



Safety Data Sheet

This safety data sheet complies with the requirements of: 2012 OSHA Hazard Communication Standard (29CFR 1910.1200)

Product name THUNDERSTORM FC-601A-FP

1. Identification

1.1. Product Identifier

Product name THUNDERSTORM FC-601A-FP

1.2. Other means of identification

Product code 770137
Synonyms None
Chemical Family Fire fighting foam, surfactant

1.3. Recommended use of the chemical and restrictions on use

Recommended use Fire extinguishing agent.
Uses advised against None known.

1.4. Details of the Supplier of the Safety Data Sheet

Company Name Tyco Fire Protection Products
One Stanton Street
Marinette, WI 54143-2542
Telephone: 715-735-7411
Contact point Product Stewardship at 1-715-735-7411
E-mail address psra@tycofp.com

1.5. Emergency Telephone Number

Emergency telephone CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral - Category 4
Serious eye damage/eye irritation - Category 1

2.2. Label Elements

Signal Word

DANGER

Hazard Statements

Harmful if swallowed
Causes serious eye damage





Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Disposal

Dispose of contents/container to an approved waste disposal plant.

2.3. Hazards Not Otherwise Classified (HNOC)

Not Applicable.

2.4. Other Information

Unknown Acute Toxicity 45.2466% of the mixture consists of ingredient(s) of unknown toxicity

3. Composition/information on Ingredients

3.1. Mixture

The following component(s) in this product are considered hazardous under applicable OSHA(USA)

Chemical name	CAS No.	weight-%
Ethylene Glycol	107-21-1	10 - 30
D-Glucopyranoside, C9-C11 Oligomer	132778-08-6	1 - 5
Sodium Decyl Sulfate	142-87-0	1 - 5
2-(2-Butoxyethoxy)ethanol	112-34-5	1 - 5
Perfluorinated Amphoteric Surfactant	Proprietary	1 - 5
Sodium Octyl Sulfate	142-31-4	1 - 5
Cocamidopropyl Hydroxysultaine	70851-08-0	1 - 5
Proprietary Fluoropolymer	Proprietary	1 - 5

4. First aid measures

4.1. Description of first aid measures

- General Advice** If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
- Eye Contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
- Skin contact** Wash skin with soap and water. Get medical attention if irritation develops and persists.
- Inhalation** Remove to fresh air. If breathing is difficult, give oxygen. (Get medical attention immediately if symptoms occur.).
- Ingestion** Rinse mouth. Do not induce vomiting without medical advice. If swallowed, call a poison control center or physician immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms No information available.



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4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

5.1. Suitable Extinguishing Media

Product is extinguishing agent. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Unsuitable Extinguishing Media

None.

5.3. Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products Carbon oxides, Fluorinated oxides, Nitrogen oxides (NOx), Oxides of sulfur

5.4. Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

5.5. Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions Ensure adequate ventilation, especially in confined areas.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1. Precautions for Safe Handling

Advice on safe handling Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice.



7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases.

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL
Ethylene Glycol 107-21-1	STEL: 50 ppm vapor fraction STEL: 10 mg/m ³ inhalable particulate matter, aerosol only TWA: 25 ppm vapor fraction	-	-	100 mg/m ³ (Ceiling)
2-(2-Butoxyethoxy)ethanol 112-34-5	TWA: 10 ppm inhalable fraction and vapor	-	-	-

ACGIH (American Conference of Governmental Industrial Hygienists) OSHA (Occupational Safety and Health Administration of the US Department of Labor) NIOSH IDLH Immediately Dangerous to Life or Health

8.2. Appropriate Engineering Controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

8.3. Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Ventilation Use local exhaust or general dilution ventilation to control exposure with applicable limits

8.4. General hygiene considerations

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State Liquid, viscous
Odor Slight solvent
Odor Threshold No data available
Color Amber



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<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8	
Melting point/freezing point	-22 °C / -8 °F	
Boiling point / boiling range	> 100 °C / 212 °F	
Flash Point	> 100 °C / > 212 °F	
Evaporation Rate	No data available	
Flammability (solid, gas)	No data available	
Flammability limit in air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific gravity	1.00 - 1.20	
Water Solubility	Completely soluble	
Solubility in Other Solvents	No data available	
Partition coefficient	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Kinematic viscosity	No data available	

10. Stability and Reactivity

10.1. Chemical Stability

Stable under recommended storage conditions.

10.2. Reactivity

No data available

10.3. Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.

11. Toxicological Information

11.1. Information on Likely Routes of Exposure

Product information

Inhalation No data available.



Eye Contact Corrosive to the eyes and may cause severe damage including blindness.
Skin contact Irritating to skin.
Ingestion Harmful if swallowed.

Component Information
Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene Glycol 107-21-1	= 4700 mg/kg (Rat)	= 10600 mg/kg (Rat) = 9530 µL/kg (Rabbit)	-
Sodium Decyl Sulfate 142-87-0	= 1950 mg/kg (Rat)	-	-
2-(2-Butoxyethoxy)ethanol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Sodium Octyl Sulfate 142-31-4	= 3200 mg/kg (Rat)	-	-

11.2. Information on Toxicological Effects

Symptoms No information available.

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion/Irritation Severe skin irritation.
Serious eye damage/eye irritation Risk of serious damage to eyes.
Sensitization No information available.
Germ Cell Mutagenicity No information available.
Carcinogenicity No information available.
Reproductive Toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Target organ effects Central Nervous System, Eyes, Respiratory System, Skin.
Aspiration Hazard No information available.

11.4. Numerical Measures of Toxicity - Product information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1745 mg/kg
ATEmix (dermal) 90000 mg/kg

12. Ecological Information

12.1. Ecotoxicity

Not classified.

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethylene Glycol 107-21-1	EC50 (96h) 6500 - 13000 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static 40000 - 60000 mg/L Pimephales promelas LC50 (96h) static = 27540 mg/L Lepomis macrochirus LC50 (96h) = 41000 mg/L Oncorhynchus mykiss LC50 (96h) static 14 - 18 mL/L Oncorhynchus mykiss LC50 (96h) static = 16000 mg/L Poecilia reticulata LC50 (96h) static = 40761	EC50 (48h) = 46300 mg/L Daphnia magna

		mg/L Oncorhynchus mykiss	
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50 (96h) > 100 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1300 mg/L Lepomis macrochirus	EC50 (48h) > 100 mg/L Daphnia magna EC50 (24h) = 2850 mg/L Daphnia magna
1,2-Propanediol 57-55-6	EC50 (96h) = 19000 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 51600 mg/L Oncorhynchus mykiss LC50 (96h) static = 51400 mg/L Pimephales promelas LC50 (96h) = 710 mg/L Pimephales promelas LC50 (96h) static 41 - 47 mL/L Oncorhynchus mykiss	EC50 (48h) Static > 1000 mg/L Daphnia magna EC50 (24h) > 10000 mg/L Daphnia magna
Sodium chloride 7647-14-5	-	LC50 (96h) static = 12946 mg/L Lepomis macrochirus LC50 (96h) static 6020 - 7070 mg/L Pimephales promelas LC50 (96h) flow-through 5560 - 6080 mg/L Lepomis macrochirus LC50 (96h) static 6420 - 6700 mg/L Pimephales promelas LC50 (96h) semi-static = 7050 mg/L Pimephales promelas LC50 (96h) flow-through 4747 - 7824 mg/L Oncorhynchus mykiss	EC50 (48h) Static 340.7 - 469.2 mg/L Daphnia magna EC50 (48h) = 1000 mg/L Daphnia magna
Potassium chloride 7447-40-7	EC50 (72h) = 2500 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1060 mg/L Lepomis macrochirus LC50 (96h) static 750 - 1020 mg/L Pimephales promelas	EC50 (48h) = 825 mg/L Daphnia magna EC50 (48h) Static = 83 mg/L Daphnia magna
2-Methyl-2,4-pentanediol 107-41-5	-	LC50 (96h) static = 10700 mg/L Pimephales promelas LC50 (96h) flow-through = 8690 mg/L Pimephales promelas LC50 (96h) flow-through 10500 - 11000 mg/L Pimephales promelas LC50 (96h) static = 10000 mg/L Lepomis macrochirus	EC50 (48h) 2700 - 3700 mg/L Daphnia magna
Glycerol 56-81-5	-	LC50 (96h) static 51 - 57 mL/L Oncorhynchus mykiss	EC50 (24h) > 500 mg/L Daphnia magna
t-Butanol 75-65-0	EC50 (72h) > 1000 mg/L Desmodesmus subspicatus	LC50 (96h) flow-through 6130 - 6700 mg/L Pimephales promelas	EC50 (48h) = 933 mg/L Daphnia magna EC50 (48h) Static 4607 - 6577 mg/L Daphnia magna
n-Butanol 71-36-3	EC50 (96h) > 500 mg/L Desmodesmus subspicatus EC50 (72h) > 500 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1910000 µg/L Pimephales promelas LC50 (96h) static 1730 - 1910 mg/L Pimephales promelas LC50 (96h) static 100000 - 500000 µg/L Lepomis macrochirus LC50 (96h) flow-through = 1740 mg/L Pimephales promelas	EC50 (48h) Static 1897 - 2072 mg/L Daphnia magna EC50 (48h) = 1983 mg/L Daphnia magna
Formaldehyde 50-00-0	-	LC50 (96h) static = 1510 µg/L Lepomis macrochirus LC50 (96h) static 100 - 136 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 0.032 - 0.226 mL/L Oncorhynchus mykiss LC50 (96h) static = 41 mg/L Brachydanio rerio LC50 (96h) flow-through 22.6 - 25.7 mg/L Pimephales promelas LC50 (96h) static 23.2 - 29.7 mg/L Pimephales promelas	LC50 (48h) = 2 mg/L Daphnia magna EC50 (48h) Static 11.3 - 18 mg/L Daphnia magna
5-Chloro-2-methyl-4-isothiazolin-3-one 26172-55-4	EC50 (96h) static 0.03 - 0.13 mg/L Pseudokirchneriella subcapitata EC50 (72h) static 0.11 - 0.16 mg/L Pseudokirchneriella subcapitata	LC50 (96h) semi-static = 1.6 mg/L Oncorhynchus mykiss	EC50 (48h) = 4.71 mg/L Daphnia magna EC50 (48h) Flow through 0.12 - 0.3 mg/L Daphnia magna EC50 (48h) Static 0.71 - 0.99 mg/L



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	EC50 (120h) = 0.31 mg/L Anabaena flos-aquae		Daphnia magna
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12.2. Persistence and Degradability

Biodegradability (B.O.D./C.O.D.) 60 %

12.3. Bioaccumulation

No information available.

Chemical name	Partition coefficient
Ethylene Glycol 107-21-1	-1.93

12.4. Other Adverse Effects

No information available

13. Disposal Considerations

13.1. Waste Treatment Methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Do not reuse container.

14. Transport Information

DOT NOT REGULATED

TDG NOT REGULATED

MEX NOT REGULATED

ICAO (air) NOT REGULATED

IATA NOT REGULATED

IMDG NOT REGULATED

15. Regulatory Information

15.1. International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply



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Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- ENCS - Japan Existing and New Chemical Substances
- IECSC - China Inventory of Existing Chemical Substances
- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

15.2. US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Ethylene Glycol - 107-21-1	1.0
2-(2-Butoxyethoxy)ethanol - 112-34-5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic health hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ethylene Glycol 107-21-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

15.3. US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Ethylene Glycol - 107-21-1	Developmental
Formaldehyde - 50-00-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Ethylene Glycol 107-21-1	X	X	X
2-(2-Butoxyethoxy)ethanol 112-34-5	X	-	X
n-Butanol 71-36-3	X	X	X
Formaldehyde	X	X	X



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50-00-0			
Magnesium Nitrate 10377-60-3	X	X	X

16. Other information, including date of preparation of the last revision

NFPA Health Hazards 2 Flammability 1 Instability 0 Physical and chemical properties -
HMIS Health Hazards 2 Flammability 1 Physical Hazards 0 Personal Protection X

Revision date 22-May-2017

Revision note SDS sections updated, 2, 11.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet