

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product form : Mixture
Product name : FP600
Product code : FC 02 10
Type of product : Firefighting foam concentrate (FP)

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
Bentham LA2 7NA - United Kingdom
T +44 1524 264000 - F +441524 264180
general.enquiries@angusuk.co.uk - www.angusfire.co.uk

1.4. Emergency telephone number

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

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

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

Skin Sens. 1 H317

Aquatic Chronic 3 H412

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

R43

R52/53

Full text of R-phrases: 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

Signal word (CLP) : Warning
Hazardous ingredients : 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol
Hazard statements (CLP) : H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects
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
P501 - Dispose in a safe manner in accordance with local/national regulations.

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2.3. Other hazards

PBT: not relevant – no registration required

vPvB: not relevant – no registration required

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Directive 67/548/EEC
2-methyl-2,4-pentanediol	(CAS No) 107-41-5 (EC no) 203-489-0 (EC index no) 603-053-00-3	1 - 4	Xi; R36/38
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	< 1	Xn; R22 R43
Zinc oxide	(CAS No) 1314-13-2 (EC no) 215-222-5 (EC index no) 030-013-00-7 (REACH-no) 01-2119463881-32	< 1	N; R50/53
2-Aminoethanol substance with a Community workplace exposure limit	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	< 1	Xn; R20/21/22 C; R34

Name	Product identifier	Specific concentration limits
2-methyl-2,4-pentanediol	(CAS No) 107-41-5 (EC no) 203-489-0 (EC index no) 603-053-00-3	(C >= 10) Xi;R36/38
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	(C >= 0.1) R43
2-Aminoethanol	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	(5 <= C < 10) Xi;R36/37/38 (C >= 10) C;R34

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-methyl-2,4-pentanediol	(CAS No) 107-41-5 (EC no) 203-489-0 (EC index no) 603-053-00-3	1 - 4	Skin Irrit. 2, H315 Eye Irrit. 2, H319
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	< 1	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317
Zinc oxide	(CAS No) 1314-13-2 (EC no) 215-222-5 (EC index no) 030-013-00-7 (REACH-no) 01-2119463881-32	< 1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2-Aminoethanol substance with a Community workplace exposure limit	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	< 1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1A, H314 STOT SE 3, H335

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	(C >= 0.1) Skin Sens. 1, H317
2-Aminoethanol	(CAS No) 141-43-5 (EC no) 205-483-3 (EC index no) 603-030-00-8	(C >= 5) STOT SE 3, H335

Full text of R- and H-phrases: 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 you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

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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/injuries 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

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid 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.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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). 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)		
EU	IOELV TWA (mg/m ³)	123 mg/m ³
EU	IOELV TWA (ppm)	25 ppm
EU	IOELV STEL (mg/m ³)	123 mg/m ³
EU	IOELV STEL (ppm)	25 ppm
2-Aminoethanol (141-43-5)		
EU	IOELV TWA (mg/m ³)	2.5 mg/m ³
EU	IOELV TWA (ppm)	1 ppm
EU	IOELV STEL (mg/m ³)	7.6 mg/m ³
EU	IOELV STEL (ppm)	3 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.
Eye protection	: Chemical goggles or safety glasses.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment.
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	: Dark brown.
Odour	: Characteristic.
Odour threshold	: No data available
pH	: 7
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: -6.5 °C
Boiling point	: 100 °C
Flash point	: > 100 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.09 - 1.11
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: 3 mm ² /s
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

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.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2-methyl-2,4-pentanediol (107-41-5)	
LD50 oral rat	3700 mg/kg (Rat; OECD 420; Experimental value; > 2000 mg/kg bodyweight; Rat)
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; Experimental value; OECD 402: acute dermal toxicity)
LD50 dermal rabbit	> 8000 mg/kg (Rabbit)

2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol (4719-04-4)	
LD50 oral rat	763 mg/kg (Rat)
LD50 dermal rat	> 2000 mg/kg (Rat)

2-Aminoethanol (141-43-5)	
LD50 oral rat	1720 mg/kg (Rat)
LD50 dermal rabbit	1018 mg/kg (Rabbit)

Skin corrosion/irritation : Not classified
Based on available data, the classification criteria are not met
pH: 7

Serious eye damage/irritation : Not classified
Based on available data, the classification criteria are not met
pH: 7

Respiratory or skin sensitisation : May cause an allergic skin reaction.
Based on available data, the classification criteria are not met

Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met

Carcinogenicity : Not classified
Based on available data, the classification criteria are not met

Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : Not classified
Based on available data, the classification criteria are not met

Specific target organ toxicity (repeated exposure) : Not classified
Based on available data, the classification criteria are not met

Aspiration hazard : Not classified
Based on available data, the classification criteria are not met

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

2-methyl-2,4-pentanediol (107-41-5)	
LC50 fishes 1	12800 mg/l (96 h; <i>Lepomis macrochirus</i>)
LC50 other aquatic organisms 1	10 - 100 mg/l (96 h)
EC50 Daphnia 1	5410 mg/l (48 h; <i>Daphnia magna</i>)
LC50 fish 2	9450 mg/l (96 h; <i>Oncorhynchus mykiss</i>)
EC50 Daphnia 2	3300 mg/l (48 h; <i>Daphnia pulex</i>)
Threshold limit other aquatic organisms 1	10 - 100,96 h
Threshold limit algae 1	> 429 mg/l (72 h; <i>Pseudokirchneriella subcapitata</i>)

2-Aminoethanol (141-43-5)	
LC50 fishes 1	150 mg/l 96 h; <i>Salmo gairdneri</i> (<i>Oncorhynchus mykiss</i>)
EC50 Daphnia 1	140 mg/l (24 h; <i>Daphnia magna</i>)
LC50 fish 2	329.16 mg/l (96 h; <i>Lepomis macrochirus</i>)
TLM fish 1	100 - 1000,96 h; Pisces
TLM other aquatic organisms 1	100 - 1000,96 h
Threshold limit algae 1	0.97 mg/l (192 h; <i>Scenedesmus quadricauda</i> ; Deceleration)
Threshold limit algae 2	35 mg/l (72 h; Algae)

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12.2. Persistence and degradability

FP600	
Persistence and degradability	May cause long-term adverse effects in the environment. The product is readily biodegradable.

2-methyl-2,4-pentanediol (107-41-5)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	2.20 g O ₂ /g substance
ThOD	2.3 g O ₂ /g substance
BOD (% of ThOD)	0.01 % ThOD

2-Aminoethanol (141-43-5)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.80 g O ₂ /g substance
Chemical oxygen demand (COD)	1.34 g O ₂ /g substance
ThOD	2.49 g O ₂ /g substance
BOD (% of ThOD)	0.32 % ThOD

12.3. Bioaccumulative potential

FP600	
Bioaccumulative potential	The product is not expected to bioaccumulate.

2-methyl-2,4-pentanediol (107-41-5)	
Log Pow	0.58 (QSAR)
Bioaccumulative potential	Low bioaccumulation potential.

2-Aminoethanol (141-43-5)	
Log Pow	-1.91

12.4. Mobility in soil

2-methyl-2,4-pentanediol (107-41-5)	
Surface tension	0.033 N/m

2-Aminoethanol (141-43-5)	
Surface tension	0.050 N/m

12.5. Results of PBT and vPvB assessment

FP600	
PBT: not relevant – no registration required	
vPvB: not relevant – no registration required	

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

Waste 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 / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

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14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

Packing group (ADN) : Not applicable

Packing group (RID) : Not applicable

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

14.6.1. Overland transport

14.6.2. Transport by sea

14.6.3. Air transport

14.6.4. Inland waterway transport

Carriage prohibited (ADN) : No

Not subject to ADN : No

14.6.5. Rail transport

Carriage prohibited (RID) : No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Contains no substance on the REACH candidate list

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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.

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Other information : None.

Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
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 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R22	Harmful if swallowed
R34	Causes burns
R36/38	Irritating to eyes and skin
R43	May cause sensitisation by skin contact
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
C	Corrosive
N	Dangerous for the environment
Xi	Irritant
Xn	Harmful

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