

The NFPA rating is 2–1–0, based on health effects of combustion by-products.

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal working conditions, at ambient temperature.
INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Thermal degradation and combustion by-products may include, but are not limited to carbon dioxide, carbon monoxide, traces of incompletely burned carbon compounds, fluorine compounds, hydrogen fluoride, perfluorohydrocarbons, trifluoropropionaldehyde, silicon dioxide and formaldehyde. Thermal degradation and combustion products are likely to be irritating or toxic and should not be inhaled. See Section 2 for the Potential Health Effects of inhalation.
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: Store away from oxidizers. Do not overheat product above 149°C (300 °F).

Additional Information

None.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (Test Results Basis and Comments):

Polytetrafluoroethylene (PTFE): Oral, rat LD₅₀: 1000 mg/kg. No inhalation toxicity data available.

SUBCHRONIC/CHRONIC TOXICITY (Test Results and Comments):

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, 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 due to low solubility.



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

Additional Information

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

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Follow local, Provincial, Federal regulations and local by-laws 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 finished product as manufactured for distribution into commerce.
CN – Not applicable to finished product as manufactured for distribution into commerce.
EC – Not applicable to finished product 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	Synthetic Grease - Finished Product Not Regulated as Dangerous Goods		
Hazard Class	NA	ID Number	NA
Packing Group	NA	Labels	NA

AIRCRAFT – ICAO-IATA:

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

VESSEL – IMO-IMDG:

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

Additional Information

- Transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped.
- 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.

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: The finished product does not contain chemicals subject to TSCA Section 12b export notification.

Chemical
None

CAS #
NA

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

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

Chemical

CAS #



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

None NA

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

The finished product contains chemicals subject to the reporting requirements of Section 313 of SARA Title III; however, the finished product is exempt.

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

CERCLA SECTION 311/312 HAZARD CATEGORIES: Note that the finished 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 finished 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 is not regulated as a Consumer Product for purposes of CARB VOC Regulations, as-sold for the intended purpose and into the industrial/Commercial supply chain.

CANADIAN AND EUROPEAN REGULATIONS:

Canadian Domestic Substance List (DSL)

All ingredients remaining in the finished 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 finished 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 Classifications and hazard/precaution statements in Section 2.

<u>Additional Information</u>
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. On this basis, EEC/EU H-Phrases/P-Phrases are not specifically included for the ingredients in the finished product.

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.



SAFETY DATA SHEET
RAY4554
(US, CN, EU Version for International Trade)

REFERENCES

1. ACGIH (2012), 2012 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 (2013) 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. 15), La Commission de la Santé et de la Sécurité du Travail du Québec. Updated 1 April 201.
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 (2012). Control of Exposure to Biological or Chemical Agents. R.R.O. 1990, Regulation 833, as amended by O. Reg. 149/12. 12 June 2012.
5. U.S. Department of Labor, Occupational Safety and Health Administration (2013), "Air Contaminants," 29 CFR 1910.1000.
6. Cal-EPA (2013), Safe Drinking Water and Toxic Enforcement Act of 1986, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity, Proposition 65 list dated April 11, 2013.
7. IARC (2013) "IARC Monographs on the Evaluation of Carcinogenic Risks to Humans," International Agency for Research on Cancer, World Health Organization, Lyon, France.
8. United Kingdom Health and Safety Executive (2013), "Table 1: List of approved workplace exposure limits (as consolidated with amendments, 2011)," Health & Safety Commission, EH40/2005.

MSDS/SDS PREPARATION INFORMATION:

DATE OF ISSUE: **17 April 2013**

SUPERCEDES: **25 October 2010**

DISCLAIMER:

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

The information presented herein was prepared at TE Connectivity by qualified technical personnel, and to our knowledge it is true and accurate. The information and recommendations are furnished for this product with the understanding that the purchaser/user will independently determine the suitability of the product for this purpose. The data do not constitute a warranty, expressed or implied, statutory or otherwise, nor are they a representation for which TE Connectivity Ltd. assumes legal responsibility. The data are submitted for the user's information and consideration only. Any use of this product must be determined by the user to be in accordance with the applicable federal, State/Provincial, and local laws and regulations.

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 TE Connectivity Ltd. 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.

END