

ECO FRIENDLY.
10 YEARS SHELF LIFE
NEW FORMULA



INVENTED
& MADE IN
SINGAPORE



FIRE TERMINATOR

EVERY
SECOND
COUNTS...



DRAKAROS
GLOBAL



SCDF's target response time is up to 8 minutes for 90% of fire/rescue cases. (SCDF Strategic Service Intent 2023)

In less than 30 seconds, a small flame can turn into a major fire. It only takes minutes for thick black smoke to fill a house or engulf it in fire (US Dept of Homeland Security 2023)

In these valuable initial minutes and seconds, when a fire is first discovered, having the right tool can make the difference between life and death, between a close shave and utter destruction of a home.

30
SECS

8
MINS

EVERY SECOND COUNTS...

An aerial photograph showing a large-scale fire incident. Multiple firefighters in full protective gear are positioned around a large, intense fire that is producing thick white smoke. The ground is covered in debris, including wooden planks and metal scraps. A red building is visible in the background. The scene is chaotic and dangerous, highlighting the scale of the emergency response.

SCDF Annual Statistics 2023

- The number of residential fires due to unattended cooking rose by 12% in one year.
- The number of residential fires of electrical origin rose by 21.1% (of these there was a 13% increase in fires that involve AMDs)

EVERY SECOND COUNTS...

A large number of red fire extinguishers are packed closely together, filling the entire frame. They are arranged in rows, with their handles and nozzles pointing in various directions. The background is a solid red color, matching the extinguishers.

The solution is a fire extinguisher that:

1. Is UNIVERSAL in its efficacy for all types of fire
2. Is FAST ACTING and FINAL in its effect
3. Is EASY to be used by anyone without training
4. Is MAINTENANCE FREE
5. Is SAFE for people and the environment

EVERY SECOND COUNTS...

Fire Terminator has UNIVERSAL applications:

FT's new formula puts out ALL incipient fire types without exceptions. It puts out both kitchen grease fires and electrical origin fires including those of AMD batteries.























































If a fire gets too large, use the FT Spray on a blanket or any large piece of cloth as a fire retardant cover to escape the area.

FT can also be used for sprinkler systems for an even more effective fire sprinkler protection.

At sea, FT may even be combined with seawater for fighting fires on vessels.



EVERY SECOND COUNTS...

FIRE	CLASS A	CLASS B	CLASS C	CLASS D	CLASS E	CLASS F/K	TOXICITY	RE-IGNITION
TYPE Extinguisher Type	ORGANIC MATERIALS Eg. Paper, Charcoal & Plastic	FLAMMABLE LIQUIDS Eg. Paint, Petrol & Fuel	FLAMMABLE GASES Eg. Methane & Butane	FLAMMABLE Metals Eg. Lithium & Magnesium	ELECTRICAL CIRCUITS Eg. Computer & Wirings	COOKING OILS Eg. All Cooking & Kitchen Oils	CONTENTS NOT TOXIC & NOT HARMFUL TO CONSUMERS?	CAN PREVENT RE-IGNITION OF FIRE AT SITE?
 WATER								
 FOAM								
 CO2								
 DRY POWDER								
 WET CHEMICAL								
								



Fire Terminator is FAST & FINAL

FT's unique approach to interrupting fire combustion molecules is a paradigm changer that stops all ignition immediately with rapid and effective fire suppression and prevents reignition.

FT solution can be used as a fire retardant or in the case of forest fires, to form fire breaks with no burnbacks.

EVERY SECOND COUNTS...

Fire Terminator spray is EASY
FT is easily stored or simply placed on a shelf (no hook needed).

FT's spray can is just the right weight that even the young and elderly can handle confidently

FT's spray system is conceptually easy to understand and simple to operate.


FT's spray has a range of 7 metres (just under 23 feet)

FT can be applied to any fire type so no precious time lost due to decision making.

Simply aim directly at the fire, and press!

EVERY SECOND COUNTS...



A large, metallic, three-dimensional number '10' is positioned on a rustic wooden surface. The number is highly reflective, showing highlights and shadows that emphasize its solid form. The wood grain is visible and adds texture to the background.

Fire Terminator spray is MAINTENANCE FREE

FT lasts for 10 years while maintaining its efficacy.
For specialty uses in industrial settings a longer lasting formula can also be mixed.

EVERY SECOND COUNTS...



Fire Terminator spray is SAFE FOR PEOPLE & THE ENVIRONMENT

FT is sustainably produced from all organic material with zero synthetic chemicals and zero heavy metal elements.

FT is completely non-toxic and is food grade.

FT is bio degradable and recyclable.

To clean up after FT is sprayed on an area, simply wash/wipe it with water.

EVERY SECOND COUNTS...

A background image showing two firefighters in blue gear and helmets on the left, and a person in a red jumpsuit with 'CFR' on the back on the right, holding a smartphone to film a large fire. A blue semi-transparent box contains text on the left side.

FT was developed by our Singaporean partner, Dr Judah Jay after many years of biotech research, study and testing, and is manufactured proudly in Singapore and exported to the world.

FT has been certified by international standards and tested by fire professionals all over the world including Canada, USA, Indonesia and more.

FT is currently on Canadian Fire Trucks and will soon be in every car and tractor sold by Hyundai India.

EVERY SECOND COUNTS...

FT is ideal for restaurant kitchens. Our food grade solution means after putting out a fire, there is no need to detox a kitchen and inspected before reopening.

FT is ideal for hotels, shops and public places where anyone can help put out a fire when one appears.

FT is ideal for camping/caravaning where our eco friendly solution can be used to put out accidental fires and even campfires from a safe distance.

FT is ideal for homes with children or elderly.

FT is ideal for offices with its easy to use format and small footprint.

FT is designed to be a first response anywhere where a fire can occur.


EVERY SECOND COUNTS...







CERTIFICATIONS AND REPORTS

			www.fireterminator.com
		Address:	Blk. 3015 Ubi Road 1
			Unit 04-266
			Singapore 408 704
		WhatsApp:	(65) 8925 2627
		E:	info@fireterminator.com
<div><div><u>MATERIAL SAFETY</u> <u>DATA SHEET</u></div><div>FT JN1010 in Containers (Class A/B/C/D/E/F)</div><div>Page 1 of 4</div></div>			
SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER			
Manufacturer's Name	Fire Terminator International Pte Ltd	Address	Blk.-3015, Ubi Road 1 #04-266 Singapore 408704
Product Name	FT JN1010	Other Names	N.A.
Recommended Use	The intended or recommended use of this preparation is as a fire-extinguishant for Class 'A', 'B', 'C', & 'D' 'E' 'F' fires		
Manufacturer's Name	Fire Terminator International Pte Ltd	Address	Blk.-3015, Ubi Road 1 #04-266 Singapore 408704
Telephone No.	(65) 6748 4396	Emergency Telephone No.	(65) 9672 4914
Business WhatsApp	(65) 8925 2627	Date	09/11/ 2023
SECTION 2: HAZARDS IDENTIFICATION			
Hazard Classification	Not hazardous Non-Flammable Non-Toxic Non-Poisonous		
Safety Phrase(s)	Not available	Risk Phrase(s)	Not available
SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS			
Preparation	Mixture		
Main Ingredients	Aqua, Mineral Salts, Extract of Acacia, Extract of Trachyspermum Ammi.		
Hazardous contents	Not hazardous Non-Flammable, Non-Toxic Non-Poisonous		
	No PFOS /PFOA Test Report No. AC/HS/1716/18		

			www.fireterminator.com
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Page 2 of 4			
SECTION 4: FIRST AID MEASURES			
Description of Necessary First Aid Measures	Eye Contact	Flush with water immediately. Seek medical attention if irritation develops and persists.	
	Skin Contact	Wash the area with soap and water. Seek medical attention if irritation develops and persists.	
	Inhalation	Not expected to be toxic if inhaled.	
	Ingestion	Rinse mouth immediately and drink lots of water. Seek medical attention if person becomes uncomfortable.	
Medical Attention and Special Treatment		See above	
SECTION 5: FIRE FIGHTING MEASURES			
Suitable Extinguishing Media	Product is totally green extinguishing agent	Hazardous Combustion Products	None
Special Protective Precautions and Equipment for Fire Fighters	None	Hazchem Code	Not Hazardous
SECTION 6: ACCIDENTAL RELEASE MEASURES			
Emergency Procedures		Prevent skin and eye contact	
Methods and Materials for Containment and Clean Up		Wash spilled area with water.	
SECTION 7: HANDLING & STORAGE			
Precautions for Safe Handling		Avoid direct sunlight & extreme temperatures	
Conditions for Safe Storage, Including any Incompatibles		No special conditions are needed for safe storage. Store in its original packaging. Storage Temperature: 2° - 55° C If frozen can be used after the liquid is thawed.	

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		Singapore 408 704	
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Page 2 of 4			
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Page 3 of 4

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards	Not applicable	Biological Limit Controls	Not available
Engineering Controls	Not available	Personal Protection Equipment	Do not require specific protection

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Transparent
Colour	Colourless	Odour	Characteristic
Freezing Point	-10°C	Flash Point	Non-flammable
Upper and Lower Flammable (explosive) Limits in Air	Not explosive	Ignition Temperature	Does not ignite

SECTION 10: STABILITY AND REACTIVITY


Chemical Stability	Stable under normal conditions	Conditions to avoid	None when used as directed
Incompatible Materials	Not applicable	Hazardous Reactions	No dangerous reactions known under normal conditions of use.

SECTION 11: TOXICOLOGY INFORMATION

Health Effects from the Likely Routes of Exposure	Eye Contact	May cause some discomfort.
	Skin Contact	May cause mild transient irritation.
	Inhalation	Under normal condition of intended use, this solution is not expected to be an inhalation hazard.
	Ingestion	May cause discomfort if swallowed.

SECTION 12: ECOLOGICAL INFORMATION

Biodegradability	Readily biodegradable
Eco-Toxicity	Not expected to be toxic.



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Page 4 of 4

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Methods	Dispose of in compliance with local, state and Commonwealth regulations that may be in force
Special Precautions for Landfill or Incineration	Not available

SECTION 14: TRANSPORT INFORMATION

UN Number	Not applicable	UN Proper Shipping Name	Not applicable
Class and Subsidiary Risk	Not applicable	Packing Group	Not applicable
Special Precautions for User	None	Hazchem Code	Not hazardous

CONTENTS NOT RESTRICTED AND NOT REGULATED AS PER IATA.

- Tested Toxin-free by TUV SUD PSB (**Report No: 7191120859-CHM15-E0**)
- Tested PFOA-PFOS free by UL (**Report No: IA18-13597A**)
- Tested for PFOS, PFOA & PFAS free by Pacific Rim Laboratories Inc. Canada (**Report No: 2591570**)
- Singapore Green Label product**

FRAGILE - Avoid scratches, crashes and drops while transporting the products

SECTION 15: REGULATORY INFORMATION

Risk / Safety Phrases	Not Classified	Symbol(s) on Label	Not required
Law on Toxic Material	Not applicable	Fire Fighting Law	Not applicable
Labour Health Safety Law on Hazardous Material	This product does not contain an substances known to cause cancer, developmental and/or reproductive harm		

SECTION 16: OTHER INFORMATION

Date of preparation	09/11/2023
---------------------	------------

-END OF MSDS-



C E R T I F I C A T E

The Workplace Safety and Health Council
is pleased to certify that

FIRE TERMINATOR INTERNATIONAL PRIVATE LIMITED

has fulfilled the requirements to attain bizSAFE Level 3

This certificate will expire on 05/10/2020

A handwritten signature in black ink, reading "Winston Yew".

Winston Yew

Deputy Director, Industry Capability Building
Workplace Safety and Health Council



Certificate No. E18576

BIZ SAFE CERT

ISO CERTIFICATION

ISO 45001:2018

Certificate of Registration

This is to certify that the
Occupational Health and Safety Management System of

FIRE TERMINATOR INTERNATIONAL PTE LTD

3015, UBI Road 1, #04 - 266, Singapore - 408704.



has been assessed and found to conform to the requirements of

ISO 45001:2018

For the following scope:
Manufacture and installation of green fire
extinguishing products.



Certificate number: 26617

This certificate is valid from 10-Jul-2018 until 9-Jul-2021.


David Wilmer
Certification Manager

UNIVERSAL REGISTRARS

www.universalregistrars.com

This certificate can be verified at the above URL.
The certificate remains the property of Universal Registrars, to whom it
must be returned on request. Lack of fulfillment of certification terms
and conditions at all times, may render this certificate invalid.



ISO 9001:2015

Certificate of Registration

This is to certify that the quality management system of

FIRE TERMINATOR INTERNATIONAL PTE LTD

3015, UBI Road 1, #04 - 266, Singapore - 408704.



has been assessed and found to conform to the requirements of

ISO 9001:2015

For the following scope:
Manufacture and installation of green fire
extinguishing products.



Certificate number: 26615

This certificate is valid from 10-Jul-2018 until 9-Jul-2021.


David Wilmer
Certification Manager

UNIVERSAL REGISTRARS

www.universalregistrars.com

This certificate can be verified at the above URL.
The certificate remains the property of Universal Registrars, to whom it
must be returned on request. Lack of fulfillment of certification terms
and conditions at all times, may render this certificate invalid.



ISO 14001:2015

Certificate of Registration

This is to certify that the environment management system of

FIRE TERMINATOR INTERNATIONAL PTE LTD

3015, UBI Road 1, #04 - 266, Singapore - 408704.



has been assessed and found to conform to the requirements of

ISO 14001:2015

For the following scope:
Manufacture and installation of green fire
extinguishing products.



Certificate number: 26616

This certificate is valid from 10-Jul-2018 until 9-Jul-2021.


David Wilmer
Certification Manager

UNIVERSAL REGISTRARS

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and conditions at all times, may render this certificate invalid.



FIRE TEST REPORT FOR 3A & 5F
ACCORDING TO BRITISH
STANDARD BS 6165:2019



ADVANCE FIRETEC AND RESEARCH LAB PVT.LTD
(ISO/IEC 17025 Accredited Testing Laboratory by NABL vide
Certificate number TC- 7009)
B-3, Mangolpuri Industrial Area, Phase -II, Delhi – 110034
Ph.: 09971032375 / 09582612307
E-mail : aftrlab@gmail.com



TC-7009
ULR – TC 700924100000250 F

TEST REPORT OF SMALL DISPOSABLE FIRE EXTINGUISHERS OF THE AEROSOL TYPE

AS PER BS 6165:2019

Report No. :- 5070
Date:- 19.06.2024
ULR –TC 700924100000250 F

PART – A1

- 1) Customer's Name & Address :- Fire Terminator International Pte Ltd.,
Blk,3015,Ubi Road 1, # 04-266
Singapore 408704.
- 2) Details of Sample Received :-
- i. Type of Sample :- Small Disposable Portable Fire Extinguishers
(Photograph of the Extinguisher is attached.)
 - ii. Reference Standard :- BS 6165:2019
 - iii. Fire Rating :- 3A, 5F
 - iv. Any Other Information :- All informations related to the test items mentioned
in Part – A1 are provided by the customer.

PART – A2

- i. Date of Received on :- 17.06.2024
- ii. Quantity received :- 02 Nos.
- iii. AFTRL Code No. of the Sample :- 2406 -103 – 7007
- iv. Acknowledge Slip No./ Job Order No. :- FE / 1902
- v. Test Started on :- 17.06.2024
- vi. Test Completed on :- 17.06.2024
- vii. Any Other Information :- Fire Test in presence of Dr. Judah Jay & Ms. Davina
Jay and Fire Test is witness by Dr. Judah Jay and
Ms. Davina Jay.

PART-B-

SUPPLEMENTARY INFORMATIONS IF ANY

S K Nandi



PART-C – TEST RESULTS

Following Test Results of the sample have been obtained.

Test Observations :-

1. Mechanical Testing

I. Performance / Durability / Safety Test

Sl. No.	Test Parameter and clause reference No. of BS 6165:2019	Observation	Requirements as per BS 6165:2019
1*	Fire Extinguishing performance rating Class 3A rating (CI No-7.6.1 & Annex – H.4)	All Flames extinguished and recurrence of flaming observed during 1 min 30s following complete discharge of extinguisher. Ambient temp - 37.9°C Wind Speed - 0.4 m/s	Annex H.2 (a) - For Class A Fire Rating – All flames shall be extinguished and there shall not be recurrence of flaming during 3 min following complete discharge of extinguisher.
2*	Fire Extinguishing performance rating Class 5F rating (CI No-7.6.3 & Annex – H.6)	All flames extinguished and there is no re-ignition of test fire or any overflow of fuel during 20 min period of complete discharge of the extinguisher. Ambient temp – 38.2°C Wind Speed - 0.2 m/s	Annex H.2 (c) - All flames shall be extinguished and there shall not be re-ignited of the test fire, or any overflow of fuel during 20 min period following complete discharge of the extinguisher.

PART –D

Remarks :- 1. Sample is provided by the customer.
2*. Fire Tested on Site at Kamaspur, Sonipat.

Note :

- 1. The test results relate only to the sample tested.
- 2. This test report shall not be reproduced except in full, without written approval of the Laboratory.

-----The End-----

Tested by

Jaideep Singh
Engineer

FOR ADVANCE FIRETEC AND RESEARCH LAB PVT.LTD.

Reviewed by

Indu Sharma
Sr. Scientist

Authorised by

S K Nandi
Director (Tech)

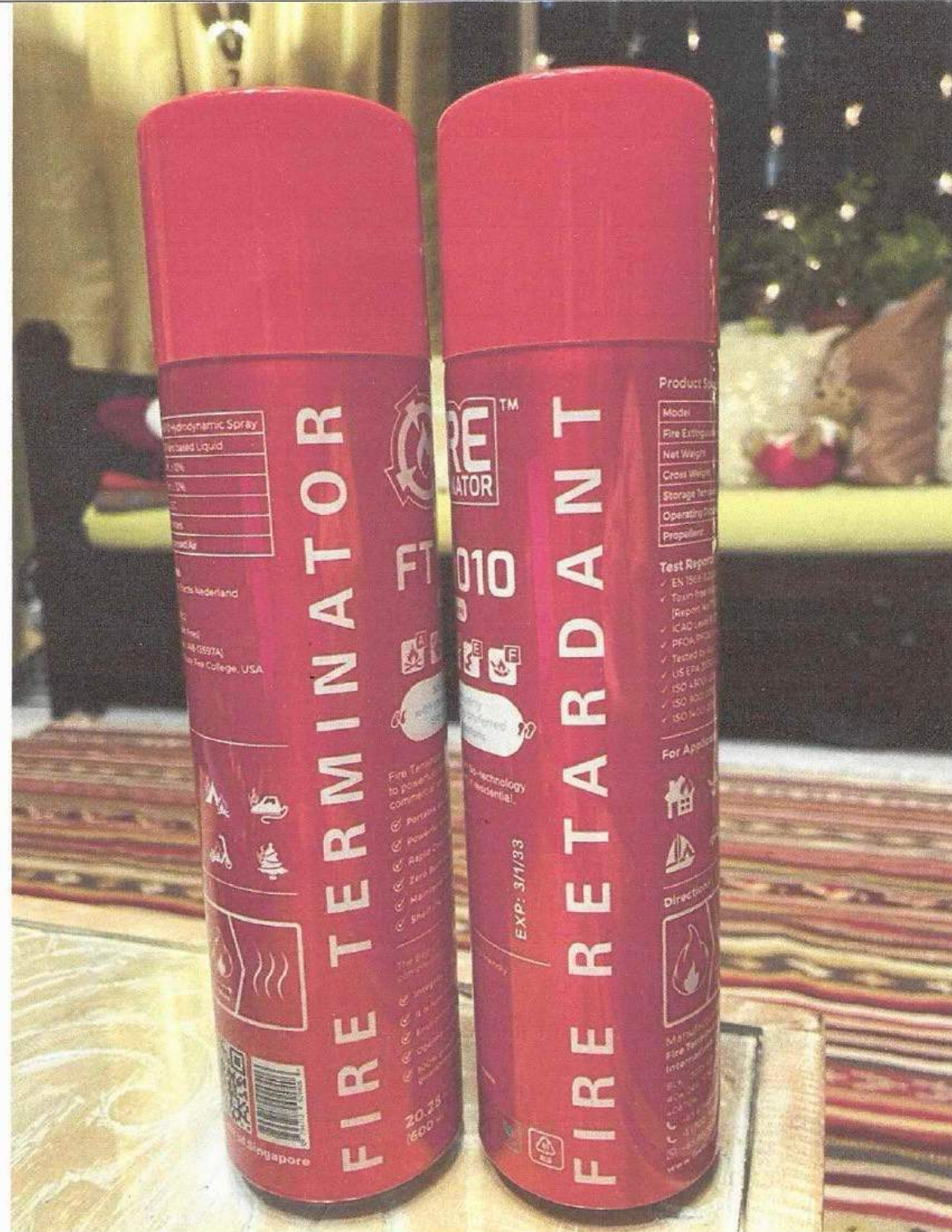
Witness by

Dr. Judah Jay
Ms. Davina Jay





TC-7009
ULR – TC 700924100000250 F



TC-7009
ULR – TC 700924100000250 F

PART-C – TEST RESULTS

Following Test Results of the sample have been obtained.

Test Observations :-

1. Mechanical Testing

I. Performance / Durability / Safety Test

Sl. No.	Test Parameter and clause reference No. of BS 6165:2019	Observation	Requirements as per BS 6165:2019
1*	Fire Extinguishing performance rating Class 3A rating (CI No-7.6.1 & Annex – H.4)	All Flames extinguished and recurrence of flaming observed during 1 min 30s following complete discharge of extinguisher. Ambient temp - 37.9°C Wind Speed - 0.4 m/s	Annex H.2 (a) - For Class A Fire Rating – All flames shall be extinguished and there shall not be recurrence of flaming during 3 min following complete discharge of extinguisher.
2*	Fire Extinguishing performance rating Class 5F rating (CI No-7.6.3 & Annex – H.6)	All flames extinguished and there is no re-ignition of test fire or any overflow of fuel during 20 min period of complete discharge of the extinguisher. Ambient temp – 38.2°C Wind Speed - 0.2 m/s	Annex H.2 (c) - All flames shall be extinguished and there shall not be re-ignited of the test fire, or any overflow of fuel during 20 min period following complete discharge of the extinguisher.

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2*. Fire Tested on Site at Kamaspur, Sonipat.

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1. The test results relate only to the sample tested.
2. This test report shall not be reproduced except in full, without written approval of the Laboratory.

-----The End-----

FOR ADVANCE FIRETEC AND RESEARCH LAB PVT.LTD.

Tested by

Jaideep Singh

Jaideep Singh
Engineer

Reviewed by

Indu Sharma

Indu Sharma
Sr. Scientist

Authorised by

S.K Nandi

S.K Nandi
Director (Tech)

Witness by

Dr. Judah Jay

Dr. Judah Jay

Ms. Davina Jay

Ms. Davina Jay



S K Nandi



Test Report



FIRE TERMINATOR
INTERNATIONAL PTE
LTD

PROJECT NUMBER:
4788215869.1.1

TEST LOCATION:

UL India Private Limited
Site: UL - Jain Fire
Laboratory,
Jain University Global
Campus,
Jakkasandra,
Kanakapura Taluk-
562112,
Ramanagara District,
Karnataka, India

UL OFFICE:

UL India Private Limited,
Kalyani Platina - Block I,
3rd Floor, No.24,
EPIP Zone, Phase II,
Whitefield, Bangalore,
Karnataka-560066,
India.

PROJECT NUMBER:
4788215869.1.1

Test DISCIPLINE: FOAM CONCENTRATE

General details

Customer / Applicant	FIRE TERMINATOR INTERNATIONAL PTF I LTD		
Manufacturer	FIRE TERMINATOR INTERNATIONAL PTE LTD BLOCK 3015, UBI ROAD 1, #04-266 408704, Singapore		
Program	Verification Service Inspection		
Test Lab Location	UL-JFL	Refer to Cover page for the UL address	
Item Under Test	Foam Concentrate		
Model	FT SLAM/FT JN1010 (AFFF)		
Number of Samples	30 liters in 1 Can		
ULJFL Sample Identification	171130135.1	Refer Summary of Test results for multiple samples	
Manufacturer Serial Number (if any)	7102113		
Condition of Samples on receipt	Good		
Date of Receipt	30 November 2017		
Applicable Standard	ICAO Doc 9137-AN/898 Airport Services Manual, Part 1-Rescue and Firefighting, Fourth Edition, 2015		
Date of Testing (Start date)	5 December 2017	End Date	6 December 2017
General ambient condition	Temperature in °C	25 ± 5°C	
	Relative humidity in %	Not Applicable	
Date of Reporting	21 December 2017		
Test In-charge	Manjunath Anandan		

Fill in the rows with information or add hyphen (-)

 Syed Salahuddin Associate Project Engineer	 Jesu Prakash Senior Project Engineer
Witnessed by	Reviewed by

Disclaimer

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PROJECT NUMBER:
4788215869.1.1

TEST CONDITIONS AND TEST RESULTS

PHYSICAL PROPERTIES

The physical properties measured under a controlled lab condition.
Customer declared Minimum Storage Temperature is 35°F (1.7°C)

Results:

Parameter	Results (as observed)
pH	9.88 @ 25 °C
Specific Gravity	1.125
Sedimentation	0.26 %
Viscosity	5.86 mm sq./sec
Surface tension	4.5 mN/M

PERFORMANCE PROPERTIES

Expansion and Drainage Time

Test Conditions: Ambient Temperature: 28 °C,
Premix Temperature: 26 °C

Expansion: 7.65
Drain Time: 2 minutes 02 seconds

Fire Test according to ICAO requirements, Level B

Designation	Unit	Values
Fire Test Date	yy-mm-dd	2017-12-05
Concentrate	%	6
Type of Water		Fresh Water
Foam Nozzle (UN186)	lpm	11.40
Fire Tray	m ²	4.5
Application Rate	Lpm/m ²	2.5
Ambient Temperature	°C	29
Fuel Temperature	°C	29
Water Temperature	°C	29
Foam Solution Temperature	°C	26
Wind Speed	m/s	1.3
Fire Test		
Type of Fuel	Unit	Results
Preburn Time	Seconds	60
Start Foam Solution	min:sec	00:00
90% control	min:sec	00:37
99% control	min:sec	00:49
Extinguishment	min:sec	00:56
Stop Foam Application	min:sec	02:00
Burnback		
Waiting Period	min:sec	02:00
Start Burnback	min:sec	00:00
Burnback, >25% of area	min:sec	>15 mins

Requirements for extinguishing time and Burnback time as per ICAO

Time to Extinction: ≤ 1 minute
Time to Burnback: ≥ 5 minutes for 25% of the surface

Comments to the fire test results

After 15 minutes, it was decided to stop the Burnback test and extinguish the Burnback tray.

The time to complete extinguishment was 56 seconds and the time to Burnback was > 15 minutes.

"Results meet the ICAO, Level B Requirements"

*****End of Report*****



Efectis Nederland
P.O. Box 554 | 2665 ZN Bleiswijk
Brandpuntlaan Zuid 16 | 2665 NZ Bleiswijk
The Netherlands
+31 88 3473 723
nederland@effectis.com

REPORT



Efectis Nederland
2017-Efectis-R000964
June 2017
Fire Terminator International PTE. Ltd

REPORT



Efectis Nederland
2017-Efectis-R000964
June 2017
Fire Terminator International PTE. Ltd

REPORT

Determination of test fire performance of FT SLAM / FTJN 1010 extinguishing medium according to Annex H of EN 1568-3:2008

Report no.	2017-Efectis-R000964
Sponsor	Fire Terminator International PTE. Ltd Blk. 3015 Ubi Road 1 Unit 04-266 SINGAPORE 408704
Author(s)	P.B. Reijman B.Sc. R.D. Scheepe B.Sc.
Project number	ENL-17-000064
Date of issue	June 2017
Number of pages	12

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1. SUBJECT

Determination of the test fire performance of liquid concentrate FT SLAM / FT JN 1010.

2. EXAMINATION

Extinguish qualities according to paragraphs of Annex H of EN 1568-3:2008.

3. PRINCIPAL

Fire Terminator International PTE. Ltd
Blk. 3015
Ubi Road 1
Unit 04-266
SINGAPORE 408704

4. PLACE AND DATES FOR THE EXAMINATION

The extinguishing tests according Annex H of EN 1568-3:2008 took place on 29th May 2017 at the facilities of the Brandweer Oefencentrum Kleefse Waard Arnhem. The test fires were carried out indoors at this facilities under controlled climatological circumstances. The tests were performed by staff and with equipments of Efectis Nederland Bleiswijk, The Netherlands. The tests were witnessed by Mr. H.J. Mondt, Lead Auditor IMS Marine Branch of Bureau Veritas. Also representatives of Fire Terminator International PTE. Ltd were present.

5. DATE AND NUMBER OF THE REPORT

June 2017; 2017-Efectis-R000964.

6. INTRODUCTION

By order of Fire Terminator International PTE. Ltd, Singapore, the Centre of Fire Research of Efectis Nederland carried out extinguishing tests to determine the extinguishing qualities of liquid concentrate FT SLAM / FT JN1010 supplied by the principal. Refer to Annex B of this report for the MSDS of the concentrate.

The fire tests were carried out in accordance with Annex H of EN 1568-3:2008 "*Specification for low expansion foam concentrates for surface application to water immiscible liquids*".

6.1 FOAM TYPE AND CONCENTRATIONS

FT SLAM / FT JN1010 is supplied by Fire Terminator International PTE. Ltd, Singapore. The concentrate was sent from Singapore by air mail in six plastic jerry cans with a volume of 5 litres. During the tests the foam was applied in premixed form after mixing in a 6% concentration with potable water. The concentration is in accordance with manufacturers recommendations.

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Submitting the report for inspection to parties who have a direct interest is permitted.

In case this report was drafted on instructions, the rights and obligations of contracting parties are subject to either the Standard Conditions of Efectis Nederland or the relevant agreement concluded between the contracting parties.

6.2 FOAM PREMIX

The foam concentrations mentioned in this report are volume concentrations. The concentration is defined as the ratio of concentrate volume to total volume. Before each test, a stainless steel premix tank was filled with approximately 100 l of the foam mixture. In order to reach the correct concentration, the following procedure was adopted:

- A container was filled with the required volume of concentrate;
- The premix tank was placed on the weighing table and the concentrate poured in the tank;
- The tank was then filled with water. The water flow was stopped when the correct weight was reached;
- The tank was fitted with a pressure connection and connected to a nitrogen cylinder with pressure regulator;
- The tank was pressurized up to a pressure which supplies a nozzle pressure of 6.3 bar with the prescribed foam nozzle this gives a foam flow rate of 11.4 l/min;
- After application of the foam, the nozzle was thoroughly cleaned by circulating water through it for at least 1 minute;
- The premix tank was emptied and rinsed with clean water.

6.3 TEST PAN

The circular fire test pan was made out of mild steel sheet with a thickness of 2.5 mm and had an internal diameter of 2400 mm with a rim height of 200 mm. The internal surface area of the tray is 4.52 m². A burn-back pot was present with an internal diameter of 300 mm and a height of 200 mm.

6.4 FUEL

The test fuel of commercial grade N-Heptane was placed directly on the layer of water in the test pan. In both tests, the mean fuel/water depth was 50 mm. Between the fire tests, the tray was emptied and cleaned, in order to ascertain that there could be no influence from residual matter from a previous test.

6.5 NOZZLE TYPE AND POSITIONING

The foam was discharged using the prescribed standard nozzle. The nozzle was positioned for type H3 forceful application (EN 1568-3 §H.3), i.e. above the horizontal and at a distance from the test pan such that the foam strikes the fuel surface at a point 1 meter from the back edge of the tray. At the end of the foam application the nozzle was manually moved (for approximately 5 seconds) beyond the two adjacent side extensions until full control of the fire was reached.

6.6 FOAM APPLICATION

The foam was to be applied at the rate of nominally 11,4 l/min by applying a pressure of 6.3 bar to the nozzle. The actual flow rate in each test was determined by recording the decrease of the premix tank weight with time, and proved to be in the range 2.50 - 2.55 l/min/m² in all tests. The foam was applied for 3 minutes in each case.

7. TEST RESULTS

Date of performance of extinguishing tests: May 29th 2017

Test pan : diameter 2.40 m, A=4.52 m²
Fuel : N-Heptane, Commercial grade
Nozzle : standard
Concentrate : FT SLAM / FT JN1010
Premix : with potable water
Density liquid concentrate FT SLAM / JN 1010: 1.089 kg/dm³

Table 1: Test results		
	Test 1:	Test 2:
amount of fuel	144 litres N-Heptane	144 litres N-Heptane
premix (100 litres)	6% premix JN 1010	6% premix JN 1010
expansion (l/kg)	9.7	9.7
25% drainage time	3'40"	3'40"
50% drainage time	6'15"	6'15"
premix tank pressure	6.5 bar	6.5 bar
nozzle pressure	6.3 bar	6.3 bar
pre-burn time	60 seconds	60 seconds
nozzle	fixed position	fixed position
application	forceful	forceful
mean wind velocity:	<0.1 m/s	<0.1 m/s
mean ambient temperature (air)	22 °C	24 °C
mean premix temperature	19 °C	18 °C
mean fuel temperature	16 °C	16 °C
extinguishing 90%	60 seconds	45 seconds
extinguishing 99%	100 seconds	90 seconds
extinguishing 100%	180 seconds	180 seconds
25 % burn back time	14 minutes	18 minutes
application rate	11.4 l/min.	11.4 l/min.
application density	2.5 l/min/m ²	2.5 l/min/m ²
extinguishing test	passed	passed

8. CONCLUSIONS

The liquid concentrate FT SLAM / FT JN 1010 with 6% concentration proved to be successful in controlling and extinguishing N-Heptane fires in agreement with the specific paragraphs of EN 1568-3:2008.
The Fire extinguishing performance is Class I and the burn-back level is A using potable water.



P.B. Reijman B.Sc.
Project Leader Special Testing



R.D. Scheepe B.Sc.
Manager Testing

APPENDIX A: PICTURES



Photograph A1: pre-burn phase test fire



Photograph A2: extinguishing phase test fire



Photograph A3: 90% extinguished test fire



Photograph A4: burn-back test

FOAM TEST RESULTS

TYPE OF FOAM: FILM FORMING FLUOROPROTEIN FOAM (FFFP)
DATE OF TEST: 4 OCT 2017

APPENDIX A

S/NO.	NAME OF TENDERER	PRODUCT'S NAME	SPECIFICATIONS PHYSICAL PROPERTIES		ICAO FIRE TESTS		COST EFFECTIVENESS		
			EXPANSION	25% DRAINAGE	EXTINCTION	25% BURN BACK	QTY USED TO EXTINGUISH	COST PER LITRE	COST TO EXTINGUISH
			RATIO	TIME (MIN)	TIME (SEC)	TIME (MIN)	FIRE*		FIRE**
			>5.0	>3.0	<60	>5.0	(LITRES)	(\$)	(\$)
1.	Fire Terminator	Fire Terminator 6% FFFP	6.84: 1	3min 22sec	50sec	14min 06 sec	NA	NA	NA

Notes:

- **

Based on 6% foam content in solution used
- >

Greater than
- <

Less than
- ()

Unsatisfactory
- Size of tray: 4.5m²
- Discharge rate: 11.4 l/min
- Application rate: 2.5 l/min/m²
- *

Quantity used to extinguish fire = extinction time (min) x 11.4 l/min (discharge rate) x 6%
- **

Cost to extinguish fire = quantity used to extinguish fire x cost per litre

Conducted By: FSSGT Hashim Suni

Certified By: SAE0 Valmond Lai

Date4 Oct 2017

Date4 Oct 2017

TEST REPORT: 7191120859-CHM15-EO

Date: 31 AUG 2015 Tel: +65 68851291 Fax: +65 67 784301
Client's Ref: DBS#000185 Email: huayi.chen@tuv-sud-psb.sg

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.

SUBJECT

Elemental analysis of one liquid sample.

CLIENT

FIRE TERMINATOR INTERNATIONAL PRIVATE LIMITED
3015 Ubi Road 1
#04-266
Singapore 408704
Attn: Mr Judah Jay

SAMPLE SUBMISSION / TEST DATE

18 AUG 2015 / 19 AUG 2015

DESCRIPTION OF SAMPLE

One sachet described as "JN 1010 Fire Extinguisher Liquid" was tested:



TEST METHOD

- 1) Micro-wave digestion
- 2) Elements by Inductively Coupled Plasma – Mass Spectrometry.



Laboratory:
TÜV SÜD PSB Pte. Ltd.
No.1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
Email: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667X

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TÜV SÜD Asia Pacific Pte. Ltd.
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The Franklin, Singapore 118223
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31 AUG 2015



RESULTS

Sample Marked / Specific compounds prohibited include toxic heavy metals such as:	"FIRE TERMINATOR"	SINGAPORE GREEN LABELLING SCHEME CERTIFICATION GUIDE [Category: Fire Extinguishers] Toxic Heavy Metals Maximum Allowable Limits (mg/L)
Cadmium, Cd	< 0.001	≤ 0.003
Copper, Cu	3.9	≤ 2.0
Lead, Pb	< 0.01	≤ 0.01
Mercury, Hg	< 0.002	≤ 0.006
Zinc, Zn	1.0	≤ 3.0

Note: Lowest detection limit for Cd = 0.001mg/L, Pb = 0.01mg/L and Hg = 0.002mg/L

Remarks:

The above test results related to the samples as received

MS ELSIE OW
TECHNICAL EXECUTIVE

DR CHEN HUAYI
ASSISTANT VICE PRESIDENT
ELEMENTAL / ENVIRONMENTAL ANALYSIS
CHEMICAL & MATERIALS

Test Report: 7191120859-CHM15-EO
31 AUG 2015



Please note that this Report is issued under the following terms :

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July 2011





ANALYTICAL LABORATORIES (SINGAPORE) PTE. LTD

Analytical Chemists; Environmental and Materials Testing
No. 8 Kaki Bukit Place, Singapore 416186 Tel: 6746 0886 Fax: 6746 3830 Email: admin@analabs.com.sg
CO. REG NO: 197302347G GST REG NO: M2-0017430-5

REPORT

Lab No : AC/HS/1716/18
Company Name : Fire Terminator International Pte. Ltd
Date Received : 12/03/2018 Date Reported: 20/03/2018
Sample Description : One sample of Transparent-red Liquid
Date Tested: 13/03/2018-20/03/2018

The sample consisted of one plastic bottle of transparent-red liquid marked:

FT SLAM / FT JN1010

On analysis, the following result was obtained: -

Test Item(s)	Test Method	Result, ppm (w/w)
Perfluorooctane sulfonates (PFOS- Acid, Metal Salt, Amide)	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	Not detected
Perfluorooctanoic acid (PFOA) (CAS No.: 335-67-1)		Not detected

Remarks: 1) In weight/weight (w/w) terms, 1ppm = 1mg/kg = 1µg/g.
2) The reporting limits for PFOS and PFOA are 10ppm(w/w) each.
3) LC/MS – Liquid Chromatography / Mass Spectrometry

MAY THU HTET
CHEMIST

CHIOK KIAN SOON
DEPUTY MANAGER
ANALYTICAL LABORATORIES (S) PTE. LTD.

Fire Terminator International Pte. Ltd
Blk.3015, Ubi Road 1, #04-266
Singapore 408704.

/ch

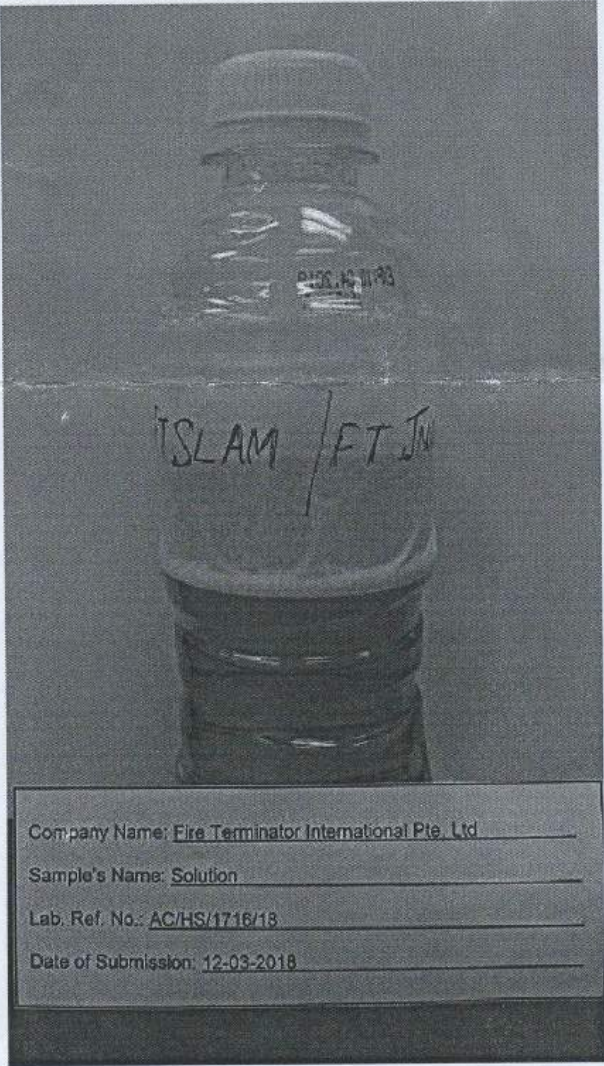
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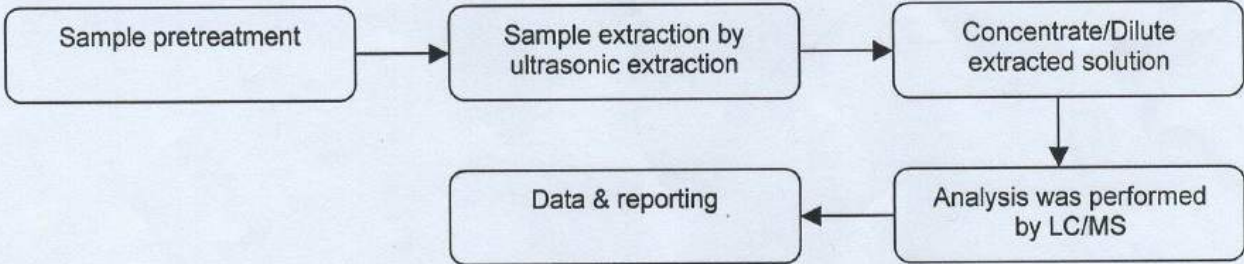
Analytical Laboratories (Singapore) Pte Ltd
Analytical Chemists; Environmental and Materials Testing

AC/HS/1716/18

Digital Recording of sample




Attachment: Analysis Flowchart of PFOS and PFOA



Note:
The above flowchart presents a generalized pathway from sample preparation to analysis. The procedures may vary depending on the various types of material submitted.

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TEST REPORT NO: IA18-13597A

Dec.12,2018

Page: 1 of 2

Applicant: UL INDIA PVT LTD

Test Date: May.16 - 21,2018

Address: 3RD FLOOR, KALYANI PLATINA, EPIP PHASE 2, WHITEFIELD, BANGALORE - 560066

Date in: May.16 2018

Modified Date: /

Revised Date: Dec. 12 2018

Sample Description: LIQUID SAMPLE (SAMPLE RECEIVED IN GOOD CONDITION)

Color: RED

Style No./Model: FT JN1010 / FT SLAM

Quantity: 100.000 Litres

Flex project no. 4788215869

Item Description: FOAM LIQUID CONCENTRATE

Batch: 7102113

Manufactured month: September. 2017

Sample Information:

Sample ID	Description	Equivalent Code / Color
001	LIQUID SAMPLE	RED

Test	Sample ID
PFOS AND PFOA	001
Note:	P = Pass ; F = Fail ; NC = No Comment (See Result) ; NA = Not Applicable ; ** = test result(s) will be added later

Note:

⚡ TEST(S) WAS (WERE) PERFORMED ACCORDING TO CLIENT PERFORMANCE STANDARDS.

TEST PERFORMED AS PER CUSTOMER REQUEST.

Note: Report No.-IA18-13597A released December 12, 2018 supersedes and must be used in place of the initial report no IA18-13597 released May 21, 2018, as detection limit has been changed and PASS/FAIL status has been updated as per customer request.


FOR AND ON BEHALF OF
UL QUALITY ASSURANCE PVT. LTD


VIVEK SHARMA - LABORATORY OPERATIONS MANAGER

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Office Plot no. A-12, Sector-34, Infocity
Phase-1, Gurugram, Haryana – 122001, India
Phone: +91-1244698100, Fax: +91-1244698110
E-mail: ul.indiacrs@ul.com , www.ul.com
PAN No.: AACCT5349L
GST No: 06AACCT5349L1Z0



TEST REPORT NO: IA18-13597A

Dec.12,2018


Page: 2 of 2

(01) PFOS and PFOA (Solvent extraction and detection by LCMSMS)

Detection Limit: 850 ppb

Sample	Result (ppb)	Requirement (ppb)	
001	RED COLOR	PFOS	Not Detected
		PFOA	Not Detected
1. PFOA (CAS NO. 335-67-1), 2. PFOS (CAS NO. 2795-39-3)			

SAMPLE PHOTO



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Office Plot no. A-12, Sector-34, Infocity
Phase-1, Gurugram, Haryana – 122001, India
Phone: +91-1244698100, Fax: +91-1244698110
E-mail: ul.indiacrs@ul.com , www.ul.com
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SERTIFIKAT PERSETUJUAN TIPE
Type Approval Certificate

No. 17.17.SP228

No. Persetujuan : 17TA169

No. approval

Tanggal persetujuan : 19 Nopember 2016

Date of approval

Dengan ini dinyatakan bahwa produk dibawah ini telah memenuhi dan disetujui
This is to certify that the following products has been complied and approved

berdasarkan persyaratan dari Peraturan dan/atau Standard yang tercantum dibawah ini
in accordance with requirements of the Rules and / or Standards listed below

Produk : GREEN SOLUTION FOR FIRE EXTINGUISHER
Product

Pembuat : FIRE TERMINATOR INTERNATIONAL PTE., LTD.
Manufacturer 3015 Ubi Road 1 #04-226, Singapore 408704

Tipe produk : FT
Type designation

Standard persetujuan :
Approval standards

BKI Rules for Approval of Manufacture and Service Suppliers, Part Vol. XI
ISO 15371:2009

Sertifikat ini tetap berlaku hingga tanggal yang ditetapkan di bawah ini menyediakan pengawasan berkala
This certificate remains valid until the date set below provided that periodical surveillances

dilakukan tepat waktu dan setiap perubahan atau modifikasi pada produk diberitahukan ke BKI.
are carried out on time and any alterations or modifications to the approved product notified to BKI

Sertifikat ini berlaku sampai dengan : 19 Nopember 2020
This certificate is valid until

Jakarta, 27 February 2017

a.n. Direksi
Direktur Klasifikasi
o.b. Board of Director
Director of Classification
Capt. Iman Satria Utama

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This certificate is issued to replace Certificate No. 5.16.SP228 which is no longer valid due to alteration on product name.

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Should the specified Rules or Standards be amended during the validity of this certificate, the product is to be reappraised prior to it being placed on board vessels to which the amended Rules or Standards apply.

LOCAL: FOAM FIRE EXTINGUISHERS ARE BEING PHASED OUT



NEA/HS/6.6

15 Mar 2024

To: Industry Stakeholders

Dear Sir/Madam,

PHASING OUT OF FIRE-FIGHTING FOAMS CONTAINING PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CHEMICALS LISTED UNDER THE STOCKHOLM CONVENTION

Singapore is a Party to the Stockholm Convention, which aims to eliminate and/or restrict production and use of Persistent Organic Pollutants (POPs). Three Per- and Polyfluoroalkyl Substances (PFAS) chemicals are listed in the Stockholm Convention, with time-limited exemptions for usage in fire-fighting foams for Perfluorooctanoic acid (PFOA), its salts and related compounds and Perfluorooctane sulfonic acid (PFOS), its salts and related compounds. The exemptions under the Stockholm Convention will expire in Dec 2025. There is no exemption under the Stockholm Convention for usage of Perfluorohexane sulfonic acid (PFHxS), its salts and related compounds in fire-fighting foams.

2 Therefore, with effect from **1 Jan 2026**, Singapore will phase out the import and use of fire-fighting foams containing PFOA and PFOS, including their salts and related compounds. Companies are allowed to continue using their fire-fighting foams after 1 Jan 2026 if the concentrations of the trace contaminants within the foams are below the respective threshold limits as shown.

INTERNATIONAL: FOAM FIRE EXTINGUISHERS ARE BEING PHASED OUT

Foam Fire Extinguishers Are Being Phased Out: What You Need To Know

24 January 2024

In a major change to fire safety and prevention practices for businesses across the UK, it is expected that Aqueous Film Forming Foam (AFFF) fire extinguishers are set to be phased out in the UK. Legislation slated for the current parliament is expected to prohibit the manufacture and sale of these extinguishers before 2026.

The anticipated ban is part of an ongoing phase-out of PFOA (Perfluorooctanoic Acid) from firefighting products, a potentially harmful chemical found in AFFF, among other products. Since January 2023, the use of extinguishing foam has been prohibited for fire suppression purposes *if all released products cannot be contained* – a stipulation that severely limits the use of such fire extinguishers in most commercial fires. This follows a similar ban across the EU that came into force at the same time.

Going back further, extinguishers using PFOA should have been removed from service by the end of 2022, unless it was known beyond doubt that the device had been subject to proper containment safeguards.



“{This solution} is the future of firefighting.”

“The fact that it’s green, my firefighters are going to be safe. My firefighters are going to come home and and it's not toxic to them...I think FT is the best product right now in the world.”

Edgardo Grajales - Director, Volunteer Fire Services of Florida State Firefighter



“absolutely 100% the answer to all our issues. This is the solution to our problem and the answer to the question of what we are going to do now because we can’t use the other foam that causes cancer!”

“We have let it sit there, we let all of the foam go away, and there’s no visible foam left on top of the fuel surface and after 3.5 hours, the fuel will still not ignite, which is an amazing attribute. Normally with regular foams, you have to apply and reapply every time the foam bubbles go down. This product is even not necessary to even have a foam blanket. The product goes into the fuel. It does exactly what it says... deactivates the fuel’s ability to burn.”

Robert Amick - Executive Director FSFA (Florida State Firefighters Association)



“you’re going to use less foam and that’s a cross-savings through agencies because foam is not cheap!”

“It suppresses the fire very quickly. It will also suppress the vapours so what was impressive is the fact that it wouldn’t reignite... it put fire out in a short period of time, but at the same time, it also stopped the vapours. We came back a couple of times to try to reignite it even when the foam blanket was dissipated by the wind, it still would not reignite! ...

John McMahon - Retired Assistant Chief of Operations Florida State (48 years in the fire service)

CONTACT US

DRAKAROS GLOBAL PTE LTD



+65 96698953



kane@drakaros.global



17 Duku Road, Singapore 429167



https://www.instagram.com/the_fireterminator/

Company UEN : 20247550K