Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier
3M™ Dyneon™ Fluoroplastic THV 815GZ

Product Identification Numbers
97-5000-1338-4, 97-5000-1546-2, 98-0213-2316-1, 98-0213-2317-9, 98-0213-2318-7, 98-0213-2773-3
7100090848, 7000059206, 7010402461

1.2. Recommended use and restrictions on use

Recommended use
Fluoropolymer for industrial proecessing

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Advanced Materials Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements
Signal word
Not applicable.

Symbols
Not applicable.

Pictograms
Not applicable.

Supplemental Information:
May cause thermal burns. The health hazards of this material are not completely known. See the SDS.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Perfluoropropanoic acid (unintentional impurity)	422-64-0	<= 0.0000525
Perfluoro-3-methoxypropanoic acid (unintentional impurity)	377-73-1	<= 0.000047
Hexafluoropropylene oxide dimer acid (unintentional impurity)	13252-13-6	<= 0.00000025
Perfluorobutanoic acid (unintentional impurity)	375-22-4	<= 0.00000019
Perfluorohexanoic acid (unintentional impurity)	307-24-4	<= 0.00000014
Perfluorooctanoic acid (unintentional impurity)	335-67-1	<= 0.00000012
Perfluorononanoic acid (unintentional impurity)	375-95-1	<= 0.00000011
Perfluorodecanoic acid (unintentional impurity)	335-76-2	<= 0.00000008
Perfluorododecanoic acid (unintentional impurity)	307-55-1	<= 0.00000005
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	<= 0.00000003
Hexafluoropropylene-Perfluoropropyl vinyl ether-Tetrafluoroethylene-Vinylidene Fluoride Copolymer	68182-34-3	100

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately flush skin with large amounts of cold water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Cover affected area with a clean dressing. Get immediate medical attention.

Eye Contact:
Immediately flush eyes with large amounts of water for at least 15 minutes. DO NOT ATTEMPT TO REMOVE MOLTEN MATERIAL. Get immediate medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
No critical symptoms or effects. See Section 11.1, information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
Exposure to extreme heat can give rise to thermal decomposition.

5.3. Special protective actions for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Observe precautions from other sections.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid eye contact. Do not breathe thermal decomposition products. Avoid skin contact with hot material. For industrial/occupational use only. Not for consumer sale or use. Store work clothes separately from other clothing, food and tobacco products. Avoid skin contact. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to the formation of hazardous decomposition products.

7.2. Conditions for safe storage including any incompatibilities
No special storage requirements.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Perfluorooctanoic acid (unintentional impurity)	335-67-1	Manufacturer determined	TWA:0.01 mg/m3	SKIN

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Provide appropriate local exhaust ventilation on open containers. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Local exhaust required above 400 C.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety Glasses with side shields

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Neoprene
Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - Neoprene
Apron - polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use a positive pressure supplied-air respirator.
Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

Thermal hazards
Wear heat insulating gloves, indirect vented goggles, and a full face shield when handling hot material to prevent thermal burns.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Solid
Color	Colorless, White
Specific Physical Form:	Pellets
Odor	Slight Odor
Odor threshold	*No Data Available*

pH	*Not Applicable*
Melting point	210 - 230 ºC
Boiling Point	*Not Applicable*
Flash Point	No flash point
Evaporation rate	*Not Applicable*
Flammability (solid, gas)	Not Classified
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Vapor Pressure	*Not Applicable*
Vapor Density	*Not Applicable*
Density	2 - 2.1 g/cm3 [@ 23 ºC]
Specific Gravity	2 - 2.1 [@ 23 ºC] [*Ref Std:*WATER=1]
Solubility in Water	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
Molecular weight	*No Data Available*
Volatile Organic Compounds	*Not Applicable*
Percent volatile	*Not Applicable*
VOC Less H2O & Exempt Solvents	*Not Applicable*

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
None known.

10.5. Incompatible materials
Alkali and alkaline earth metals

10.6. Hazardous decomposition products

Substance	Condition
Carbonyl Fluoride	At Elevated Temperatures
Carbon monoxide	At Elevated Temperatures
Carbon dioxide	At Elevated Temperatures
Hydrogen Fluoride	At Elevated Temperatures
Perfluoroisobutylene (PFIB)	At Elevated Temperatures
Toxic Vapor, Gas, Particulate	At Elevated Temperatures

If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient

classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
During heating:
Polymer Fume Fever: Sign/symptoms may include chest pain or tightness, shortness of breath, cough, malaise, muscle aches, increased heart rate, fever, chills, sweats, nausea and headache.

Skin Contact:
During heating: Thermal Burns: Signs/symptoms may include intense pain, redness and swelling, and tissue destruction.

Eye Contact:
During heating: Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Ingestion:
No information available.

Carcinogenicity:

Ingredient	CAS No.	Class Description	Regulation
Perfluorooctanoic acid	335-67-1	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Additional Information:
The health hazards of this material are not completely known. Conservative safe handling measures should be followed (as described in sections 7 and 8), and appropriate first aid measures (as described in section 4) should be taken if exposure occurs.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Perfluoropropanoic acid (unintentional impurity)	Ingestion		LD50 estimated to be 300 - 2,000 mg/kg
Perfluoropropanoic acid (unintentional impurity)	Inhalation-Vapor (4 hours)	Rat	LC50 > 11 mg/l
Perfluorohexanoic acid (unintentional impurity)	Ingestion	Rat	LD50 500-1000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation
For the component/components, either no data are currently available or the data are not sufficient for classification.

Serious Eye Damage/Irritation
For the component/components, either no data are currently available or the data are not sufficient for classification.

Skin Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Respiratory Sensitization
For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Perfluoropropanoic acid (unintentional impurity)	In Vitro	Not mutagenic

Carcinogenicity
For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Perfluorohexanoic acid (unintentional impurity)	Ingestion	Not classified for reproduction and/or development	Rat	LOEL 500 mg/kg	
Perfluorohexanoic acid (unintentional impurity)	Ingestion	Not classified for male reproduction	Rat	LOAEL 500 mg/kg	not applicable

Target Organ(s)

Specific Target Organ Toxicity - single exposure
For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Perfluoropropanoic acid (unintentional impurity)	Ingestion	liver | heart | endocrine system | hematopoietic system | kidney and/or bladder	Not classified	Rat	NOAEL 320 mg/kg/day	28 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Prior to disposal, consult all applicable authorities and regulations to insure proper classification. Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include HF. Facility must be capable of handling halogenated materials. If no other disposal options are available, waste product may be placed in a landfill properly designed for industrial waste.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

This material contains one or more substances that are subject to a TSCA Consent Order. Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Not applicable

Health Hazards
Not applicable

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Perfluoropropanoic acid (unintentional impurity)	422-64-0	<= 0.0000525
Perfluoro-3-methoxypropanoic acid (unintentional impurity)	377-73-1	<= 0.000047
Hexafluoropropylene oxide dimer acid (unintentional impurity)	13252-13-6	<= 0.00000025
Perfluorobutanoic acid (unintentional impurity)	375-22-4	<= 0.00000019
Perfluorohexanoic acid (unintentional impurity)	307-24-4	<= 0.00000014
Perfluorooctanoic acid (unintentional impurity)	335-67-1	<= 0.00000012
Perfluorononanoic acid (unintentional impurity)	375-95-1	<= 0.00000011
Perfluorodecanoic acid (unintentional impurity)	335-76-2	<= 0.00000008
Perfluorododecanoic acid (unintentional impurity)	307-55-1	<= 0.00000005
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	<= 0.00000003

This material contains a chemical which requires export notification under TSCA Section 12[b]:

Ingredient (Category if applicable)	C.A.S. No	Regulation	Status
Hexafluoropropylene oxide dimer acid (unintentional impurity)	13252-13-6	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable
Perfluorododecanoic acid (unintentional impurity)	307-55-1	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable
Perfluorooctanoic acid (unintentional impurity)	335-67-1	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable
Perfluorodecanoic acid (unintentional impurity)	335-76-2	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable
Perfluorononanoic acid (unintentional impurity)	375-95-1	Toxic Substances Control Act (TSCA) 5 SNUR or Consent Order Chemicals	Applicable
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	Toxic Substances Control Act (TSCA) 5	Applicable

SNUR or Consent Order Chemicals

This material contains a chemical regulated by an EPA Significant New Use Rule (TSCA Section 5)

Ingredient (Category if applicable)	C.A.S. No	Reference
Perfluorododecanoic acid (unintentional impurity)	307-55-1	40 CFR 721.10536
Perfluorooctanoic acid (unintentional impurity)	335-67-1	40 CFR 721.10536
Perfluorodecanoic acid (unintentional impurity)	335-76-2	40 CFR 721.10536
Perfluorononanoic acid (unintentional impurity)	375-95-1	40 CFR 721.10536
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	40 CFR 721.10536

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 3 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

The NFPA Health code of 3 is due to emergency situations where the material may thermally decompose and release Hydrogen Fluoride and Perfluoroisobutylene (PFIB). During normal use conditions, please reference Section 2 and Section 11 of the SDS for additional health hazard information.

HMIS Hazard Classification

Health: 0 **Flammability:** 1 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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