

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

Acota Fluorosurfactant FC-4434

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

Identified uses

Industrial use.

1.3. Details of the supplier of the substance or mixture

Address: Acota Limited, Centrepoint, Knights Way, Shrewsbury SY1 3BF. UK

E Mail: sales@acota.co.uk

Website: www.acota.co.uk

1.4. Emergency telephone number

+44 (0)1743 466200

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

Hazardous to the Aquatic Environment (Chronic), Category 2 - Aquatic Chronic 2; H411

For full text of H phrases, see Section 16.

2.2. Label elements

CLP REGULATION (EC) No 1272/2008

Symbols:

GHS09 (Environment) |

Pictograms



HAZARD STATEMENTS:

H411 Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Prevention:

P273 Avoid release to the environment.

Disposal:

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

SUPPLEMENTAL INFORMATION:

Supplemental Hazard Statements:

EUH208 Contains 2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate. May produce an allergic reaction.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EC No.	REACH Registration No.	% by Wt	Classification
(2-Methoxymethylethoxy)propanol	34590-94-8	252-104-2	01-211945001160	74 - 76	Substance with a Community level exposure limit in the workplace
2-Propenoic acid, 2-[methyl[(1,1,2,2,3,3,4,4,4nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3-mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2propenoate,	1017237-78-3			23 - 26	Aquatic Chronic 2, H411
Polyether Polymer (NJTS Reg. No. 044996006605)	Trade Secret			1 - 3	Substance not classified as hazardous
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	266-733-5		< 1	Skin Sens. 1B, H317; Aquatic Chronic 2, H411

Toluene	108-88-3	203-625-9		0 - 0.3	Flam. Liq. 2, H225; Asp. Tox. 1, H304; Skin Irrit. 2, H315; Repr. 2, H361d;
					STOT SE 3, H336; STOT RE 2, H373 Aquatic Chronic 3, H412 Eye Irrit. 2, H319

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 are concerned, get medical advice.

Skin contact

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye contact

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If swallowed

Rinse mouth. If you are concerned, get medical advice.

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

In case of fire: Use a fire fighting agent suitable for flammable liquids such as dry chemical or carbon dioxide to extinguish.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products

Substance

- Carbon monoxide.
- Carbon dioxide.
- Hydrogen Fluoride
- Toxic vapour, gas, particulate.

Condition

- During combustion.
- During combustion.
- During combustion.
- During combustion.

5.3. Advice for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. 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. 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. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. 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. Warning! A motor could be an ignition source and could cause flammable gases or vapours in the spill area to burn or explode. 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. For larger spills, cover drains and build dykes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. 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. For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (eg. gloves, respirators...) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep cool. Protect from sunlight. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidising agents. Store away from areas where product may come into contact with food or pharmaceuticals.

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
Toluene	108-88-3	UK HSC	TWA: 191 mg/m ³ (50 ppm); STEL: 384 mg/m ³ (100 ppm)	SKIN
(2-Methoxymethylethoxy)propanol	34590-94-8	UK HSC	TWA:308 mg/m ³ (50 ppm)	SKIN

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

Provide appropriate local exhaust when product is heated. 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: Safety glasses with side shields.

Applicable Norms/Standards

Use eye 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.

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

Material	Thickness (mm)	Breakthrough Time
Fluoroelastomer	No data available	No data available

Applicable Norms/Standards

Use gloves tested to EN 374

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: During heating:

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

Half facepiece or full facepiece air-purifying respirator suitable for organic vapours

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 type A

Thermal hazards

Wear heat insulating gloves 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	Liquid.
Specific Physical Form:	Liquid.
Appearance/Odour	Light yellow with a slight ether odour.
Odour threshold	<i>No data available.</i>
pH	<i>Not applicable.</i>
Boiling point/boiling range	approximately 190 °C
Melting point	<i>Not applicable.</i>
Flammability (solid, gas)	Not applicable.
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	79 °C [<i>Test Method:</i> Tagliabue closed
cup] Autoignition temperature	<i>No data available.</i> Flammable
Limits(LEL)	1.1 % [@ 100 °C]
Flammable Limits(UEL)	14 % [@ 150 °C]
Vapour pressure	54.7 Pa [@ 20 °C]
Relative density	approximately 1.1 [<i>Ref Std:</i> WATER=1]
Water solubility	6.211 mg/ml
Solubility- non-water	<i>No data available.</i>
Partition coefficient: n-octanol/water	<i>No data available.</i>
Evaporation rate	<i>No data available.</i>
Vapour density	2.63 [<i>Ref Std:</i> AIR=1]
Decomposition temperature	<i>No data available.</i>
Viscosity	<=30 mPa-s [@ 25 °C]
Density	1.1 g/ml

9.2. Other information

EU Volatile Organic Compounds	839.3 g/l
Molecular weight	No data available.
Percent volatile	<=76 %

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

Heat.
Sparks and/or flames.

10.5 Incompatible materials

Strong oxidising agents.
Strong acids.
Strong bases.

10.6 Hazardous decomposition products

Substance **Condition** None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

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. 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 Acota 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

Vapours from heated material may cause irritation of the respiratory system: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, nose and throat pain. May cause additional health effects (see below).

Skin contact

Contact with the skin during product use is not expected to result in significant irritation.

Eye contact

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

Ingestion

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	Ingestion		No data available; calculated ATE >5,000 mg/kg
(2-Methoxymethylethoxy)propanol	Dermal	Rabbit	LD50 > 19,000 mg/kg
(2-Methoxymethylethoxy)propanol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 50 mg/l
(2-Methoxymethylethoxy)propanol	Ingestion	Rat	LD50 5,180 mg/kg
2-Propenoic acid, 2-[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	Dermal	Rat	LD50 > 2,000 mg/kg
2-Propenoic acid, 2-[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	Ingestion	Rat	LD50 > 2,000 mg/kg
Polyether Polymer (NJTS Reg. No. 04499600-6605)	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
Polyether Polymer (NJTS Reg. No. 04499600-6605)	Ingestion	Rat	LD50 5,700 mg/kg
Toluene	Dermal	Rat	LD50 12,000 mg/kg
Toluene	Inhalation Vapour (4 hours)	Rat	LC50 30 mg/l
Toluene	Ingestion	Rat	LD50 5,550 mg/kg
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Dermal	Rat	LD50 > 2,000 mg/kg
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Ingestion	Rat	LD50 > 2,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
(2-Methoxymethylethoxy)propanol	Human and animal	No significant irritation
Toluene	Rabbit	Irritant
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
(2-Methoxymethylethoxy)propanol	Rabbit	Mild irritant
Toluene	Rabbit	Moderate irritant
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Rabbit	Mild irritant

Skin Sensitisation

Name	Species	Value
(2-Methoxymethylethoxy)propanol	Human	Not classified
2-Propenoic acid, 2-[methyl[(1,1,2,2,3,3,4,4,4nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3-mercapto-1,2propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	Guinea pig	Not classified
Toluene	Guinea pig	Not classified
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Guinea pig	Sensitising

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
(2-Methoxymethylethoxy)propanol	In Vitro	Not mutagenic
2-Propenoic acid, 2-[methyl[(1,1,2,2,3,3,4,4,4nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3-mercapto-1,2propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	In Vitro	Not mutagenic
Toluene	In Vitro	Not mutagenic
Toluene	In vivo	Not mutagenic
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Toluene	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
Toluene	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Toluene	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
(2-Methoxymethylethoxy)propanol	Inhalation	Not classified for development	Multiple animal species	NOAEL 1.82 mg/l	during organogenesis
Toluene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	Not classified for male reproduction	Rat	NOAEL 2.3 mg/l	1 generation
Toluene	Ingestion	Toxic to development	Rat	LOAEL 520 mg/kg/day	during gestation
Toluene	Inhalation	Toxic to development	Human	NOAEL Not available	poisoning and/or abuse
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
(2-Methoxymethylethoxy)propanol	Dermal	central nervous system depression	Not classified	Rabbit	NOAEL 2,850 mg/kg	
(2-Methoxymethylethoxy)propanol	Inhalation	central nervous system depression	Not classified	Rat	LOAEL 3.07 mg/l	7 hours
(2-Methoxymethylethoxy)propanol	Ingestion	central nervous system depression	Not classified	Rat	LOAEL 5,000 mg/kg	
Toluene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Toluene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL 0.004 mg/l	3 hours
Toluene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure
(2-Methoxymethylethoxy)propanol	Dermal	kidney and/or bladder heart endocrine system hematopoietic system liver respiratory system	Not classified	Rabbit	NOAEL 9,500 mg/kg/day	90 days

(2-Methoxymethylethoxy)pro panol	Inhalation	heart hematopoietic system liver immune system nervous system eyes kidney and/or bladder	Not classified	Rat	NOAEL 1.21 mg/l	90 days
(2-Methoxymethylethoxy)pro panol	Ingestion	liver heart endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4nonafluorobutyl)sulfonyl]amino]ethyl ester,telomer with 3-mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,	Ingestion	heart endocrine system hematopoietic system liver immune system nervous system kidney and/or bladder respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	28 days
Toluene	Inhalation	auditory system nervous system eyes olfactory system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	poisoning and/or abuse
Toluene	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 2.3 mg/l	15 months
Toluene	Inhalation	heart liver kidney and/or bladder	Not classified	Rat	NOAEL 11.3 mg/l	15 weeks
Toluene	Inhalation	endocrine system	Not classified	Rat	NOAEL 1.1 mg/l	4 weeks
Toluene	Inhalation	immune system	Not classified	Mouse	NOAEL Not available	20 days
Toluene	Inhalation	bone, teeth, nails, and/or hair	Not classified	Mouse	NOAEL 1.1 mg/l	8 weeks
Toluene	Inhalation	hematopoietic system vascular system	Not classified	Human	NOAEL Not available	occupational exposure
Toluene	Inhalation	gastrointestinal tract	Not classified	Multiple animal species	NOAEL 11.3 mg/l	15 weeks
Toluene	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 625 mg/kg/day	13 weeks
Toluene	Ingestion	heart	Not classified	Rat	NOAEL 2,500 mg/kg/day	13 weeks

Toluene	Ingestion	liver kidney and/or bladder	Not classified	Multiple animal species	NOAEL 2,500 mg/kg/day	13 weeks
Toluene	Ingestion	hematopoietic system	Not classified	Mouse	NOAEL 600 mg/kg/day	14 days
Toluene	Ingestion	endocrine system	Not classified	Mouse	NOAEL 105 mg/kg/day	28 days
Toluene	Ingestion	immune system	Not classified	Mouse	NOAEL 105 mg/kg/day	4 weeks
					mg/kg/day	
2-[Methyl[(nonafluorobutyl) sulphonyl]amino]ethyl acrylate	Ingestion	liver kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 100 mg/kg/day	
2-[Methyl[(nonafluorobutyl) sulphonyl]amino]ethyl acrylate	Ingestion	endocrine system gastrointestinal tract hematopoietic system immune system heart bone, teeth, nails, and/or hair nervous system eyes respiratory system vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	

Aspiration Hazard

Name	Value
Toluene	Aspiration hazard

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 Acota assessments.

12.1. Toxicity

No product test data available.

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
(2-Methoxymethylethoxy) propanol	34590-94-8	Fathead minnow	Experimental	96 hours	LC50	>10,000 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Green Algae	Experimental	72 hours	EC50	>969 mg/l



Specialty material solutions

Fluorosurfactant FC-4434

(2-Methoxymethylethoxy) propanol	34590-94-8	Water flea	Experimental	48 hours	LC50	1,919 mg/l
(2-Methoxymethylethoxy) propanol	34590-94-8	Green Algae	Experimental	72 hours	Effect Concentration 10%	133 mg/l
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonylamino]ethyl ester,telomer with 3mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,	1017237-78-3	Copepods	Experimental	48 hours	EC50	132 mg/l
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonylamino]ethyl ester,telomer with 3-	1017237-78-3	Diatom	Experimental	72 hours	EC50	3.24 mg/l

mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,						
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonylamino]ethyl ester,telomer with 3mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,	1017237-78-3	Fathead minnow	Experimental	96 hours	LC50	765 mg/l
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonylamino]ethyl ester,telomer with 3mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,	1017237-78-3	Fish	Experimental	96 hours	LC50	>3.2 mg/l
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonylamino]ethyl ester,telomer with 3mercapto-1,2propanediol, 2methyloxirane polymer with oxirane di-2propenoate,	1017237-78-3	Green algae	Experimental	72 hours	EC50	>1,000 mg/l

2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonyl]amino]ethyl ester, telomer with 3-mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	1017237-78-3	Water flea	Experimental	48 hours	EC50	99 mg/l
Polyether Polymer (NJTS Reg. No. 04499600-6605)	Trade Secret		Data not available or insufficient for classification			
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Water flea	Experimental	48 hours	EC50	1.2 mg/l
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Green algae	Experimental	72 hours	NOEC	0.34 mg/l
Toluene	108-88-3	Coho Salmon	Experimental	96 hours	LC50	5.5 mg/l
Toluene	108-88-3	Fish other	Experimental	96 hours	LC50	6.41 mg/l
Toluene	108-88-3	Green Algae	Experimental	72 hours	EC50	12.5 mg/l
Toluene	108-88-3	Water flea	Experimental	48 hours	EC50	3.78 mg/l
Toluene	108-88-3	Coho salmon	Experimental	40 days	NOEC	1.39 mg/l
Toluene	108-88-3	Water flea	Experimental	7 days	NOEC	0.74 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
(2-Methoxymethylethoxy)prop anol	34590-94-8	Experimental Biodegradation	28 days	BOD	75 % BOD/ThBOD	OECD 301F - Manometric respirometry
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonyl]amino]ethyl ester, telomer with 3-mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	1017237-78-3	Experimental Hydrolysis		Hydrolytic half-life	48.5 years (t _{1/2})	Other methods
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4-nonafluorobutyl)sulfonyl]amino]ethyl ester, telomer with 3-mercapto-1,2-propanediol, 2-methyloxirane polymer with oxirane di-2-propenoate,	1017237-78-3	Experimental Biodegradation	28 days	BOD	3 % weight	OECD 301D - Closed bottle test
Polyether Polymer (NJTS Reg. No. 04499600-6605)	Trade Secret	Data not available/insufficient			N/A	

2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Experimental Hydrolysis		Hydrolytic half-life	0.6 years (t _{1/2})	Other methods
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Experimental Aquatic Biodegrad. - Aerobic	28 days	% CO ₂ produced	2 % weight	OECD 301B - Modified Sturm or CO ₂
Toluene	108-88-3	Experimental Photolysis		Photolytic half-life (in air)	5.2 days (t _{1/2})	Other methods
Toluene	108-88-3	Experimental Biodegradation	20 days	BOD	80 % weight	

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
(2-Methoxymethylethoxy)propanol	34590-94-8	Experimental Bioconcentration		Log Kow	0.0061	Other methods
2-Propenoic acid, 2[methyl[(1,1,2,2,3,3,4,4,4nonafluorobutyl)sulphonyl]amino]ethyl ester, telomer with 3-mercapto-1,2-propanediol, 2-methylloxirane polymer with oxirane di-2-propenoate,	1017237-78-3	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Polyether Polymer (NJTS Reg. No. 04499600-6605)	Trade Secret	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2-[Methyl[(nonafluorobutyl)sulphonyl]amino]ethyl acrylate	67584-55-8	Estimated Bioconcentration		Bioaccumulation factor	5	Other methods
Toluene	108-88-3	Experimental Bioconcentration		Log Kow	2.73	Other methods

12.4. Mobility in soil

Please contact manufacturer for more details

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

No information available.

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 Acota, 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)

- 070103* Organic halogenated solvents, washing liquids and mother liquors
- 14 06 02* Other halogenated solvents and solvent mixtures

SECTION 14: Transportation information

ADR/RID: UN3082, NOT RESTRICTED AS PER SPECIAL PROVISION 375, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXEMPTION, (FLUOROACRYLATE COPOLYMER), III, --.

IMDG-CODE: UN3082, NOT RESTRICTED AS PER IMDG CODE 2.10.2.7, MARINE POLLUTANT EXCEPTION, (FLUOROACRYLATE COPOLYMER), III, IMDG-Code segregation code: NONE, EMS: --.

ICAO/IATA: UN3082, NOT RESTRICTED AS PER SPECIAL PROVISION A197, ENVIRONMENTALLY HAZARDOUS SUBSTANCE EXEMPTION, (FLUOROACRYLATE COPOLYMER), III.

SECTION 15: Regulatory information

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

Carcinogenicity

<u>Ingredient</u>	<u>CAS Nbr</u>	<u>Classification</u>	<u>Regulation</u>
Toluene	108-88-3	Gr. 3: Not classifiable	International Agency for Research on Cancer

Global inventory status

Contact Acota for more information. The components of this material are in compliance with the provisions of the Korea Chemical Control Act. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Japan Industrial Safety and Health Law. Certain restrictions may apply. Contact the selling division for additional information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. 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.

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

SECTION 16: Other information**List of relevant H statements**

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Revision information:

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

Section 7: Precautions safe handling information information was modified.

Section 11: Reproductive Toxicity Table information was modified.

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

Section 12: Component ecotoxicity information information was modified.

Section 12: No PBT/vPvB information available warning information was modified.

Section 12: Persistence and Degradability information information was modified.

Section 13: 13.1. Waste disposal note information was modified.

Section 15: Chemical Safety Assessment 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.