Safety Data Sheet

Document Group:	41-0515-1	**Version Number:**	2.00
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SECTION 1: Identification

1.1. Product identifier
3M™ Dyneon™ Peroxide Cure Perfluoroelastomer PFE 90

Product Identification Numbers
98-0213-3842-5, 98-0213-3934-0, UU-0108-2135-1, UU-0108-2203-7
7100215617, 7100214983, 7100238536

1.2. Recommended use and restrictions on use

Recommended use
Peroxide cure compound

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.

100% of the mixture consists of ingredients of unknown acute oral toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Perfluoropropanoic acid (unintentional impurity)	422-64-0	<= 0.00000027
Perfluorohexanoic acid (unintentional impurity)	307-24-4	<= 0.00000015
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	<= 0.00000014
Perfluorooctanesulfonic acid (unintentional impurity)	1763-23-1	<= 0.00000008
Perfluorobutanesulfonic acid (unintentional impurity)	375-73-5	<= 0.00000006
Perfluorooctanoic acid (unintentional impurity)	335-67-1	<= 0.00000006
Perfluorononanoic acid (unintentional impurity)	375-95-1	<= 0.00000005
Perfluorodecanoic acid (unintentional impurity)	335-76-2	<= 0.00000004
Perfluorododecanoic acid (unintentional impurity)	307-55-1	<= 0.00000004
Perfluorobutanoic acid (unintentional impurity)	375-22-4	<= 0.00000003
Perfluoroelastomer Copolymer	26425-79-6	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
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. 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. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard. 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
Perfluorobutanesulfonic acid (unintentional impurity)	375-73-5	Manufacturer determined	TWA(Inhalable aerosol):10 mg/m3	

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

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

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	White
Specific Physical Form:	Solid Block or Slab
Odor	Odorless
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	>=300 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	2.0 g/cm3

Specific Gravity	2.0 [*Ref Std:*WATER=1]
Solubility in Water	Negligible
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
Average particle size	*No Data Available*
Bulk density	*No Data Available*
Hazardous Air Pollutants	*No Data Available*
Molecular weight	*No Data Available*
Volatile Organic Compounds	*Not Applicable*
Percent volatile	0 %
Softening point	*No Data Available*
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
Finely divided active metals

No Data Available

10.6. Hazardous decomposition products

Substance	Condition
Tetrafluoroethylene	At Elevated Temperatures
Hexafluoropropylene	At Elevated Temperatures
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:
No information available.

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.

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
Perfluorooctanesulfonic acid (unintentional impurity)	Dermal		estimated to be > 5,000 mg/kg
Perfluorooctanesulfonic acid (unintentional impurity)	Inhalation-Dust/Mist		estimated to be > 12.5 mg/l
Perfluorooctanesulfonic acid (unintentional impurity)	Inhalation-Vapor		estimated to be 10 - 20 mg/l
Perfluorooctanesulfonic acid (unintentional impurity)	Ingestion		estimated to be 300 - 2,000 mg/kg
Perfluorobutanesulfonic acid (unintentional impurity)	Dermal	Rat	LD50 > 2,000 mg/kg
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Perfluorobutanesulfonic acid (unintentional impurity)	Professional judgement	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Perfluorobutanesulfonic acid (unintentional impurity)	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
Perfluorobutanesulfonic acid (unintentional impurity)	Guinea pig	Not classified

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
Perfluorobutanesulfonic acid (unintentional impurity)	In Vitro	Not mutagenic
Perfluorobutanesulfonic acid (unintentional impurity)	In vivo	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
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	Not classified for development	Rat	NOAEL 300 mg/kg/day	2 generation
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	Not classified for reproduction and/or development	Rat	NOAEL 300 mg/kg	

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
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	90 days
Perfluorobutanesulfonic acid (unintentional impurity)	Ingestion	blood | hematopoietic system | liver |	Not classified	Rat	NOAEL 600 mg/kg/day	90 days

		respiratory system | heart | endocrine system | bone, teeth, nails, and/or hair | bone marrow | immune system | muscles | nervous system | eyes				

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
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	<= 0.00000027
Perfluorohexanoic acid (unintentional impurity)	307-24-4	<= 0.00000015
Perfluorotetradecanoic acid (unintentional impurity)	376-06-7	<= 0.00000014
Perfluorooctanesulfonic acid (unintentional impurity)	1763-23-1	<= 0.00000008
Perfluorooctanoic acid (unintentional impurity)	335-67-1	<= 0.00000006
Perfluorobutanesulfonic acid (unintentional impurity)	375-73-5	<= 0.00000006
Perfluorononanoic acid (unintentional impurity)	375-95-1	<= 0.00000005
Perfluorododecanoic acid (unintentional impurity)	307-55-1	<= 0.00000004
Perfluorodecanoic acid (unintentional impurity)	335-76-2	<= 0.00000004
Perfluorobutanoic acid (unintentional impurity)	375-22-4	<= 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
Perfluorooctanesulfonic acid (unintentional impurity)	1763-23-1	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 SNUR or Consent Order Chemicals	Applicable

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
Perfluorooctanesulfonic acid (unintentional impurity)	1763-23-1	40CFR721.9582
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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