

Section 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Trade name or designation of the mixture Tridol ATF 1-3 Lastfire

Registration number -

Synonyms None.

Product code 150-20

Date of first issue 09-February-2012

Version number 02

Revision date 03-December-2014

Supersedes date 09-February-2012

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

Identified uses Firefighting foam concentrate.

Uses advised against None known.

Details of the supplier of the safety data sheet**Supplier**

Company name Angus Fire Ltd

Address Station Road
Bentham, Lancashire, LA2 7NA

Phone number: 0044 (0)15 2426 4000

e-mail general.enquiries@angusuk.co.uk

Contact person EH&S Manager

Emergency telephone number 0044 (0)15 2426 4000 (Standard office hours: Monday to Friday 8:30am - 4:30pm GMT)

Section 2: Hazards identification**Classification of the substance or mixture**

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Xi;R36/38

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended**Health hazards**

Skin corrosion/irritation Category 2 Causes skin irritation.

Serious eye damage/eye irritation Category 2 Causes serious eye irritation.

Hazard summary

Physical hazards Not classified for physical hazards.

Health hazards Irritating to eyes and skin.

Environmental hazards Not classified for hazards to the environment.

Specific hazards May cause respiratory tract irritation. May cause central nervous system effects.

Main symptoms Symptoms can include irritation, redness, scratching of the cornea, and tearing. Symptoms may include redness, oedema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Signal word

Warning

Hazard statements	Causes skin irritation. Causes serious eye irritation.
Precautionary statements	
Prevention	Wear protective gloves and eye/face protection. Wash thoroughly after handling.
Response	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Supplemental label information	None.
Other hazards	Not a PBT or vPvB substance or mixture.

Section 3: Composition/information on ingredients

Mixture

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
2-methylpentane-2,4-diol	10 - < 20	107-41-5 203-489-0	-	603-053-00-3	#
Classification:	DSD: Xi;R36/38				
	CLP: Skin Irrit. 2;H315, Eye Irrit. 2;H319				
Alkyl polyglycoside	1 - < 3	132778-08-6 603-654-0	-	-	
Classification:	DSD: Xi;R38-41				
	CLP: Skin Irrit. 2;H315, Eye Dam. 1;H318				

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has workplace exposure limit(s).

Composition comments The full text for all R- and H-phrases is displayed in section 16. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4: First aid measures

Description of first aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. Get medical attention, if needed.
Skin contact	Wash the skin immediately with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops and persists.
Ingestion	Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable take to hospital along with these instructions. Only induce vomiting at the instruction of medical personnel.

Most important symptoms and effects, both acute and delayed Symptoms can include irritation, redness, scratching of the cornea, and tearing. Symptoms may include redness, oedema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

Section 5: Firefighting measures

General fire hazards Product is an extinguishing medium. It does not burn or support combustion.

Extinguishing media

Suitable extinguishing media	No specific measures are required as this product is a fire extinguishing medium.
Unsuitable extinguishing media	Not applicable.

Special hazards arising from the substance or mixture Not a fire hazard.

Advice for firefighters

Special protective equipment for firefighters	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
Special firefighting procedures	No specific precautions.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Avoid contact with skin and eyes. Avoid inhalation of mists or aerosols. Provide adequate ventilation. Wear protective clothing as described in section 8 of this safety data sheet.
For emergency responders	Use personal protection recommended in Section 8 of the SDS.

Environmental precautions For large (industrial) releases, prevent spill from entering a waterway.

Methods and material for containment and cleaning up Absorb spillage with suitable absorbent material. Collect and dispose of spillage as indicated in Section 13.

Reference to other sections For personal protection, see section 8.
For waste disposal, see section 13.

Section 7: Handling and storage

Precautions for safe handling Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store at temperature below 40°C. Store above freezing. Read and follow manufacturer's recommendations. Store away from incompatible materials.

Specific end use(s) Firefighting foam concentrate.

Section 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Austria. MAK List Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	Ceiling	49 mg/m ³
	MAK	10 ppm 49 mg/m ³ 10 ppm

Belgium. Exposure Limit Values. Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	TWA	123 mg/m ³
		25 ppm

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984 Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	VLE	125 mg/m ³
		25 ppm

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG) Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	TWA	49 mg/m ³
		10 ppm

Greece. OELs (Decree No. 90/1999, as amended) Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	STEL	125 mg/m ³
	TWA	25 ppm 125 mg/m ³ 25 ppm

Italy. OELs Components

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	Ceiling	25 ppm

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	Ceiling	100 mg/m3 20 ppm

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	Ceiling	120 mg/m3

Spain. Occupational Exposure Limits

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	STEL	123 mg/m3 25 ppm

Sweden. Occupational Exposure Limit Values

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	Ceiling	120 mg/m3 25 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	STEL	98 mg/m3 20 ppm
	TWA	49 mg/m3 10 ppm

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
2-methylpentane-2,4-diol (107-41-5)	STEL	123 mg/m3 25 ppm
	TWA	123 mg/m3 25 ppm

Recommended monitoring procedures Follow standard monitoring procedures.

DNEL Not available.

PNEC Not available.

Exposure controls

Appropriate engineering controls Ensure adequate ventilation, especially in confined areas. Observe occupational exposure limits and minimise the risk of exposure.

Individual protection measures, such as personal protective equipment

General information Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear approved safety goggles.

Skin protection

- Hand protection Wear suitable gloves. Butyl rubber gloves are recommended. Suitable gloves can be recommended by the glove supplier.

- Other Wear suitable protective clothing.

Respiratory protection In case of inadequate ventilation: Use respiratory equipment with combination filter, type A2/P2.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Handle in accordance with good industrial hygiene and safety practices. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Contain spills and prevent releases and observe national regulations on emissions. Environmental manager must be informed of all major spillages.

Section 9: Physical and chemical properties**Information on basic physical and chemical properties**

Physical state	Liquid.
Form	Liquid.
Colour	Pale yellow.

Odour	Organic.
Odour threshold	Not available.
pH	6,5 - 8
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	100 °C (212 °F) at 760 mmHg
Flash point	> 98 °C (> 208,4 °F)
Auto-ignition temperature	Not applicable.
Flammability (solid, gas)	Not applicable.
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Oxidising properties	Not oxidizing.
Explosive properties	Not explosive.
Explosive limit	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Relative density	1 at 20°C
Solubility (water)	Completely soluble in water.
Partition coefficient (n-octanol/water)	No data available.
Decomposition temperature	Not available.
Viscosity	Not available.
Percent volatile	Not available.
Other information	Not available. No relevant additional information available.

Section 10: Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Contact with incompatible materials. Excessive heat. Freezing (Product properties are unaffected).
Incompatible materials	Strong oxidising agents. Strong acids. Strong bases.
Hazardous decomposition products	Carbon oxides. Sulphur oxides. Sodium oxides. Hydrogen fluoride.

Section 11: Toxicological information

General information	The information in this section is for the individual ingredients that are expected to contribute to the potential health effects of this product.
Information on likely routes of exposure	
Ingestion	May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Symptoms	Symptoms can include irritation, redness, scratching of the cornea, and tearing. Symptoms may include redness, drying and cracking of the skin.

Information on toxicological effects

Acute toxicity	Causes skin and eye irritation. May cause central nervous system effects.
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Components

Test results

2-methylpentane-2,4-diol (107-41-5)	Acute Oral LD50 Rat: 4,79 g/kg
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Skin corrosion/irritation	Prolonged contact may cause dryness of the skin.
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Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory sensitisation	No data available.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	No data available.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.
Mixture versus substance information	None known.
Other information	Persons with pre-existing skin disorders may be more susceptible to the effects of the product.

Section 12: Ecological information

Toxicity

Product	Test results
Tridol ATF 1-3 Lastfire (Mixture)	LC50 Rainbow trout (<i>Oncorhynchus mykiss</i>): 500 mg/l 96 hours
Components	Test results
2-methylpentane-2,4-diol (107-41-5)	EC50 Water flea (<i>Ceriodaphnia reticulata</i>): 2400 - 3200 mg/l 48 hours LC50 Bleak (<i>Alburnus alburnus</i>): 7000 - 9100 mg/l 96 hours

Persistence and degradability	The product is biodegradable. COD: 0,34 gg-1 BOD: 0,06 gg-1/7 days. BOD: 0,21 gg-1/14 days. BOD: 0,24 gg-1/21 days. BOD: 0,27 gg-1/28 days.
Bioaccumulative potential	The product is not expected to bioaccumulate.
Mobility	The product is water soluble and may spread in water systems.
Environmental fate - Partition coefficient	No data available.
Mobility in soil	No data available.
Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13: Disposal considerations

Waste treatment methods

Residual waste	Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging	Dispose of in accordance with local regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	16 03 05* Waste codes should be assigned by the user based on the application for which the product was used.
Disposal methods/information	Dispose of waste and residues in accordance with local authority requirements.

Section 14: Transport information

ADR

The product is not covered by international regulation on the transport of dangerous goods.

RID

The product is not covered by international regulation on the transport of dangerous goods.

ADN

The product is not covered by international regulation on the transport of dangerous goods.

IATA

The product is not covered by international regulation on the transport of dangerous goods.

IMDG

The product is not covered by international regulation on the transport of dangerous goods.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code No information available.

Section 15: Regulatory information

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

EU regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Directive 96/61/EC concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Not listed.

Other regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations

Follow national regulation for work with chemical agents.

Chemical safety assessment

No Chemical Safety Assessment has been carried out.

Section 16: Other information

List of abbreviations

DNEL: Derived No-Effect Level.
PNEC: Predicted No-Effect Concentration. PBT:
Persistent, bioaccumulative and toxic. vPvB:
Very Persistent and very Bioaccumulative.

References

HSDB® - Hazardous Substances Data Bank
Registry of Toxic Effects of Chemical Substances (RTECS)

Information on evaluation method leading to the classification of mixture

The mixture is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

Full text of any statements or R-phrases and H-phrases under Sections 2 to 15

R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H319 - Causes serious eye irritation.

Training information

Follow training instructions when handling this material.

Disclaimer

This information is based on our current knowledge and is believed to be correct as of the date issued. The information is intended to describe the product for the purposes of health, safety and environmental requirements only and no warranty, express or implied, is made. It should also not be construed as guaranteeing any specific property of the product. In addition, information obtained from a database is subject to change and may not be as current as the information in the MSDS available directly from Angus Fire.