



## Material Safety Data Sheet

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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 3M™ Dyneon™ FKM Compound FEC-57342A

**MANUFACTURER:** 3M

**DIVISION:** Energy and Advanced Materials Division

**ADDRESS:** 3M Center, St. Paul, MN 55144-1000

**EMERGENCY PHONE:** 1-800-364-3577 or (651) 737-6501 (24 hours)

**Issue Date:** 05/06/11

**Supersedes Date:** 12/24/10

**Document Group:** 19-7109-2

**Product Use:**

Intended Use: Industrial use

### SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
HFP/VDF/TFE Polymer	25190-89-0	60 - 70
Barium Sulfate	7727-43-7	10 - 30
Magnesium Oxide	1309-48-4	3 - 7
Graphite	7782-42-5	< 5
Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )	1309-37-1	< 5
Calcium Hydroxide	1305-62-0	< 5
Calcium Oxide	1305-78-8	< 5
Bisphenol AF	1478-61-1	< 5
Carnauba Wax	8015-86-9	< 1
Aliphatic Fatty Acid Ester	None	< 1

### SECTION 3: HAZARDS IDENTIFICATION

#### 3.1 EMERGENCY OVERVIEW

**Specific Physical Form:** Rubbery solid

**Odor, Color, Grade:** Brown no odor.

**General Physical Form:** Solid

**Immediate health, physical, and environmental hazards:** Contact with aluminum or zinc in a pressurized system may generate hydrogen gas which could create an explosion hazard. May cause severe eye irritation. May cause target organ effects.

## 3.2 POTENTIAL HEALTH EFFECTS

### Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Vapors from heated material may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

During heating:

Thermal Burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction.

### Skin Contact:

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

During heating:

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

### Inhalation:

Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

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.

If thermal decomposition occurs:

May be harmful if inhaled.

May be absorbed following inhalation and cause target organ effects.

### Ingestion:

No health effects are expected.

## SECTION 4: FIRST AID MEASURES

### 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**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.

**Skin Contact:** Remove contaminated clothing and shoes. 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. Wash contaminated clothing and clean shoes before reuse.

**Inhalation:** Remove person to fresh air. If signs/symptoms develop, get medical attention.

**If Swallowed:** No need for first aid is anticipated.

## SECTION 5: FIRE FIGHTING MEASURES

## 5.1 FLAMMABLE PROPERTIES

Autoignition temperature	Not Applicable
Flash Point	Not Applicable
Flammable Limits(LEL)	Not Applicable
Flammable Limits(UEL)	Not Applicable

## 5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire.

## 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Exposure to extreme heat can give rise to thermal decomposition. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

**Unusual Fire and Explosion Hazards:** Not applicable. Contact with aluminum or zinc in a pressurized system may generate hydrogen gas which could create an explosion hazard.

**Note:** See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Ventilate the area with fresh air.

### 6.2. Environmental precautions

Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

### Clean-up methods

Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up.

**In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.**

## SECTION 7: HANDLING AND STORAGE

### 7.1 HANDLING

Avoid eye contact with dust or airborne particles. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not breathe thermal decomposition products. Avoid skin contact with hot material. Store work clothes separately from other clothing, food and tobacco products. No smoking: Smoking while using this product can result in contamination of the tobacco and/or smoke and lead to polymer fume fever caused by the formation of the hazardous decomposition products mentioned in the Reactivity Data section of this MSDS. Keep away from aluminum and zinc. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment. Avoid contact with accelerators, amines, and reducing agents. Avoid high temperatures.

### 7.2 STORAGE

Store away from heat. Store out of direct sunlight. Keep container in well-ventilated area. Store away from Al or Mg powders. Store

away from accelerators, amines, and reducing agents.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 ENGINEERING CONTROLS

Provide appropriate local exhaust when product is heated. 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.

### 8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### 8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Indirect Vented Goggles

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#### 8.2.2 Skin Protection

Avoid skin contact. Wear heat insulating gloves when handling this material to prevent thermal burns.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Fluoroelastomer

Polymer laminate

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#### 8.2.3 Respiratory Protection

Avoid breathing of vapors created during cure cycle.

During heating:

Do not breathe vapors. Use a positive pressure supplied-air respirator if there is a potential for exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges and N95 particulate prefilters  
Half facepiece or fullface supplied-air respirator

. Select and use respiratory protection to prevent an inhalation exposure based on the results of an exposure assessment. Consult with your respirator manufacturer for selection of appropriate types of respirators.

#### 8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Wash hands after handling and before eating.

### 8.3 EXPOSURE GUIDELINES

<u><b>Ingredient</b></u>	<u><b>Authority</b></u>	<u><b>Type</b></u>	<u><b>Limit</b></u>	<u><b>Additional Information</b></u>
Barium Sulfate	ACGIH	TWA	10 mg/m <sup>3</sup>	
Barium Sulfate	OSHA	TWA, respirable fraction	5 mg/m <sup>3</sup>	
Barium Sulfate	OSHA	TWA, as total dust	15 mg/m <sup>3</sup>	
Calcium Hydroxide	ACGIH	TWA	5 mg/m <sup>3</sup>	
Calcium Hydroxide	OSHA	TWA, respirable fraction	5 mg/m <sup>3</sup>	
Calcium Hydroxide	OSHA	TWA, as total dust	15 mg/m <sup>3</sup>	
Calcium Oxide	ACGIH	TWA	2 mg/m <sup>3</sup>	
Calcium Oxide	OSHA	TWA	5 mg/m <sup>3</sup>	
Graphite	ACGIH	TWA, respirable	2 mg/m <sup>3</sup>	

Graphite	OSHA	fraction TWA	15 millions of particles/cu. ft.
Iron Oxide (Fe2O3)	ACGIH	TWA, respirable fraction	5 mg/m3
Iron Oxide (Fe2O3)	OSHA	TWA, as fume	10 mg/m3
Magnesium Oxide	ACGIH	TWA, inhalable fraction	10 mg/m3
Magnesium Oxide	OSHA	TWA, as total particulates	15 mg/m3

#### SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Specific Physical Form:</b>	Rubbery solid
<b>Odor, Color, Grade:</b>	Brown no odor.
<b>General Physical Form:</b>	Solid
<b>Autoignition temperature</b>	<i>Not Applicable</i>
<b>Flash Point</b>	<i>Not Applicable</i>
<b>Flammable Limits(LEL)</b>	<i>Not Applicable</i>
<b>Flammable Limits(UEL)</b>	<i>Not Applicable</i>
<b>Boiling Point</b>	<i>Not Applicable</i>
<b>Density</b>	1.8 g/cm3
<b>Vapor Density</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	<i>Not Applicable</i>
<b>Specific Gravity</b>	Approximately 1.8 [ <i>Ref Std: WATER=1</i> ]
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>No Data Available</i>
<b>Solubility in Water</b>	Negligible
<b>Evaporation rate</b>	<i>Not Applicable</i>
<b>Volatile Organic Compounds</b>	<i>Not Applicable</i>
<b>Kow - Oct/Water partition coef</b>	<i>No Data Available</i>
<b>Percent volatile</b>	<i>Not Applicable</i>
<b>VOC Less H2O &amp; Exempt Solvents</b>	<i>Not Applicable</i>
<b>Viscosity</b>	<i>Not Applicable</i>

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** Stable.

#### Materials and Conditions to Avoid:

##### 10.1 Conditions to avoid

None known

##### 10.2 Materials to avoid

Al or Mg powder and high/shear temperature conditions  
Accelerators  
Amines  
Metal powder  
Reducing agents

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## Hazardous Decomposition or By-Products

### Substance

Carbon monoxide  
Carbon dioxide  
Hydrogen Fluoride  
Perfluoroisobutylene (PFIB)  
Toxic Vapor, Gas, Particulate

### Condition

At Elevated Temperatures  
At Elevated Temperatures  
At Elevated Temperatures  
At Elevated Temperatures  
At Elevated Temperatures

## SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

## SECTION 12: ECOLOGICAL INFORMATION

### ECOTOXICOLOGICAL INFORMATION

Not determined.

### CHEMICAL FATE INFORMATION

Not determined.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Method:** Reclaim if feasible. To reclaim or return, contact your 3M sales representative.

Incinerate in an industrial or commercial facility in the presence of a combustible material. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste. Combustion products will include HF. Facility must be capable of handling halogenated materials.

**EPA Hazardous Waste Number (RCRA):** Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

## SECTION 14: TRANSPORT INFORMATION

**ID Number(s):**

XJ-0038-0251-0

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

## SECTION 15: REGULATORY INFORMATION

### US FEDERAL REGULATIONS

Contact 3M for more information.

#### 311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

### STATE REGULATIONS

Contact 3M for more information.

### CHEMICAL INVENTORIES

All the components of this product are listed on China's Inventory of Chemical Substances.

Contact 3M for more information.

### INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS 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: 0 Reactivity: 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.

### HMIS Hazard Classification

Health: 2 Flammability: 0 Reactivity: 0 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS®) 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® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

#### Revision Changes:

Section 16: Disclaimer (second paragraph) was modified.

Section 8: Skin protection - recommended gloves information was modified.

Section 8: Respiratory protection - recommended respirators guide was modified.

Section 2: Ingredient table was modified.

Section 8: Hand protection information was modified.

Section 16: Web address was added.

Section 1: Address was added.

Copyright was added.

Company logo was added.

Telephone header was added.

Company Telephone was added.

Section 1: Emergency phone information was added.

Section 1: Emergency phone information was deleted.

Company Logo was deleted.

Copyright was deleted.

Section 16: Web address heading was deleted.

Section 10: Hazardous decomposition or by-products phrase was deleted.

Section 1: Address line 1 was deleted.

Section 1: Address line 2 was deleted.

Section 10: Hazardous decomposition heading was deleted.

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