



**ANGUS  
FIRE**

# Alcoseal<sup>C6</sup> 3/3

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Issue date: 18/12/2014

Revision date: 17/03/2023

Supersedes version of: 16/04/2021

Version: 3.0

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : Alcoseal<sup>C6</sup> 3/3  
UFI : 5MX1-60XE-P005-EWX9  
Product code : FNC 07 06  
Type of product : Firefighting foam concentrate (AR-FFFP)

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

##### 1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial  
For professional use only  
Use of the substance/mixture : Firefighting foam concentrate

##### 1.2.2. Uses advised against

No additional information available

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

ANGUS FIRE Ltd  
Station Road  
LA2 7NA Bentham - United Kingdom  
T +44(0) 1524 264000 - F +44(0)1524 264180  
[general.enquiries@angus.co.uk](mailto:general.enquiries@angus.co.uk) - [www.angusfire.co.uk](http://www.angusfire.co.uk)

#### 1.4. Emergency telephone number

Emergency number : +44(0) 1524 264000 (Standard office hours: Monday to Friday 8:30am - 4:30pm GMT)  
Contact person: EH&S Manager

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	Only for healthcare professionals

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin sensitisation, Category 1 H317

Reproductive toxicity, Category 2 H361

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

GHS08

Signal word (CLP) : Warning  
Hazardous ingredients : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, 2-methyl-2,4-pentanediol, 1,2-benzisothiazol-3(2H)-one, 2-methyl-2H-isothiazol-3-one  
Hazard statements (CLP) : H317 - May cause an allergic skin reaction.  
H361 - Suspected of damaging the unborn child.  
Precautionary statements (CLP) : P272 - Contaminated work clothing should not be allowed out of the workplace.  
P280 - Wear eye protection, protective clothing, protective gloves  
P302+P352 - IF ON SKIN: Wash with plenty of water  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.

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P501 - Dispose in a safe manner in accordance with local/national regulations

### 2.3. Other hazards

Other hazards which do not result in classification : This product contains fluoroalkyl surfactants (which are and include per- or poly- fluoroalkyl substances, "PFAS") and is required to be disposed of by high temperature incineration. See Section 13 for additional information.

PBT: not relevant – no registration required

vPvB: not relevant – no registration required

Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-methyl-2,4-pentanediol substance with national workplace exposure limit(s) (BE, FR, GB)	(CAS-No.) 107-41-5 (EC-No.) 203-489-0 (EC Index-No.) 603-053-00-3 (REACH-no) 01-2119539582-35	4 – 10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Repr. 2, H361d
Ethanol substance with national workplace exposure limit(s) (BE, FR, GB, NL)	(CAS-No.) 64-17-5 (EC-No.) 200-578-6 (EC Index-No.) 603-002-00-5	1 – 4	Flam. Liq. 2, H225 Eye Irrit. 2, H319
Fluorosurfactant blend	(CAS-No.) Proprietary	1 – 4	Aquatic Chronic 2, H411
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	(CAS-No.) 4719-04-4 (EC-No.) 225-208-0 (EC Index-No.) 613-114-00-6 (REACH-no) 01-2119529226-41	0.1 – 1	Acute Tox. 4 (Oral), H302 Acute Tox. 2 (Inhalation:dust,mist), H330 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT RE 1, H372
2-methyl-2-propanol substance with national workplace exposure limit(s) (BE, FR, GB)	(CAS-No.) 75-65-0 (EC-No.) 200-889-7 (EC Index-No.) 603-005-00-1 (REACH-no) 01-2119444321-51	0.05 – 1	Flam. Liq. 2, H225 Acute Tox. 4 (Inhalation:dust,mist), H332 Eye Irrit. 2, H319 STOT SE 3, H335
Diethanolamine substance with national workplace exposure limit(s) (BE, FR)	(CAS-No.) 111-42-2 (EC-No.) 203-868-0 (EC Index-No.) 603-071-00-1	< 0.1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373
1,2-benzisothiazol-3(2H)-one	(CAS-No.) 2634-33-5 (EC-No.) 220-120-9 (EC Index-No.) 613-088-00-6 (REACH-no) 01-2120761540-60	< 0.05	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400
2-methyl-2H-isothiazol-3-one	(CAS-No.) 2682-20-4 (EC-No.) 220-239-6 (EC Index-No.) 613-326-00-9 (REACH-no) 01-2120764690-50	< 0.05	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation), H330 Acute Tox. 2 (Inhalation:dust,mist), H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

#### Specific concentration limits:

Name	Product identifier	Specific concentration limits
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	(CAS-No.) 4719-04-4 (EC-No.) 225-208-0 (EC Index-No.) 613-114-00-6 (REACH-no) 01-2119529226-41	( 0.1 ≤ C ≤ 100) Skin Sens. 1, H317
1,2-benzisothiazol-3(2H)-one	(CAS-No.) 2634-33-5 (EC-No.) 220-120-9 (EC Index-No.) 613-088-00-6 (REACH-no) 01-2120761540-60	( 0.05 ≤ C ≤ 100) Skin Sens. 1, H317

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### Specific concentration limits:

Name	Product identifier	Specific concentration limits
2-methyl-2H-isothiazol-3-one	(CAS-No.) 2682-20-4 (EC-No.) 220-239-6 (EC Index-No.) 613-326-00-9 (REACH-no) 01-2120764690-50	( 0.0015 ≤C ≤ 100) Skin Sens. 1A, H317

Comments : This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly-fluoroalkyl substances), see Sections 13 & 15 for additional information.

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects : Suspected of damaging the unborn child.

Symptoms/effects after inhalation : May cause an allergic skin reaction.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : No specific measures are necessary. This product is a fire extinguishing medium.

Unsuitable extinguishing media : Not applicable.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : No fire hazard.

### 5.3. Advice for firefighters

Firefighting instructions : Not applicable.

Protection during firefighting : Not applicable.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 6.4. Reference to other sections

8. Exposure controls/personal protection. 13. Disposal considerations.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Wear recommended personal protective equipment. Read and follow manufacturer's recommendations. Handle in accordance with good industrial hygiene and safety procedures. Read and follow the Safety Data Sheet (SDS) before use. Avoid breathing vapours. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

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Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

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

Storage conditions : Store in original container. Keep container tightly closed. Store at temperatures not exceeding 60°C (140°F) (intermittent). Protect from sunlight. Protect from freezing. Keep/Store away from incompatible materials.

### 7.3. Specific end use(s)

Firefighting foam concentrate.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

2-methyl-2,4-pentanediol (107-41-5)		
Belgium	OEL TWA	123 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	25 ppm
France	VLE (OEL C/STEL)	125 mg/m <sup>3</sup>
France	VLE (OEL C/STEL) [ppm]	25 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	123 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	25 ppm
United Kingdom	WEL STEL (OEL STEL)	123 mg/m <sup>3</sup>
United Kingdom	WEL STEL (OEL STEL) [ppm]	25 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	25 ppm (Vapor fraction)
USA - ACGIH	ACGIH OEL STEL	10 mg/m <sup>3</sup> (Inhalable fraction, Aerosol only)
USA - ACGIH	ACGIH OEL STEL [ppm]	50 ppm (Vapor fraction)
Diethanolamine (111-42-2)		
Belgium	OEL TWA	1 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	0.2 ppm
France	VME (OEL TWA)	15 mg/m <sup>3</sup>
France	VME (OEL TWA) [ppm]	3 ppm
USA - ACGIH	ACGIH OEL TWA	1 mg/m <sup>3</sup> (Inhalable fraction and vapor)
2-methyl-2-propanol (75-65-0)		
Belgium	OEL TWA	307 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	100 ppm
France	VME (OEL TWA)	300 mg/m <sup>3</sup>
France	VME (OEL TWA) [ppm]	100 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	308 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	100 ppm
United Kingdom	WEL STEL (OEL STEL)	462 mg/m <sup>3</sup>
United Kingdom	WEL STEL (OEL STEL) [ppm]	150 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	100 ppm
Ethanol (64-17-5)		
Belgium	OEL TWA	1907 mg/m <sup>3</sup>
Belgium	OEL TWA [ppm]	1000 ppm
France	VME (OEL TWA)	1900 mg/m <sup>3</sup>
France	VME (OEL TWA) [ppm]	1000 ppm
France	VLE (OEL C/STEL)	9500 mg/m <sup>3</sup>
France	VLE (OEL C/STEL) [ppm]	5000 ppm
Netherlands	TGG-8u (OEL TWA)	260 mg/m <sup>3</sup>
Netherlands	TGG-8u (OEL TWA) [ppm]	136 ppm
Netherlands	TGG-15min (OEL STEL)	1900 mg/m <sup>3</sup>
Netherlands	TGG-15min (OEL STEL) [ppm]	992 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	1920 mg/m <sup>3</sup>
United Kingdom	WEL TWA (OEL TWA) [2]	1000 ppm
USA - ACGIH	ACGIH OEL STEL [ppm]	1000 ppm

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### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure adequate ventilation. Follow the exposure limits given on this material safety data sheet.

#### Personal protective equipment:

Wear recommended personal protective equipment.

#### Hand protection:

Wear protective gloves (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): nitrile rubber (NBR) - 0.2 mm coating thickness

#### Eye protection:

Sealed safety goggles

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment (recommended filter type A2/P2)



#### Thermal hazard protection:

Wear thermal protective clothing, when necessary.

#### Environmental exposure controls:

Contain spills. Prevent releases. Observe national regulations on emissions. Ensure all national/local regulations are observed.

#### Other information:

Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Colour	: Brown.
Odour	: Characteristic.
Odour threshold	: No data available
pH	: 6.6 – 7.6
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: -11 °C
Boiling point	: No data available
Flash point	: > 100 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: No data available
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Density	: 1.09 – 1.13
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 850 – 1750 cP
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is stable and non reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Incompatible materials. Extremely high or low temperatures.

### 10.5. Incompatible materials

Alkali metals. Oxidizing agent. Water reactive substances.

### 10.6. Hazardous decomposition products

Carbon oxides. Sulphur oxides. Hydrogen fluoride. Nitrogen oxides (NOx). Sodium oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)</b>	
LD50 oral rat	763 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, Rat, Male / female, Experimental value, Dermal)
LC50 Inhalation - Rat	0.371 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol))
<b>2-methyl-2,4-pentanediol (107-41-5)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 420: Acute Oral toxicity – Acute Toxic Class Method, Rat, Male / female, Experimental value, Oral, 15 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 15 day(s))
LC50 Inhalation - Rat	> 55 mg/l (Equivalent or similar to OECD 403, 8 h, Rat, Male, Experimental value, Inhalation (vapours), 14 day(s))
<b>Diethanolamine (111-42-2)</b>	
LD50 oral rat	1600 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
<b>2-methyl-2-propanol (75-65-0)</b>	
LD50 oral rat	3046 mg/kg bodyweight (EPA OPPTS 870.1100: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg bodyweight (EU Method B.3: Acute toxicity (dermal), 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 36 mg/l (EPA OPPTS 870.1300: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
<b>Ethanol (64-17-5)</b>	
LD50 oral rat	10470 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 15800 mg/kg bodyweight (Rabbit, Experimental value, Dermal)
LC50 Inhalation - Rat	124.7 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
<b>1,2-benzisothiazol-3(2H)-one (2634-33-5)</b>	
LD50 oral rat	490 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
<b>2-methyl-2H-isothiazol-3-one (2682-20-4)</b>	
LD50 oral rat	120 mg/kg bodyweight (EPA OPPTS 870.1100: Acute Oral Toxicity, Rat, Female, Experimental value, Oral, 7 day(s))
LD50 dermal rat	242 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

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2-methyl-2H-isothiazol-3-one (2682-20-4)	
LC50 Inhalation - Rat	0.11 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 7 day(s))
Skin corrosion/irritation	: Not classified pH: 6.6 – 7.6
Serious eye damage/irritation	: Not classified pH: 6.6 – 7.6
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging the unborn child.
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)	
LC50 - Fish [1]	16.07 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Brachydanio rerio, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	11.9 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 algae	6.66 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
2-methyl-2,4-pentanediol (107-41-5)	
LC50 - Fish [1]	9450 mg/l (Equivalent or similar to OECD 203, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	5410 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	> 429 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
Diethanolamine (111-42-2)	
LC50 - Fish [1]	460 mg/l (96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	30.1 – 89.9 mg/l (ASTM E729-80, 48 h, Ceriodaphnia dubia, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	9.5 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)
2-methyl-2-propanol (75-65-0)	
LC50 - Fish [1]	> 961 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	933 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	> 976 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
Ethanol (64-17-5)	
LC50 - Fish [1]	15300 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 72h - Algae [1]	275 mg/l (Equivalent or similar to OECD 201, Chlorella vulgaris, Static system, Fresh water, Experimental value, Growth rate)
1,2-benzisothiazol-3(2H)-one (2634-33-5)	
LC50 - Fish [1]	2.18 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	2.94 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, Lethal)
ErC50 algae	150 µg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Experimental value, GLP)
2-methyl-2H-isothiazol-3-one (2682-20-4)	
ErC50 algae	0.23 mg/l (Equivalent or similar to OECD 201, 96 h, Pseudokirchneriella subcapitata, Static system, Experimental value, GLP)

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### 12.2. Persistence and degradability

<b>2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)</b>	
Persistence and degradability	Readily biodegradable in water.
<b>2-methyl-2,4-pentanediol (107-41-5)</b>	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.2 g O <sub>2</sub> /g substance
ThOD	2.3 g O <sub>2</sub> /g substance
<b>Diethanolamine (111-42-2)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.22 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.52 g O <sub>2</sub> /g substance
ThOD	2.13 g O <sub>2</sub> /g substance
<b>2-methyl-2-propanol (75-65-0)</b>	
Persistence and degradability	Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.18 g O <sub>2</sub> /g substance
ThOD	2.59 g O <sub>2</sub> /g substance
<b>Ethanol (64-17-5)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 – 0.967 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.7 g O <sub>2</sub> /g substance
ThOD	2.1 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.43
<b>1,2-benzisothiazol-3(2H)-one (2634-33-5)</b>	
Persistence and degradability	Not readily biodegradable in water.
<b>2-methyl-2H-isothiazol-3-one (2682-20-4)</b>	
Persistence and degradability	Not readily biodegradable in water.

### 12.3. Bioaccumulative potential

<b>Alcoseal<sup>C6</sup> 3/3</b>	
Bioaccumulative potential	The product is not expected to bioaccumulate.
<b>2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)</b>	
Partition coefficient n-octanol/water (Log Pow)	-2.3 – -1.3 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 24 °C)
Bioaccumulative potential	Not bioaccumulative.
<b>2-methyl-2,4-pentanediol (107-41-5)</b>	
Partition coefficient n-octanol/water (Log Pow)	0.58 (QSAR, KOWWIN)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>Diethanolamine (111-42-2)</b>	
BCF - Fish [1]	3.162 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-2.18 – -1.43 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.
<b>2-methyl-2-propanol (75-65-0)</b>	
Partition coefficient n-octanol/water (Log Pow)	0.317 (Practical experience/observation, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 22.5 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>Ethanol (64-17-5)</b>	
BCF - Fish [1]	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Partition coefficient n-octanol/water (Log Pow)	-0.31 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.
<b>1,2-benzisothiazol-3(2H)-one (2634-33-5)</b>	
BCF - Fish [1]	6.62 (Equivalent or similar to OECD 305, 56 day(s), Lepomis macrochirus, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-0.9 – 0.99 (Experimental value, EU Method A.8: Partition Coefficient, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).



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<b>2-methyl-2H-isothiazol-3-one (2682-20-4)</b>	
BCF - Fish [1]	5.75 – 48.1 (56 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	-0.486 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)</b>	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1 (log Koc, PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

<b>2-methyl-2,4-pentanediol (107-41-5)</b>	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

<b>Diethanolamine (111-42-2)</b>	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.98 – 1 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

<b>2-methyl-2-propanol (75-65-0)</b>	
Surface tension	69.8 mN/m (21 °C, 1.09 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.324 – 0.707 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

<b>Ethanol (64-17-5)</b>	
Surface tension	22.31 mN/m (20 °C, 100 %)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.2 (log Koc, Experimental value)
Ecology - soil	Highly mobile in soil.

<b>1,2-benzisothiazol-3(2H)-one (2634-33-5)</b>	
Surface tension	72.6 mN/m (20 °C, 0.1 %, EU Method A.5: Surface tension)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.97 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

<b>2-methyl-2H-isothiazol-3-one (2682-20-4)</b>	
Surface tension	68.8 mN/m (19.5 °C, 1 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.06 (log Koc, OECD 106: Adsorption/Desorption Using a Batch Equilibrium Method, Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

### 12.5. Results of PBT and vPvB assessment

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PBT: not relevant – no registration required	
vPvB: not relevant – no registration required	

Component	
2-methyl-2,4-pentanediol (107-41-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Ethanol (64-17-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
2-methyl-2-propanol (75-65-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Diethanolamine (111-42-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
1,2-benzisothiazol-3(2H)-one (2634-33-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
2-methyl-2H-isothiazol-3-one (2682-20-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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### 12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

This product contains PFAS. Local requirements for waste disposal may be more restrictive or otherwise different from national regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.

#### Concentrate

Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantities of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 1000°C with a minimum residence time of 2 seconds.

#### Foam/Foam Solution

Prevent foam/foam solution from entering ground water, surface water or storm drains. Small quantities of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 1000°C with a minimum residence time of 2 seconds.

**NOTE:** Please consult Angus Fire for additional information regarding the disposal of foam concentrates and foam solutions or visit <https://angusfire.co.uk/use-discharge-and-disposal-of-firefighting-foam-products/>.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Ecology - waste materials : Avoid release to the environment.  
European List of Waste (LoW) code : 16 03 05\* - organic wastes containing dangerous substances

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

### 14.6. Special precautions for user

#### - Overland transport

Not applicable

#### - Transport by sea

Not applicable

#### - Air transport

Not applicable

#### - Inland waterway transport

Not applicable

#### - Rail transport

Not applicable

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.1.1. EU-Regulations**

Listed on REACH Annex XVII (Restriction Conditions). The following restrictions are applicable:

3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	2-methyl-2-propanol ; Ethanol
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Alcoseal <sup>C6</sup> 3/3 ; 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol ; 2-methyl-2,4-pentanediol ; 2-methyl-2-propanol ; Ethanol
3(c) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1	Fluorosurfactant blend
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	2-methyl-2-propanol ; Ethanol

Contains no substance(s) listed on the REACH Candidate List

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

**15.1.2. National regulations****France**

Occupational diseases : RG 84 - Affections engendrées par les solvants organiques liquides à usage professionnel

**Germany**

Regulatory reference : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**

SZW-lijst van kankerverwekkende stoffen : Ethanol is listed

SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : Ethanol is listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : Ethanol is listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : Ethanol is listed

**Denmark**Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product  
Pregnant/breastfeeding women working with the product must not be in direct contact with the product**15.2. Chemical safety assessment**

No additional information available

**SECTION 16: Other information**

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Acute Tox. 2 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 2
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4

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Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child
H372	Causes damage to organs through prolonged or repeated exposure.
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.
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

SDS EU (REACH Annex II) - Angus Fire

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*