

# Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (1907/2006), as amended for GB.

# **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

#### 1.1. Product identifier

3M<sup>™</sup> Dyneon<sup>™</sup> Fluoroelastomer FC 2121

# Product Identification Numbers

ZF-0002-0086-3 ZF-0002-1197-7

7000117240 7000117269

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Fluoroelastomer

#### 1.3. Details of the supplier of the safety data sheet

Address:3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.Telephone:+44 (0)1344 858 000E Mail:tox.uk@mmm.comWebsite:www.3M.com/uk

#### **1.4.** Emergency telephone number

+44 (0)1344 858 000

# **SECTION 2: Hazard identification**

#### 2.1. Classification of the substance or mixture The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.

# CLASSIFICATION:

Serious Eye Damage/Eye Irritation, Category 2 - Eye Irrit. 2; H319 Reproductive Toxicity, Category 1B - Repr. 1B; H360F Hazardous to the Aquatic Environment (Chronic), Category 3 - Aquatic Chronic 3; H412

For full text of H phrases, see Section 16.

#### 2.2. Label elements The retained CLP Regulation (EU) No 1272/2008 as amended for Great Britain

# SIGNAL WORD

DANGER.

#### Symbols

GHS07 (Exclamation mark) |GHS08 (Health Hazard) |

Pictograms



Ingredient	CAS Nbr	EC No.	% by Wt
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	1478-61-1	216-036-7	< 3
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	75768-65-9	278-305-5	< 1
(trifluoromethyl)ethylidene]bis[phenol] (1:1)			

#### HAZARD STATEMENTS:

H319	Causes serious eye irritation.
H360F	May damage fertility.

### PRECAUTIONARY STATEMENTS

Prevention: P201 P280E	Obtain special instructions before use. Wear protective gloves.	
Response:		
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. present and easy to do. Continue rinsing.	Remove contact lenses, if
P308 + P313	IF exposed or concerned: Get medical advice/attention.	

### SUPPLEMENTAL INFORMATION:

#### **Supplemental Precautionary Statements:**

Firefighting instructions: Does not burn without external flame. Wear self-contained breathing apparatus and protection from acidic hydrogen fluoride. Vapours liberated during processing may be hazardous if inhaled. Eye, nose, throat and lung irritation can occur from such vapours. Restricted to professional users. Avoid contamination of tobacco with polymer resin. Before using, read the most current Safety Data Sheet.

#### Notes on labelling

The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain, Annex I, Section 1.3.4: Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with criteria of Annex I of GB CLP. Based on

available data, the environmental classification does not need to be applied to the label.

#### 2.3. Other hazards

May cause thermal burns. Vapours liberated during processing may be hazardous if inhaled. Eye, nose, throat and lung irritation can occur from such vapours.

This material does not contain any substances that are assessed to be a PBT or vPvB

# **SECTION 3: Composition/information on ingredients**

# 3.1. Substances

Not applicable

### 3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP], as amended for GB
Vinylidene fluoride-hexafluoropropylene polymer	(CAS-No.) 9011-17-0	85 - 97	Substance not classified as hazardous
4,4'-[2,2,2-Trifluoro-1- (trifluoromethyl)ethylidene]diphenol	(CAS-No.) 1478-61-1 (EC-No.) 216-036-7	< 3	Eye Dam. 1, H318 Repr. 1B, H360FD STOT RE 2, H373 Aquatic Chronic 1, H410,M=1
tetrahydrothiophene-1,1-dioxide	(CAS-No.) 126-33-0 (EC-No.) 204-783-1	< 0.3	Acute Tox. 4, H302 Repr. 1B, H360D
Bis(4-chlorophenyl) sulphone	(CAS-No.) 80-07-9 (EC-No.) 201-247-9	< 1	Aquatic Chronic 2, H411 Eye Irrit. 2, H319
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1- (trifluoromethyl)ethylidene]bis[phenol] (1:1)	(CAS-No.) 75768-65-9 (EC-No.) 278-305-5	< 1	Aquatic Chronic 1, H410,M=1 Repr. 1B, H360FD Aquatic Acute 1, H400,M=1

Please see section 16 for the full text of any H statements referred to in this section

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

# **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

The most important symptoms and effects based on the GB CLP classification include: Serious irritation to the eyes (significant redness, swelling, pain, tearing, and impaired vision).

#### 4.3. Indication of any immediate medical attention and special treatment required

Not applicable

# **SECTION 5: Fire-fighting measures**

#### 5.1. 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.** Advice 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. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

### **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.

### 6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

# **SECTION 7: Handling and storage**

#### 7.1. Precautions for safe handling

Avoid inhalation of thermal decomposition products. Avoid skin contact with hot material. Store work clothes separately from other clothing, food and tobacco products. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. 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. Use personal protective equipment (eg. gloves, respirators...) as required.

#### 7.2. Conditions for safe storage including any incompatibilities

No special storage requirements.

### 7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

# **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

# **Occupational exposure limits**

No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

# **Biological limit values**

No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

# 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/vapours/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: Full face shield. Indirect vented goggles.

*Applicable Norms/Standards* Use eye/face protection conforming to EN 166

# 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:

Material Polymer laminate Thickness (mm) No data available **Breakthrough Time** No data available

Applicable Norms/Standards Use gloves tested to EN 374

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 - 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 organic vapours and particulates

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

#### Applicable Norms/Standards

Use a respirator conforming to EN 140 or EN 136: filter types A & P

#### Thermal hazards

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

*Applicable Norms/Standards* Use gloves tested to EN 407

# **SECTION 9: Physical and chemical properties**

### 9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Solid block or slab
Colour	Straw, White
Odor	Odourless
Odour threshold	No data available.
Melting point/freezing point	Not applicable.
Boiling point/boiling range	Not applicable.
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Flash point	No flash point
Autoignition temperature	Not applicable.
Decomposition temperature	No data available.
рН	substance/mixture is non-soluble (in water)
Kinematic Viscosity	Not applicable.
Water solubility	Negligible
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Vapour pressure	Not applicable.
Density	1.8 g/cm3
Relative density	1.8 [ <i>Ref Std</i> :WATER=1]
Relative Vapour Density	Not applicable.

### 9.2. Other information

9.2.2 Other safety characteristics
EU Volatile Organic Compounds
Evaporation rate
Molecular weight

No data available. No data available. No data available.

# **SECTION 10: Stability and reactivity**

#### **10.1 Reactivity**

This material is considered to be non reactive under normal use conditions

### 10.2 Chemical stability

Stable.

### **10.3 Possibility of hazardous reactions**

Hazardous polymerisation will not occur.

#### **10.4 Conditions to avoid**

None known.

#### **10.5 Incompatible materials**

Aluminium or magnesium powder and high/shear temperature conditions.

### **10.6 Hazardous decomposition products**

<u>Substance</u>	
<i>a</i> 1	

ubstance	Condition
Carbon monoxide	At elevated temperatures.
Carbon dioxide.	At elevated temperatures.
Hydrogen Fluoride	At elevated temperatures.
Perfluoroisobutylene (PFIB).	At elevated temperatures.
Oxides of sulphur.	At elevated temperatures.
Toxic vapour, gas, particulate.	At elevated temperatures.

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

1.4.

# **SECTION 11: Toxicological information**

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from 3M assessments.

11.1. Information on hazard classes as defined in the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain.

#### Signs and Symptoms of Exposure

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

#### Inhalation

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. May cause additional health effects (see below). 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

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

### Eve contact

Thermal burns: Signs/symptoms may include severe pain, redness and swelling, and tissue destruction. Severe eye irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

#### Ingestion

Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea. May cause additional health effects (see below).

# **Additional Health Effects:**

#### **Reproductive/Developmental Toxicity:**

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

#### **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
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Vinylidene fluoride-hexafluoropropylene polymer	Dermal		LD50 estimated to be > 5,000 mg/kg
Vinylidene fluoride-hexafluoropropylene polymer	Ingestion	Rat	LD50 6,000 mg/kg
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	Dermal	Rat	LD50 > 2,000 mg/kg
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	Ingestion	Rat	LD50 > 2,000 mg/kg
Bis(4-chlorophenyl) sulphone	Dermal	Professio	LD50 estimated to be 2,000 - 5,000 mg/kg
		nal	
		judgeme	
		nt	
Bis(4-chlorophenyl) sulphone	Ingestion	Rat	LD50 4,810 mg/kg
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	Dermal	Professio	LD50 estimated to be $>$ 5,000 mg/kg
(trifluoromethyl)ethylidene]bis[phenol] (1:1)		nal	
		judgeme	
		nt	
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	Ingestion	Rat	LD50 > 2,000 mg/kg
(trifluoromethyl)ethylidene]bis[phenol] (1:1)			
tetrahydrothiophene-1,1-dioxide	Dermal	Rabbit	LD50 4,897 mg/kg
tetrahydrothiophene-1,1-dioxide	Inhalation-	Rat	LC50 > 12  mg/l
	Dust/Mist		
	(4 hours)		
tetrahydrothiophene-1,1-dioxide	Ingestion	Rat	LD50 1,846 mg/kg

ATE = acute toxicity estimate

#### **Skin Corrosion/Irritation**

Name	Species	Value
Vinylidene fluoride-hexafluoropropylene polymer	Rabbit	No significant irritation
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	Rabbit	No significant irritation
Bis(4-chlorophenyl) sulphone	Rabbit	Minimal irritation
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	Rabbit	No significant irritation
(trifluoromethyl)ethylidene]bis[phenol] (1:1)		
tetrahydrothiophene-1,1-dioxide	Rabbit	Minimal irritation

# Serious Eye Damage/Irritation

Name	Species	Value
Vinylidene fluoride-hexafluoropropylene polymer	Rabbit	Mild irritant
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	Rabbit	Corrosive
Bis(4-chlorophenyl) sulphone	Rabbit	Severe irritant
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	Rabbit	Mild irritant
(trifluoromethyl)ethylidene]bis[phenol] (1:1)		
tetrahydrothiophene-1,1-dioxide	Rabbit	Moderate irritant

#### **Skin Sensitisation**

Name	Species	Value
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	Guinea pig	Not classified

3 MIM DynoonIM Fluoroolostomor F( ' 2121	
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Bis(4-chlorophenyl) sulphone	Mouse	Not classified
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1-	Guinea	Not classified
(trifluoromethyl)ethylidene]bis[phenol] (1:1)	pig	
tetrahydrothiophene-1,1-dioxide	Guinea	Not classified
	pig	

# **Respiratory Sensitisation**

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

# Germ Cell Mutagenicity

Name	Route	Value
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	In vivo	Not mutagenic
4,4'-[2,2,2-Trifluoro-1-(trifluoromethyl)ethylidene]diphenol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Bis(4-chlorophenyl) sulphone	In Vitro	Not mutagenic
Bis(4-chlorophenyl) sulphone	In vivo	Some positive data exist, but the data are not sufficient for classification
Benzyltriphenylphosphonium, salt with 4,4'-[2,2,2-trifluoro-1- (trifluoromethyl)ethylidene]bis[phenol] (1:1)	In Vitro	Not mutagenic
tetrahydrothiophene-1,1-dioxide	In Vitro	Not mutagenic

# Carcinogenicity

Name	Route	Species	Value
Bis(4-chlorophenyl) sulphone	Ingestion	Multiple	Not carcinogenic
		animal	
		species	

# **Reproductive Toxicity**

# **Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test result	Exposure
					Duration
4,4'-[2,2,2-Trifluoro-1-	Ingestion	Toxic to female reproduction	Rat	LOAEL 338	2 generation
(trifluoromethyl)ethylidenejdiphenol				ppm in the	
	T C		D (		
4,4'-[2,2,2-1filluoro-1- (trifluoromethyl)ethylideneldinhanol	Ingestion	I oxic to male reproduction	Kat	LOAEL 338	2 generation
(unitationeury))euryndenejarphenor				diet	
4 4'-[2 2 2-Trifluoro-1-	Ingestion	Toxic to development	Rat	LOAFL 338	2 generation
(trifluoromethyl)ethylideneldiphenol	ingestion	Tokie to development	rut	ppm in the	2 generation
(				diet	
Bis(4-chlorophenyl) sulphone	Ingestion	Not classified for female reproduction	Rat	NOAEL 50	42 days
				mg/kg/day	
Bis(4-chlorophenyl) sulphone	Ingestion	Not classified for male reproduction	Rat	NOAEL 50	premating
				mg/kg/day	into lactation
Bis(4-chlorophenyl) sulphone	Ingestion	Not classified for development	Rat	NOAEL 15	premating
				mg/kg/day	into lactation
Benzyltriphenylphosphonium, salt with	Ingestion	Toxic to female reproduction	sımılar	LOAEL 338	2 generation
4,4'-[2,2,2-tfilluoro-1- (trifluoromethyl)ethylidenelhis[nhenel]			compoun	ppm in the	
(1.1)			us	ulet	
Benzyltriphenylphosphonium salt with	Ingestion	Toxic to male reproduction	similar	LOAEL 338	2 generation
4.4'-[2.2.2-trifluoro-1-	ingestion	Tome to mare reproduction	compoun	ppm in the	2 generation
(trifluoromethyl)ethylidene]bis[phenol]			ds	diet	
(1:1)					
Benzyltriphenylphosphonium, salt with	Ingestion	Toxic to development	similar	LOAEL 338	2 generation
4,4'-[2,2,2-trifluoro-1-			compoun	ppm in the	
(trifluoromethyl)ethylidene]bis[phenol]			ds	diet	
				NO ARE 500	1.4.1
tetrahydrothiophene-1,1-dioxide	Ingestion	Not classified for male reproduction	Kat	NOAEL /00	14 days
tatrahydrathianhana 1.1 diayida	Incostic	Not alogaified for famale range to the	Dat	NOAEL 200	promoting 0-
tetranyarotniopnene-1,1-dioxide	ingestion	Not classified for remaie reproduction	ка	model 200	premating &
			1	mg/kg/uay	uuring

					gestation
tetrahydrothiophene-1,1-dioxide	Ingestion	Toxic to development	Rat	NOAEL 60 mg/kg/day	premating & during gestation

# Target Organ(s)

# Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure
						Duration
4,4'-[2,2,2-Trifluoro-1-	Inhalation	respiratory irritation	Some positive data exist, but the	similar	NOAEL Not	
(trifluoromethyl)ethylidene			data are not sufficient for	health	available	
]diphenol			classification	hazards		
Bis(4-chlorophenyl)	Inhalation	respiratory irritation	Some positive data exist, but the	similar	NOAEL Not	
sulphone			data are not sufficient for	health	available	
-			classification	hazards		

### Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Vinylidene fluoride- hexafluoropropylene polymer	Ingestion	liver	Not classified	Rat	NOAEL 10,000 mg/kg/day	2 weeks
4,4'-[2,2,2-Trifluoro-1- (trifluoromethyl)ethylidene ]diphenol	Ingestion	heart   endocrine system   gastrointestinal tract   hematopoietic system   liver   nervous system   kidney and/or bladder	Not classified	Rat	NOAEL 100 mg/kg/day	28 days
Bis(4-chlorophenyl) sulphone	Ingestion	hematopoietic system   liver   immune system	Not classified	Rat	NOAEL 200 mg/kg/day	14 weeks
Bis(4-chlorophenyl) sulphone	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 19 mg/kg/day	14 weeks
Bis(4-chlorophenyl) sulphone	Ingestion	heart   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   muscles   nervous system   respiratory system   vascular system	Not classified	Rat	NOAEL 200 mg/kg/day	14 weeks
tetrahydrothiophene-1,1- dioxide	Inhalation	nervous system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	LOAEL 0.5 mg/l	27 days
tetrahydrothiophene-1,1- dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 0.02 mg/l	90 days
tetrahydrothiophene-1,1- dioxide	Inhalation	liver	Not classified	Monkey	LOAEL 0.5 mg/l	27 days
tetrahydrothiophene-1,1- dioxide	Inhalation	blood	Not classified	Guinea pig	NOAEL 0.16 mg/l	90 days
tetrahydrothiophene-1,1- dioxide	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 700 mg/kg/day	28 days
tetrahydrothiophene-1,1- dioxide	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 60 mg/kg/day	28 days

# **Aspiration Hazard**

For the component/components, either no data is currently available or the data is 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.

#### **11.2. Information on other hazards**

This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

# **SECTION 12: Ecological information**

The information below may not agree with the material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications derived from 3M assessments.

#### 12.1. Toxicity

CLP Acute 1 & Chronic 1 or 2 : Toxic to aquatic life with long lasting effects. Aquatic testing on the mixture was conducted with the following results: Actual loading for 48h-EC50 Daphnia magna and 72h-EC50 for Pseudokirchnerialla subcapitata between 1000 & 6000 mg/l. Conditions of exposure of the test medium to the elastomer formulation were considered worst case because: (1) Extractable solids were present in the fluoroelastomer formulation at the highest possible concentrations,(2) Only a small fraction of the extractable solids (< 1%) leached out of the elastomer, and(3) Effects were induced on these freshwater species only when the loading tested exceeded the regulatory value of 100 mg/l.

No product test data available.

Material	CAS #	Organism	Туре	Exposure	Test endpoint	Test result
Vinylidene fluoride- hexafluoropropylen e polymer	9011-17-0	N/A	Data not available or insufficient for classification	N/A	N/A	n/a
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Green algae	Experimental	72 hours	ErC50	>0.808 mg/l
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Water flea	Experimental	48 hours	EC50	2.7 mg/l
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Green algae	Experimental	72 hours	NOEC	0.0522 mg/l
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Water flea	Experimental	21 days	NOEC	0.23 mg/l
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Zebra Fish	Experimental	28 days	NOEC	0.05 mg/l
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Activated sludge	Experimental	3 hours	EC50	126.8
tetrahydrothiophen e-1,1-dioxide	126-33-0	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
tetrahydrothiophen e-1,1-dioxide	126-33-0	Medaka	Experimental	96 hours	LC50	>100 mg/l
tetrahydrothiophen e-1,1-dioxide	126-33-0	Water flea	Experimental	48 hours	EC50	40 mg/l
tetrahydrothiophen e-1,1-dioxide	126-33-0	Green algae	Experimental	72 hours	NOEC	310 mg/l
tetrahydrothiophen e-1,1-dioxide	126-33-0	Water flea	Experimental	21 days	NOEC	25 mg/l

Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno U(1:1)	75768-65-9	Fathead minnow	Experimental	96 hours	LC50	1.2 mg/l
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno I] (1:1)	75768-65-9	Green algae	Experimental	72 hours	ErC50	0.45 mg/l
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno l] (1:1)	75768-65-9	Water flea	Experimental	48 hours	EC50	0.79 mg/l
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno l] (1:1)	75768-65-9	Green algae	Experimental	72 hours	NOEC	0.009 mg/l
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno l] (1:1)	75768-65-9	Activated sludge	Experimental	3 hours	NOEC	100 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Green algae	Endpoint not reached	72 hours	EC50	>100 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Activated sludge	Experimental	3 hours	EC10	>1,000 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Water flea	Experimental	48 hours	EC50	>100 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Zebra Fish	Experimental	96 hours	LC50	>100 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Green algae	Experimental	72 hours	NOEC	0.28 mg/l
Bis(4- chlorophenyl) sulphone	80-07-9	Water flea	Experimental	21 days	NOEC	0.32 mg/l

# 12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Vinylidene fluoride- hexafluoropropylen e polymer	9011-17-0	Data not availbl- insufficient	N/A	N/A	N/A	N/A
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
4,4'-[2,2,2- Trifluoro-1-	1478-61-1	Estimated Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	EC C.7 Hydrolysis at pH

(trifluoromethyl)et hylidene]diphenol						
tetrahydrothiophen e-1,1-dioxide	126-33-0	Experimental Biodegradation	14 days	BOD	10.1 %BOD/ThOD	OECD 301C - MITI test (I)
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno 1] (1:1)	75768-65-9	Experimental Biodegradation	28 days	CO2 evolution	0 %CO2 evolution/THCO2 evolution	OECD 301B - Modified sturm or CO2
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno 1] (1:1)	75768-65-9	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	>1 years (t 1/2)	OECD 111 Hydrolysis func of pH
Bis(4- chlorophenyl) sulphone	80-07-9	Experimental Biodegradation	28 days	BOD	0 %BOD/ThOD	OECD 301C - MITI test (I)

# 12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Vinylidene fluoride- hexafluoropropylen e polymer	9011-17-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Experimental BCF - Other	168 hours	Bioaccumulation factor	9.0	OECD305-Bioconcentration
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)et hylidene]diphenol	1478-61-1	Experimental Bioconcentration		Log Kow	2.79	EC A.8 Partition Coefficient
tetrahydrothiophen e-1,1-dioxide	126-33-0	Experimental BCF - Fish	42 days	Bioaccumulation factor	<13	
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno l] (1:1)	75768-65-9	Transformation product Bioconcentration		Log Kow	2.28	
Benzyltriphenylpho sphonium, salt with 4,4'-[2,2,2- trifluoro-1- (trifluoromethyl)et hylidene]bis[pheno I] (1:1)	75768-65-9	Transformation product Bioconcentration		Log Kow	2.51	
Bis(4- chlorophenyl) sulphone	80-07-9	Experimental BCF - Fish	35 days	Bioaccumulation factor	82	OECD305-Bioconcentration

# 12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
4,4'-[2,2,2- Trifluoro-1- (trifluoromethyl)eth ylidene]diphenol	1478-61-1	Experimental Mobility in Soil	Кос	2,290 l/kg	EC C.19 Estim. of Koc by HPLC
tetrahydrothiophene -1,1-dioxide	126-33-0	Estimated Mobility in Soil	Кос	9 l/kg	Episuite™

Benzyltriphenylpho	75768-65-9	Experimental	Koc	7,244 l/kg	OECD 121 Estim. of Koc by
sphonium, salt with		Mobility in Soil			HPLC
4,4'-[2,2,2-trifluoro-					
1-					
(trifluoromethyl)eth					
ylidene]bis[phenol]					
(1:1)					
Bis(4-chlorophenyl)	80-07-9	Estimated Mobility	Koc	2,900 l/kg	Episuite <sup>™</sup>
sulphone		in Soil			

#### 12.5. Results of the PBT and vPvB assessment

This material does not contain any substances that are assessed to be a PBT or vPvB

### **12.6.** Other adverse effects

This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

# **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods**

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

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. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

### EU waste code (product as sold)

070214\* Wastes from additives containing dangerous substances

# **SECTION 14: Transportation information**

Not hazardous for transportation.

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number	No data available.	No data available.	No data available.
14.2 UN proper shipping name	No data available.	No data available.	No data available.
14.3 Transport hazard class(es)	No data available.	No data available.	No data available.
14.4 Packing group	No data available.	No data available.	No data available.
14.5 Environmental hazards	No data available.	No data available.	No data available.

14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Transport in bulk according to Annex II of Marpol 73/78 and IBC Code	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.
Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	No data available.	No data available.	No data available.
IMDG Segregation Code	No data available.	No data available.	No data available.

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

# **SECTION 15: Regulatory information**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

### Global inventory status

Contact 3M for more information. 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.

### COMAH Regulation, SI 2015/483

Seveso hazard categories, Annex 1, Part 1 None

Seveso named dangerous substances, Annex 1, Part 2 None

### Regulation (EU) No 649/2012, as amended for GB

No chemicals listed

### 15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this substance/mixture in accordance with Regulation (EC) No 1907/2006, as amended for GB.

# **SECTION 16: Other information**

### List of relevant H statements

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.
H360F	May damage fertility.

H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

#### **Revision information:**

GB Section 04: First Aid - Symptoms and Effects (GB CLP) information was added.

GB Section 04: Information on toxicological effects information was modified.

Section 3: Composition/ Information of ingredients table information was modified.

Section 5: Fire - Advice for fire fighters information information was modified.

Section 8: Personal Protection - Respiratory Information information was modified. Section 8: Personal Protection - Thermal hazards information information was modified.

Section 8: Personal Protection - Thermal nazards information information Section 11: Acute Toxicity table information was modified.

Section 11: Acute Toxicity table information was modified.

Section 11: Carcinogenicity rable monitation was added.

Section 11: Germ Cell Mutagenicity Table information was modified.

Section 11: Health Effects - Inhalation information information was modified.

Section 11: Reproductive Toxicity Table information was modified.

Section 11: Serious Eye Damage/Irritation Table information was modified.

Section 11: Skin Corrosion/Irritation Table information was modified.

Section 11: Skin Sensitization Table information was modified.

Section 11: Target Organs - Repeated Table information was modified.

Section 11: Target Organs - Single Table information was modified.

Section 12: Component ecotoxicity information information was modified.

Section 12: Mobility in soil information information was modified.

Section 12: Persistence and Degradability information information was modified.

Section 12:Bioccumulative potential information information was modified.

Two-column table displaying the unique list of H Codes and statements (std phrases) for all components of the given material. information was modified.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into the European Union, you are responsible for all regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration.

### 3M SDSs for Great Britain are available at www.3M.com/uk

For Northern Ireland documents, please contact your 3M representative to obtain a copy.