



Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

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

1.1. Product identifier

3M Fluorad HQ-115

REACH registration number	CASRN	EC Number	Ingredient Name
01-0000016224-78-0003	90076-65-6	ELINCS 415-300-0	Lithium bis(trifluoromethylsulphonyl)imide

Product Identification Numbers

98-0211-6535-6 98-0212-3615-7

7100043620 7100003535

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

Identified uses

Battery Electrolyte

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 858 000
E Mail: tox.uk@mmm.com
Website: 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

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

Substance or Mixture Corrosive to Metals, Category 1 - Met. Corr. 1; H290
Acute Toxicity, Category 3 - Acute Tox. 3; H301

Acute Toxicity, Category 3 - Acute Tox. 3; H311
 Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
 Skin Corrosion/Irritation, Category 1B - Skin Corr. 1B; H314
 Specific Target Organ Toxicity-Repeated Exposure, Category 2 - STOT RE 2; H373
 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

CLP REGULATION (EC) No 1272/2008

SIGNAL WORD

DANGER.

Symbols:

GHS05 (Corrosion) | GHS06 (Skull and crossbones) | GHS08 (Health Hazard) |

Pictograms



Ingredients:

Ingredient	CAS Nbr	EC No.	% by Wt
Lithium bis(trifluoromethylsulphonyl)imide	90076-65-6	415-300-0	<= 100

HAZARD STATEMENTS:

H290	May be corrosive to metals.	
H301	Toxic if swallowed.	
H311	Toxic in contact with skin.	
H314	Causes severe skin burns and eye damage.	
H373	May cause damage to organs through prolonged or repeated exposure:	nervous system
H412	Harmful to aquatic life with long lasting effects.	

PRECAUTIONARY STATEMENTS

Prevention:

P260B	Do not breathe dust.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

Response:

P303 + P361 + P353A	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.

Disposal:

P501	Dispose of contents/container in accordance with applicable local/regional/national/international regulations.
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2.3. Other hazards

May cause chemical gastrointestinal burns.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EC No.	REACH Registration No.	% by Wt	Classification
Lithium bis(trifluoromethylsulphon yl)imide	90076-65-6	ELINCS 415-300- 0		<= 100	Acute Tox. 3, H311; Acute Tox. 3, H301; Skin Corr. 1B, H314; STOT RE 2, H373; Aquatic Chronic 3, H412

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 with large amounts of water for at least 15 minutes. Remove contaminated clothing. Get immediate medical attention. Wash clothing before reuse.

Eye contact

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If swallowed

Rinse mouth. Do not induce vomiting. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

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. Extinguishing media

Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance

Carbon monoxide.
Carbon dioxide.
Hydrogen Fluoride
Oxides of nitrogen.
Oxides of sulphur.
Toxic vapour, gas, particulate.

Condition

During combustion.
During combustion.
During combustion.
During combustion.
During combustion.
During combustion.

5.3. Advice for fire-fighters

When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), 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 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 metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene. Clean up residue. Cover, but do not seal for 48 hours. 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. For industrial or professional use only. 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. Avoid release to the environment. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage including any incompatibilities

Keep only in original container. Store in a corrosive resistant container with a resistant inner liner. Store away from acids.

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**

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	CAS Nbr	Agency	Limit type	Additional comments
Lithium	90076-65-6	Manufacturer	TWA:0.1 mg/m3	SKIN

bis(trifluoromethylsulphonyl)imid
e

determined

UK HSC : UK Health and Safety Commission

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

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.

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	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	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:

Half facepiece air-purifying respirator suitable for organic vapors or acid gases and particulates

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

Use a respirator conforming to EN 140: filter types A or (E & P)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Powder
Appearance/Odour	White powder.
Odour threshold	No data available.
pH	7 [Details: 1% aqueous solution]
Boiling point/boiling range	Not applicable.
Melting point	No data available.
Flammability (solid, gas)	Not classified
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	No flash point
Autoignition temperature	Not applicable.
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Vapour pressure	Not applicable.
Relative density	approximately 0.6 [Ref Std: WATER=1]
Water solubility	Complete
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Evaporation rate	Not applicable.
Vapour density	Not applicable.
Decomposition temperature	No data available.
Viscosity	No data available.
Density	0.6 g/cm ³

9.2. Other information

EU Volatile Organic Compounds	No data available.
Molecular weight	No data available.
Percent volatile	Not applicable.

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

None known.

10.6 Hazardous decomposition products**Substance****Condition**

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

SECTION 11: Toxicological information

The information below may not agree with the EU 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 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

Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact

Toxic in contact with skin.

Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Eye contact

Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion

Toxic if swallowed.

Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

Additional Health Effects:**Prolonged or repeated exposure may cause target organ effects:**

Neurological effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and changes in blood pressure and heart rate.

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
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3M Fluorad HQ-115

Lithium bis(trifluoromethylsulphonyl)imide	Dermal	Rabbit	LD50	350-500 mg/kg
Lithium bis(trifluoromethylsulphonyl)imide	Ingestion	Rat	LD50	50-500 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Lithium bis(trifluoromethylsulphonyl)imide	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Lithium bis(trifluoromethylsulphonyl)imide	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
Lithium bis(trifluoromethylsulphonyl)imide	Guinea pig	Not classified

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
Lithium bis(trifluoromethylsulphonyl)imide	In vivo	Not mutagenic
Lithium bis(trifluoromethylsulphonyl)imide	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

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

Reproductive Toxicity**Reproductive and/or Developmental Effects**

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

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

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

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Lithium bis(trifluoromethylsulphonyl)imide	Ingestion	nervous system	May cause damage to organs though prolonged or repeated exposure	Rat	NOAEL 10 mg/kg/day	28 days
Lithium bis(trifluoromethylsulphonyl)imide	Ingestion	blood kidney and/or bladder heart endocrine system hematopoietic system vascular system	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.

SECTION 12: Ecological information

The information below may not agree with the EU 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

Material	Organism	Type	Exposure	Test endpoint	Test result
3M Fluorad HQ-115	Water flea	Laboratory	48 hours	EC50	20 mg/l
3M Fluorad HQ-115	Fathead minnow	Laboratory	96 hours	LC50	202 mg/l
3M Fluorad HQ-115	Activated Sludge	Laboratory	3 hours	IC50	>1,000 mg/l

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Lithium bis(trifluoromethylsulfonyl)imide	90076-65-6	Green Algae	Experimental	72 hours	NOEC	10 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Lithium bis(trifluoromethylsulfonyl)imide	90076-65-6	Experimental Biodegradation	28 days	BOD	0 % weight	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Lithium bis(trifluoromethylsulfonyl)imide	90076-65-6	Experimental BCF-Carp	56 days	Bioaccumulation factor	<41	Other methods

12.4. Mobility in soil

Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects

Material	CAS Nbr	Ozone Depletion Potential	Global Warming Potential
lithium bis(trifluoromethylsulfonyl)imide	90076-65-6	0	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

See Section 11.1 Information on toxicological effects

Dispose of waste product in a permitted industrial waste facility. Combustion products will include HF. Facility must be

3M Fluorad HQ-115

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)

160606* Separately collected electrolyte from batteries and accumulators

SECTION 14: Transportation information

98-0211-6535-6, 98-0212-3615-7

ADR/RID: UN2923, CORROSIVE SOLID, TOXIC, N.O.S., (LITHIUM BIS(TRIFLUOROMETHANESULFONYL)IMIDE), 8., (6.1), III, (E), ADR Classification Code: CT2.

IMDG-CODE: UN2923, CORROSIVE SOLID, TOXIC, N.O.S., (LITHIUM BIS(TRIFLUOROMETHANESULFONYL)IMIDE), 8., (6.1), III, IMDG-Code segregation code: NONE, EMS: FA,SB.

ICAO/IATA: UN2923, CORROSIVE SOLID, TOXIC, N.O.S., (LITHIUM BIS(TRIFLUOROMETHANESULFONYL)IMIDE), 8., (6.1), III.

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. One or more of the components of this product have been notified to ELINCS (European List of Notified or New Chemical Substances). Certain restrictions apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the chemical notification requirements of TSCA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory.

15.2. Chemical Safety Assessment

Not applicable

SECTION 16: Other information

List of relevant H statements

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Revision information:

Section 1: REACH registration number information was added.

Section 01: SAP Material Numbers information was added.

CLP: Ingredient table information was modified.

Label: CLP Precautionary - Response information was modified.

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

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

Section 3: Reference to section 15 for Nota info information was deleted.

Section 6: Accidental release clean-up information information was modified.

Section 6: Accidental release personal information information was modified.

Section 8: glove data value information was modified.

Section 8: Occupational exposure limit table information was modified.

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

Section 8: Personal Protection - Skin/body information information was modified.

Section 8: Personal Protection - Skin/hand information information was modified.

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

Section 8: Skin protection - protective clothing information information was modified.

Section 9: Property description for optional properties information was added.

Section 9: Property description for optional properties information was deleted.

Section 11: Acute Toxicity table information was modified.

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

Section 11: Skin Sensitization Table information was modified.

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

Section 12: Component ecotoxicity information information was modified.

Prints No Data if Adverse effects information is not present information was deleted.

Section 13: Standard Phrase Category Waste GHS information was modified.

Section 15: Regulations - Inventories 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.

3M United Kingdom MSDSs are available at www.3M.com/uk