PRODUCT SHEET

IFP UNILIGHT AGFFF TYPE 3/6^{C6}

AR AFFF (SELF-HEALING)

Alcohol Resistant Aqueous Film Forming Foam Concentrate

DESCRIPTION

IFP UNILIGHT AGFFF TYPE 3/6^{C6}, AR-AFFF (SELF-HEALING), commonly known as Alcohol Resistant Aqueous Film Forming Foam Concentrate, is specially formulated non-toxic, viscous foam liquid concentrate, for use in hydrocarbon fires as well as polar solvent fire. The foam concentrate contains special type of fluorochemical surfactant (with C6 technology), hydrocarbon surfactant, solvent, stabilizer, biocide and polysaccharides. It produces aqueous film on hydrocarbon fuel to prevent the fuels vapors come in contact with air and forms a cohesive and regenerative polymeric barrier floats over the alcohol preventing the foam bubble for mixing with polar solvents. IFP UNILIGHT AGFFF TYPE 3/6^{C6} do not contains any PFOS or PFOA.

PROPERTIES

Appearance	Light Orange Viscous Liquid
pH	7.0 - 8.0
Specific Gravity	1.00 to 1.03 gm/ml
Viscosity	Non-newtonian
Spreading Co-efficient	More than 3.5
Sludge Contents (% V/V)	Nil
Pour Point	(-)2°C*

*Freeze protection as per request

APPLICATIONS

IFP UNILIGHT AGFFF TYPE 3/6^{C6} is intended for use on Class B hydrocarbon fuels such as gasoline, kerosene, diesel etc. at a proportioning rate of 3% and on polar fuels such as alcohols, aldehydes, ketones, ethers, esters etc. at a proportioning rate of 6% with fresh water and salt water. It is applicable with low and medium expansion discharge devices for covering and extinguishing fires of Class A and Class B. IFP UNILIGHT AGFFF TYPE 3/6^{C6} is suitable for use in special appliances like storage tanks, process areas, warehouses, loading areas, docs and other local risks involving a spilled fuel fire. It is a multipurpose foam and therefore it gives maximum protection against hazards in the fuel storage area irrespective of the type of the fuel.

PROPORTIONING

IFP UNILIGHT AGFFF TYPE 3/6^{C6} can easily be proportioned using conventional equipments

- Fixed and Portable In-line Inductors
- Balanced Pressure and In-line balanced pressure proportioning systems.
- Bladder tank proportioner.
- Around the pump inductor.
- Handline nozzles with fixed induction/ pick-up tubes.

DISCHARGE DEVICES

- Air aspirating discharge devices such as low expansion branchpipes, top pourer sets, rimseal foam pourers.
- Air aspirating and non air aspirating sprinkler heads and spray nozzles.
- Foam makers for use with Floating Roof Storage Tanks/Bund protection system.
- Non-aspirating discharge devices such as spray/fog branchpipes and nozzles, monitors. However, non-aspirated application is not recommended as the primary method of attack for major fires involved with polar fuels where a stable foam cover is essential.

STORAGE/SHELF LIFE

Shelf-life of IFP UNILIGHT AGFFF TYPE 3/6^{C6} is 10-15 years while proper storage conditions are maintained. When stored in the supplied packing and stored within the temperature range of 1.7°C - 49°C (35°F - 120°F) a shelf life of 20-25 years is expected. Freezing and thawing will have no impact on the performance.

For storing IFP UNILIGHT AGFFF TYPE 3/6^{C6}, the following materials are recommended

SS-304, SS-316, Isophthalic Polyester Resin, Epoxy Resin, High Density Polythylene.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

COMPATIBILITY

IFP UNILIGHT AGFFF TYPE 3/6[C6] is compatible with soft, hard, brakish or salt water. It can be used in combination with Dry Powder extinguishing agents either separately or as twin agent systems.

IFP UNILIGHT AGFFF TYPE 3/6[C6] shall not be mixed with other manufacturers foam concentrate except for use in emergency situations.

ENVIRONMENTAL AND TOXICOLOGICAL INFORMATION

IFP UNILIGHT AGFFF TYPE 3/6[C6] is biodegradable, low toxicity and does not contain PFOS. However, as with any substance, care should be taken to prevent discharge from entering ground water, surface water, or storm drains. It can be treated in sewage treatment systems. Since facilities vary widely by location, disposal or discharge of IFP UNILIGHT AGFFF TYPE 3/6[C6] concentrate or foam solution should be made in accordance with local government rules and regulations.

For further details see IFP UNILIGHT AGFFF TYPE 3/6[C6] Material Safety Data Sheet.

APPROVALS AND LISTING

- Underwriter's Laboratories Inc., UL Listed, as per UL 162
- Bureau of Indian Standard, BIS Marked, as per IS 4989 :2018
- Lloyd's Register type approved as per IMO MSC.1/Circ. 1312

STANDARDS

- ISO 7203-1 & 3
- EN 1568-3 & 4

STANDARD PACKING SPECIFICATION (UL Recognized Component)

Part Number	Description	Volume, m^3 (ft^3)	Weight (kg)
102030-01	Pails/Cans 20L (5.28 Gallon)	0.028 (0.99)	21.4
102030-02	Pails/Cans 30L (7.93 Gallon)	0.040 (1.40)	32.1
102030-03	Barrels 200L (52.84 Gallon)	0.318 (11.23)	211.2
102030-04	IBC Tote 1000L (264.2 Gallon)	1.386 (49.09)	1067

Contacts in Emergency : +919903914042

Integrated Fire Protection Pvt. Ltd.
60A,Pandit Madan Mohan Malabya Sarani, Kolkata - 700 020, INDIA
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SAFETY DATA SHEET (SDS)

IFP UNILIGHT AGFFF TYPE 3/6^{C6}, AR-AFFF (SELF-HEALING)

Alcohol Resistant Aqueous Film Forming Foam Liquid Concentrate

[Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, the Canadian Hazardous Products Regulations (HPR) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)]

1. IDENTIFICATION

Product Name	IFP UNILIGHT AGFFF TYPE 3/6^{C6}, AR-AFFF (SELF-HEALING) Alcohol Resistant Aqueous Film Forming Foam Concentrate
Recommended use of the chemical and restrictions on use	
Identified use	Fire Extinguishing Foam Concentrate
Restrictions on use	See Section 15
Company Identification	Integrated Fire Protection Pvt. Ltd. 60A, Pandit Madan Mohan Malabya Sarani, Kolkata-700 020, India. Phone: (91)(33)2475 5634, 2454 1061 Fax: (91)(33) 2476 1107 **E-mail:** info@integratedfire.net **Website :** www.integratedfire.net
Customer Information Number	+91 33 2454 1061
Emergency Phone Number	+919903914042

2. HAZARD IDENTIFICATION

Hazard Classification	Eye Damage/Irritation – Category 2A
Label Elements	Hazard Symbols



Signal Word: Warning

Hazard Statements	Causes eye irritation.
Precautionary Statements	Wash hands thoroughly after handling.
Prevention	Wear eye protection and face protection.
Response	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	None
Disposal	None
Other Hazards	This product contains fluoroalkyl surfactants and should be disposed of by high temperature incineration.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

MAJOR INGREDIENTS	CAS.No.	CONC. (% wt)	HEALTH CLASS
1. Fluorinated Surfactant (C_6)	Proprietary	1-5	Xi R 36, 37, 38
2. Dipropylene Glycol Monomethyl Ether	34590-94-8	10-15	Xi R 36
3. Proprietary mixture Hydrocarbon Surfactant	Propietary	10-12	Xi R 36, 37, 38
4. Biogum	11138-66-2	0.5-1	
5. Stabiliser	102-71-6	0.5-1	

4. FIRST AID MEASURES

Description of necessary first-aid measures

Skin	Remove contaminated clothing. Wash skin with ample water several times.
Eye	Flush eyes with flowing water for at least for 15 minutes. Contact doctor if irritation persists.
Ingestion	If ingested, have victim drink water and obtain medical attention immediately.
Inhalation	If patient is conscious, it is anticipated to be a minor problem. If there is breathing difficulty or cough, keep patient at rest, seated in maximum comfortable position. Call for medical attention if symptoms do not go away quickly or patient is unconscious.

Most important symptoms/effects, acute and delayed

Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Notes to Physicians

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Fire fighting measures are not applicable as the material itself is a fire extinguishing agent

Specific hazards arising from the chemical

None known

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use appropriate protective clothing. Prevent skin and eye contact.
Environmental Precautions	Prevent foam concentrate or foam solution from entering ground water, surface water, or storm water. Discharge and disposal of concentrate or foam solution should be made in accordance with federal, state, and local regulations.
Methods and materials for containment and cleaning up	Contain and absorb using appropriate inert material and transfer into suitable containers for recovery or disposal. Care should be taken to avoid slip hazard.

7. HANDLING & STORAGE

Precautions for safe handling: Avoid getting chemicals on you or in you. Wash hands after handling chemicals. Don't eat or drink while handling chemicals.

Conditions for safe storage: Maximum storage temperature should be 120°F (49°C). Store the product in original container. Storage area should be cool, dry, well-ventilated, under shade and out of direct sunlight. As much as possible, keep material from being washed into surface water.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.

Dipropylene Glycol Monomethyl Ether
ACGIH TLV: 100 ppm (606 mg/ m^3) 8hr TWA; 15 min STEL 150 ppm (909 mg/m_3); Danger of cutaneous absorption.
OSHA PEL: 100 ppm (600 mg/m^3) Danger of cutaneous absorption.

Appropriate engineering controls
Use with adequate ventilation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Individual protection measures

Respiratory Protection	Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worn. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.
Skin Protection	Gloves
Eye/Face Protection	Chemical goggles or safety glasses with side shields.
Body Protection	Normal work wear.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance/ Physical State	Liquid
Color	Light Amber
Odor	Characteristic
Odor Threshold	No data available
pH	7.0 - 8.0
Specific Gravity	1.01 - 1.02
Boiling Range/Point (°C/F)	No data available
Melting Point (°C/F)	No data available
Flash Point (°C/F)	>95°C
Vapor Pressure	No data available
Evaporation Rate (BuAc=1)	No data available
Solubility in Water	Soluble
Vapor Density (Air = 1)	Not applicable
VOC (%)	No data available
Partition coefficient (n-octanol/water)	No data available
Viscosity	No data available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	No data available
Upper explosive limit	Not applicable
Lower explosive limit	Not applicable
Flammability (solid, gas)	Not applicable

10. STABILITY & REACTIVITY

Reactivity	None
Chemical Stability	Stable
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Incompatibility with other material	Avoid use of product on burning metals, electrically energized equipment and contact with water reactive material
Hazardous decomposition product	Oxides of carbon, hydrogen fluoride, organic acids.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	Dipropylene Glycol Monomethyl Ether Oral LD50 (rat) >5000 mg/kg Dermal LD5 (rabbit) >9510 mg/kg Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration
Permissible Exposure Limit, LD50	> 4000 mg/kg body wt. of rat (oral)
Specific Target Organ Toxicity (STOT) – single exposure	Available data indicates this product is not expected to cause target organ effects after a single exposure.
Specific Target Organ Toxicity (STOT) – repeat exposure	Available data indicates this component not expected to cause target organ effects after repeated exposure.
Serious Eye damage/Irritation	Causes mild eye irritation
Skin Corrosion/Irritation	Available data indicates this product is not expected cause skin irritation.
Respiratory or Skin Sensitization	Available data indicates this product is not expected to cause skin sensitization.
Carcinogenicity	Not considered carcinogenic by NTP, IARC, and OSHA.
Germ Cell Mutagenicity	Available data indicates this product is is not expected to be mutagenic.
Reproductive Toxicity	Available data indicates this product is not expected to cause reproductive toxicity or birth defects.
Aspiration Hazard	Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity	No relevant studies identified.
Mobility in soil	No relevant studies identified.
Persistence/Degradability	No relevant studies identified.
Bioaccumulative Potential	No relevant studies identified.
Other adverse effects	No relevant studies identified.

13. DISPOSAL CONSIDERATION

Disposal Methods

This product is not a RCRA-listed waste or hazardous waste as characterized by 40 CFR 261. However, state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.

Prevent discharge foam/foam solution to waterways without treatment. Waste disposal should be made in accordance with central, state and local regulations. Waste may be incinerated or disposed of by

treatment at a permitted facility only with permission or as advised by competitive authority. High temperature incineration is required at a minimum of 1000°C with a minimum residence time of 2 seconds.

14. TRANSPORT INFORMATION

Not classified as Dangerous or Hazardous for transport under UN,IMO,ADR/RID and IATA/ICAO

15. REGULATORY INFORMATION

Label for supply	None required
UK regulatory references	Health and Safety at work Act 1974 Chemical (Hazard Information & Packaging for Supply) Regulation 1994/Amendment Regulations 1996
EC Directives	Substances Directive 67/548/EEC as amended by 69/81/EEC, 70/189/EEC, 73/146/EEC, 75/409/EEC, 79/831/EEC General Preparations Directive 88379/EEC
Statutory Instruments	Chemical (Hazard Information & Packaging for Supply) Regulation 1994 /Amendment Regulations 1996.
Approved Code of Practice	Classification and Labelling of Substances and Preparations Dangerous for Supply
Guidance Notes	Occupational Exposure Limits EH40/96
Transportation of Dangerous Goods (TDG) information	Not required as per ADR/RID/IMGD,IATA & 49 CFR

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – None

Legend

ACGIH	:	American Conference of Governmental Industrial Hygienists
CAS	:	Chemical Abstracts Service
IARC	:	International Agency for Research on Cancer
LC50	:	Lethal Concentration 50%
LD50	:	Lethal Dose 50%
DOT	:	Department of Transportation
NFPA	:	National Fire Protection Association
TDG	:	Transportation of dangerous goods.
OSHA	:	Occupational Safety and Health Administration
PEL	:	Permissible Exposure Limit
UEL	:	Upper exposure limit
LEL	:	Lower exposure limit.
STEL	:	Short Term Exposure Limit
TLV	:	Threshold Limit Value
IATA	:	International Air Transport Association

Low-expansion Foam Liquid Concentrate IFP UNILIGHT AR-AFFF Type 3/3 C6, (SELF-HEALING)

File Number: EX5308

COMPANY

INTEGRATED FIRE PROTECTION PVT LTD
60A
PANDIT MADAN MOHAN MALABYA SARANI
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LOW-EXPANSION FOAM LIQUID CONCENTRATE INFO

IFP UNILIGHT AR-AFFF Type 3/3 C6, (SELF-HEALING)
Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF)

FOAM CONCENTRATES FOR USE WITH THE FOLLOWING EQUIPMENT

Minimum Storage and Use Temperature

+35 F (1.7 C)

GENERAL

Hydrocarbon Fuels, percent

3

GENERAL

Polar Solvent Fuels, percent

3

PROPORTIONERS - PORTABLE IN-LINE INDUCTORS

Manufacturer and Model	Use Concentration, percent	Size, in.	Orifice Diameter/Setting	Inlet Pressure, psig	Length and Diameter of hose	Discharge Device Manufacturer and Model
Integrated Fire Protection, Model IFP-II-400(V)	3	2-1/2	set at 3	192-220	15 m of 63.5 mm	Integrated Fire Protection, Model IFP-LX-400

PROPORTIONERS - FIXED IN-LINE INDUCTORS

Manufacturer and Model	Use Concentration, percent	Size, in.	Orifice Diameter, in.	Inlet Pressure, psig	Back Presssure, psig
Angus Fire (UK) IND-65	3	2-1/2	0.37	107	51
Angus Fire (UK) IND-65	3	2-1/2	0.28	136	64
Angus Fire (UK) IND-65	3	2-1/2	0.28	132	57

PROPORTIONERS-BLADDER TANKS WITH CONTROLLERS

Manufacturer and Model	Use Concentration, percent	Controller Size, in.	Orifice Diameter, in.	Flow Rate, gpm
HD FIRE PROTECT PVT LTD, Models RCW-BM, -SM, and RCF-BM,-SM	3	2-1/2	0.165	42-154
HD FIRE PROTECT PVT LTD, Models RCW-B, -S, and RCF-B,-S	3	2-1/2	0.236	111-386
HD FIRE PROTECT PVT LTD, Models RCW-B, -S, and RCF-B,-S	3	3	0.366	208-808
HD FIRE PROTECT PVT LTD, Models RCW-B, -S, and RCF-B,-S	3	4	0.535	301-1600
HD FIRE PROTECT PVT LTD, Models RCW-BM, -SM, and RCF-BM,-SM	3	6	0.724	626-3226
HD FIRE PROTECT PVT LTD, Models RCW-B, -S, and RCF-B,-S	3	8	0.984	613-4575

NOZZLES

Manufacturer and Model	Size, in.	Inlet Pressure, psig	Fuel
IFP-LX-400	2-1/2	64-71	--

FIXED FOAM DISCHARGE OUTLETS

Manufacturer and Model	Fuel	Inlet Pressure, psig	Flow Range, gpm	Orifice Diameter, in.	Min Design Application Density, gpm/sq ft
Angus. TPS-80	Alcohol	64		0.90	0.13
Angus. TPS-80	Acetone	64		0.90	0.16
Angus. TPS-80	Methyl Alcohol	64		0.90	0.10
Angus. TPS-80	Methyl Ethyl Ketone	64		0.90	0.15

FIXED FOAM DISCHARGE OUTLETS

Manufacturer and Model	Fuel	Inlet Pressure, psig	Flow Range, gpm	Orifice Diameter, in.	Min Design Application Density, gpm/sq ft
Angus. TPS-80	Alcohol	64	113	0.90	0.16
Angus. TPS-80	Alcohol	64	113	0.90	0.10
Angus. TPS-80	Ethyl Alcohol	64	113	0.90	0.10

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