YUYAO LIANGYI
FIRE-FIGHTING

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YUYAO LIANGYI
FIRE-FIGHTING

FIRE-FIGHTING CHEMICAL PRODUCER

Product Strategy:
Save Lives & Protect Nature




Key Products

- Non-Fluorine Fire-fighting Agent (for A class & B class)
- Lithium Battery Fire Extinguishing Agent (Non-Fluorine)
- Wet Chemical Agent for Kitchen Fires (Non-Fluorine)

Eco-Friendly Agent

- **Non-Fluorine Fire-fighting Agent**
  (S-NOFA/B@1.5%, S-NOF@100% -35°C)
  Extinguishes Class A & B Fires and Safe for Earth
- **Lithium Battery Fire Extinguishing Agent (Non-Fluorine)**
  Bigels-V1 and Bigels-V2, stops Battery Overheating.
  A double-gel liquid that safely stops battery fires. It controls heat bursts in batteries, helping fight new energy fires.
- **Wet Chemical Agent for Kitchen Fires (Non-Fluorine)**
  CF-NOF Stops kitchen oil fires.

Safety First Products

- 3% AFFF (-6°C)
- 100% Ultra-Cold AFFF (-50°C)
  Stops Class B fire faster. Traditional & High-Efficiency Fire Extinguishing Agent.


More Amazing Products

- Fire Suppressant (Class A)
- Rust Stopper (ARU-001)
- Our Own Fluorine Mix (MF-601)

Our Chemical Agent

	Fire Fighting Chemical	Code Name	Mix Ratio
1	Fluorine-Free Foam Concentrate A	S-NOFA@1.5%	1.5%
	Fluorine-Free Foam Concentrate B	S-NOFB@1.5%	1.5%
	Fluorine-Free Foam Premixed	S-NOF@100% (-35°C)	100%
2	Wet Chemical Cooking Oil Fire Agent	CFHP-NOF@50%	30-50%
	Wet Chemical Cooking Oil Fire Agent	CF-NOF@100%	100%
3	Dual-Gel Li-Ion Battery Fire Agent	Bigels-V1@100%	100%
	3-Phase Fire Retardant for Lithium Battery	Bigels-V2@100%	100%
4	100% AFFF foam (-50°C)	S-AFFF@100%(-50°C)	100%
5	3% AFFF foam (-6°C)	S-AFFF@3%(-6°C)	3%
6	6% AR-AFFF (-20°C)	AR-AFFF@6% (-20°C)	3% or 6%
7	3% Animal Protein Foam	APF-NOF@3%	3%
8	Class A Fire Retardant	S-NOFA@3%	3%
9	Anti-Rust Agent for Fire Extinguisher	ARU-001	2%
10	Amphoteric Fluorosurfactant	MF-601	To be determined as necessary

S-NOF Series Fluorine-Free Foam Concentrate

Model number	S-NOFA@1.5%	S-NOFB@1.5%	S-NOF@100%(-35°C)
Mix Ratio	1.50%	1.50%	100%
Specific Gravity	1.22±0.1kg/L	1.01±0.1kg/L	1.21±0.1kg/L
PH at 20°C	7.0±1	8.2±1	8.5±1
Viscosity at 20°C	Pseudoplastic	Pseudoplastic	Pseudoplastic
Freezing Point	-2°C	-2°C	-35°C
Sedimentation Rate	≦0.1%	≦0.1%	≦0.1%
Surface Tension	>26mN/m	>26mN/m	>26mN/m

Features

- 100% Fluorine-Free & Eco-Friendly, eradicates PFAS risk, zero persistent pollution, biodegradable.
- Highly effective fire suppression, excellent & stable performance,versatile & efficient, personnel & equipment friendly, superior mixing & fluidity.
- Significantly reduces cleanup costs, easy post-use cleanup with no environmental concerns, simplified waste disposal.

Application Scenarios

- High-Risk Areas: Petrochemical plants, airports, offshore platforms, and other locations with stringent environmental requirements.
- Replacing Traditional Foams: Gradually replacing fluorine-containing foams (e.g., AFFF), especially suitable for sensitive environments where fluorine contamination must be avoided.

CF(HP)-NOF Series Wet Chemical Cooking Oil Fire Agent

Model number	CFHP-NOF@50%	CF-NOF@100%
Mix Ratio	30%~50%	100.00%
Specific Gravity	1.472±0.1kg/L	1.135±0.1kg/L
PH at 20°C	11±1	11±1
Appearance	Light yellow transparent liquid	Light yellow transparent liquid
Operating Temperatures	-5°C~60°C	-5°C~60°C
Surface Tension	>26mN/m	>26mN/m

Features

High Efficiency & Zero Re-ignition: Extinguishers fires effectively without re-ignition. A 3L extinguisher achieves a fire rating of up to 75F.Eco-friendly & Non-toxic: Harmless to both people and the environment, containing no PFAS (Per-and Polyfluoroalkyl Substances).Safe & Clean, Enhanced User ExperienceNo Splashing: Gentle blanketing mechanism prevents hot oil splatter, significantly enhancing operator safety.Low Corrosiveness: Non-corrosive to kitchen equipment, appliances, stainless steel surfaces, etc., protecting property.

Application Scenarios

Commercial Kitchen Environments: Restaurants, hotel and catering kitchens, corporate/institutional and school canteensFood Processing and Manufacturing: Large-scale frying production lines, bakeries and confectionery factories, edible oil refineriesPublic Institutions and Service Venues: Kitchens in hospitals and nursing homes, kitchens in large stadiums and convention centersHousehold Kitchens: Urban apartments and residential homes, open-plan kitchens.

Dual-Gel Li-Ion Battery Fire Agent

Model number	Bigels-V1 @100%
Mix Ratio	100.00%
Specific Gravity	1.02±0.1kg/L
PH at 20°C	7.5±1
Appearance	White viscous liquid
Operating Temperatures	5°C~60°C

Features

High Stability: Demonstrates superior thermodynamic and kinetic stability compared to foam-based extinguishing agents Eco-Friendly: Non-toxic, harmless, and free of PFAS (Per- and Polyfluoroalkyl substances)

Application Scenarios

Industrial Production: Lithium battery production workshops, energy storage power stations, new energy vehicle production lines Commercial Facilities: Data centers, UPS battery banks in equipment rooms, lithium battery energy storage systems in shopping malls Civilian Applications: Household energy storage batteries, electric bicycles and charging stations, portable lithium battery banks/power banks.

3-Phase Fire Retardant for Lithium Battery

Model number	Bigels-V2 @100%
Mix Ratio	100.00%
Specific Gravity	1.004±0.1kg/L
PH at 20°C	9.0±1
Appearance	Brown viscous liquid
Operating Temperatures	0°C~60°C

Features

- Stable suspension performance
- Eco-friendly, non-toxic and harmless, free of PFAS(Per- and Polyfluoroalkyl Substances)
- Highly effective isolation, strong heat absorption, and significant smoke suppression
- Long-lasting flame retardant and thermal insulation
- Storage life: 5 years

Application Scenarios

- Fixed Places: Energy storage power stations, lithium battery production and storage workshops, etc.
- Transportation Field: New energy vehicles and their charging/swapping stations, centralized parkingareas for electric bicycles, etc.
- Special Scenarios: Thanks to its superior flame retardant and environmental-friendly properties, it can also be used for fire control in special places such as forests and ancient buildings.

100% AFFF foam (-50°C)

Model number	**S-AFFF@100%(-50°C)**
Mix Ratio	100.00%
Specific Gravity	1.3±0.1kg/L
PH at 20°C	8.5±1
Appearance	Yellow to transparent liquid
Operating Temperatures	-50°C~60°C

Features

- Excellent low-temperature resistance.
- Low energy consumption; requires minimal agitation energy.
- Forms a highly mobile aqueous film that suppresses fuel vaporization.
- Dual action of the aqueous film and foam prevents re-ignition.
- Can be used in conjunction with dry powder extinguishing agents.

Application Scenarios

Designed for use in both fixed and mobile fire suppression systems. It is suitable for extinguishing Class B hydrocarbon fuel fires. However, it is not suitable for fires involving polar solvents or water-miscible fuels, such as alcohols, ketones, esters, and ethers.Its typical applications include foam/water spray deluge systems and facilities such as aircraft hangars, petroleum loading/offloading areas, and processing zones. It can also be used as a wetting agent to combat Class A fires.Can be applied through standard firefighting nozzles and water sprinkler systems that lack air-aspirating mechanisms. However, to achieve optimal foam expansion and drainage time—key performance metrics for any foam concentrate—it is recommended to use air-aspirating foam branch pipes (nozzles) and dedicated foam generating devices.

3% AFFF foam (-6°C)

Model number	**S-AFFF@3%(-6°C)**
Mix Ratio	3.00%
Specific Gravity	1.05kg/L
PH at 20°C	8.5±1
Interfacial tension	2±10% mN/m
Surface tension	17.5±10% mN/m
Appearance	Amber viscous liquid
Operating Temperatures	-1°C~60°C
Foam Expansion	7.5times
25% Drainage Time	3min

Features

- Low energy consumption
- Requires minimal agitation energy
- Forms a highly mobile aqueous film that suppresses fuel vaporization
- Excellent fluidity for rapidly overwhelming and extinguishing fires
- Dual action of the aqueous film and foam prevents re-ignition
- Can be used in conjunction with dry powder extinguishing agents
- Validity: 8 years.

Application Scenarios

Can be used at a 3% mixing ratio in fixed fire suppression systems or mobile firefighting equipment. Typical applications include foam/water spray systems and locations such as aircraft hangars, petroleum loading/offloading areas, and processing zones. It can also be used as a wetting agent to extinguish Class A fires.Can be used with standard firefighting water monitors and water sprinkler equipment that lack air-aspirating devices. However, to achieve the best foam expansion and drainage time, air-aspirating foam branches and foam-making equipment should be used for all applications.

6% AR AFFF (-20°C)

6% ARAFFF (-20°C) is a versatile, high-performance firefighting foam concentrate designed for Class B flammable liquid fires. It combines the fastextinguishing properties of conventional AFFF with excellent alcohol resistance, making it suitable for both hydrocarbon fuels and polar solvents.

Key Features

- **3% or 6% proportioning rate:** Compatible with standard foam proportioning systems.
- **Alcoholresistant gel layer:** Forms a stable, nondissolving protective film on polar solvents such as alcohols, ketones, and esters.
- **Water film sealing:** Quickly spreads a thin water film over hydrocarbon fuels (gasoline, diesel, oil) to suppress vapors and prevent reignition.
- **Lowtemperature performance:** Operates reliably down to -20°C, ideal for coldclimate and outdoor applications.
- **High stability:** Long foam life, strong heat resistance, and good selfrepairing ability.
- **Environmentally improved formulation:** Free of PFOS and PFOA.

Applications

Suitable for fire protection in:

- Oil depots, refineries, airports, and terminals
- Chemical plants, solvent warehouses, and pharmaceutical facilities
- Industrial sites with mixed hydrocarbon and polar solvent hazards

Performance Advantages

- Fast fire knockdown
- Excellent antireburn capability
- Compatible with fresh water and seawater
- Works with lowexpansion foam generators and standard firefighting equipment

Differences from 6% AR-AFFF (-20C) and Normal AFFF

Item	6% AR-AFFF (-20°C)	normal AFFF
Application	Hydrocarbons + polar solvents (alcohols, ketones, esters)	Only non-polar hydrocarbons (gasoline, diesel)
Alcohol resistance	Forms a gel film, resistant to dissolution	Easily dissolved and loses effectiveness in polar solvents
Typical fire scenarios	Chemical plants, solvent warehouses, pharmaceutical factories	Oil depots, gas stations
Formula	Formulated with alcohol-resistant polymers (polysaccharides)	Fluorocarbon / hydrocarbon surfactants

Storage temperature:	-15°C~45°C
Minimum application temperature:	-15°C
Burn-back resistance level:	ARIA
Applicable water quality:	Applicable to seawater
Specific Gravity:	1.02±0.1kg/L
PH at 20°C:	6
Freezing point:	-20°C
Surface tension:	17.6 mN/m
Interfacial tension:	2.0 mN/m
Expansion ratio:	7.5
25% drainage time:	12 min

3% Animal Protein Foam

Model number	**APF-NOF@3%**
Mix Ratio	3.00%
Specific Gravity	1.05±0.1kg/L
PH at 20°C	8.5±1
Interfacial tension	2±10% mN/m
Surface tension	17.5±10% mN/m
Appearance	A dark amber-colored viscous liquid
Operating Temperatures	-1°C~60°C

Features

- The fire extinguishing efficiency is 1/3 faster than that of traditional protein foam fire extinguishing agent, and it has strong anti-reignition ability.
- The foam has good stability and a long liquid release time.
- It is pollution-free, odorless, and does not corrode equipment.
- The storage period is 2 years.

Application Scenarios

- Petroleum and Petroleum Product Fires: Suitable for scenarios such as oil fields, oil depots, and oil transfer terminals.
- Combustible Solid Fires: Can extinguish Class A fires involving wood, paper products, cotton, hemp, etc.
- Enclosed Space Fires: Suitable for firefighting in enclosed spaces like aircraft hangars, ship cabins, and basements.

Class A Fire Retardant

Model number	**S-NOFA@3%**
Mix Ratio	3.00%
Specific Gravity	1.15±0.1kg/L
PH at 20°C	8.5±1
Freezing Point	-1°C
Appearance	Yellow to clear liquid
Operating Temperatures	0°C~60°C

Features

- Enhances water's permeability.
- The premix solution exhibits stable performance.
- Suitable for extinguishing Class A fires.
- Can be used in conjunction with compatible dry powder extinguishing agents.

Application Scenarios

- Can be used in both fixed and mobile fire suppression systems. It is primarily designed to extinguish fires involving solid combustible materials such as wood, paper, cotton, hemp, and synthetic fibers (Class A fires).
- Households: For fires involving combustible materials like wooden furniture, cotton clothing, paper, etc.
- Office Spaces: For fires involving large quantities of paper, books, wooden office equipment, etc.
- Public Spaces: For fires in locations such as shopping malls, schools, and hospitals, which often contain significant amounts of wooden fixtures, cotton/linen fabrics, and other combustible materials.
- Logistics & Warehousing: For fires caused by the accumulation of materials like cardboard boxes, wooden pallets, and packaging materials.

Anti-Rust Agent for Fire Extinguisher

Model number	ARU-001
Mix Ratio	2.00%
Specific Gravity	1.05±0.1kg/L
PH at 20°C	8.5±1
Interfacial tension	2±10% mN/m
Surface tension	17.5±10% mN/m
Foam Expansion	7.5times
Appearance	Amber viscous liquid
Operating Temperatures	-1°C~60°C

Features

- Protect metal surfaces from corrosion by forming a protective film or altering the surface state of the metal to delay the oxidation process.
- This product uses water as a diluent, offering characteristics of non-flammability, non-toxicity, and no irritatingodor. It complies with the stringent modern industrial requirements for safety and environmental protection, making it an ideal choice for the preservation of clean water systems.

Application Scenarios

This product is widely suitable for the storage rust prevention and finished product preservation of ferrous metals(such as cast iron, carbon steel, alloy steel, etc.).

Amphoteric Fluorosurfactant

Model number	MF-601
Mix Ratio	To be determined as necessary
Appearance	Clear amber liquid
Structure	Fluorosurfactant
Active Ingredient (20°C / Ambient Pressure)	⩾27%
Solvent	Water / Ether mixture
Density (g/cm³)	1.03~ 1. 18
pH	4~6
Surface Tension (mN/m)	<17.5mN/m（0.1% solution）
Solubility	Water, Glycol, Ethers, etc.
Storage	Store at 5-40°C

Features

- C6 Environmental Compliance: Enables water to form a film on hydrocarbon surfaces, fully covering the liquid fuel interface.
- EPA Compliance: Meets the U.S. Environmental Protection Agency (EPA) 2010/2015 PFOA Stewardship Program requirements.
- Low PFOA Content: Reduced to below the instrument detection limit (LOD).
- Low Freezing Point: Suitable for broader application scenarios.
- Versatility: Compatible with various firefighting foams including AFFF, AFFF/AR, and FFFP.

Application Scenarios

- Can be used in:Aqueous Film Forming Foam (AFFF), Synthetic foams, Water-based fire extinguishing agents, Fluoroprotein foam, Alcohol-resistant foam (requires compounding with fluorinated polymers or xanthan gum.)
- End-users of MF-601-based firefighting foams primarily include: Refineries, Petrochemical and chemical plants, Military, Maritime and aviation transport sectors (for Class B fire suppression).

LIFE FIRST and GREEN FUTURE

We are Fire-fighting Chemical Maker.

We are Fire Extinguishers Maker.

Fire-Fighting Full Solutions.

We Make, we Use, and we Sell.