

FEATURES

- Low pH Agent
- Proven Design
- Reliable Cartridge Operated
- Aesthetically Appealing
- UL Listed – Meets Requirements of UL 300

APPLICATION

The Ansul R-102 Restaurant Fire Suppression System is an automatic, pre-engineered, fire suppression system designed to protect the following areas associated with cooking equipment; ventilating equipment including hoods, ducts, plenums, and filters; fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers and woks.

The system is ideally suitable for use in restaurants, hospitals, nursing homes, hotels, schools, airports, and other similar facilities.

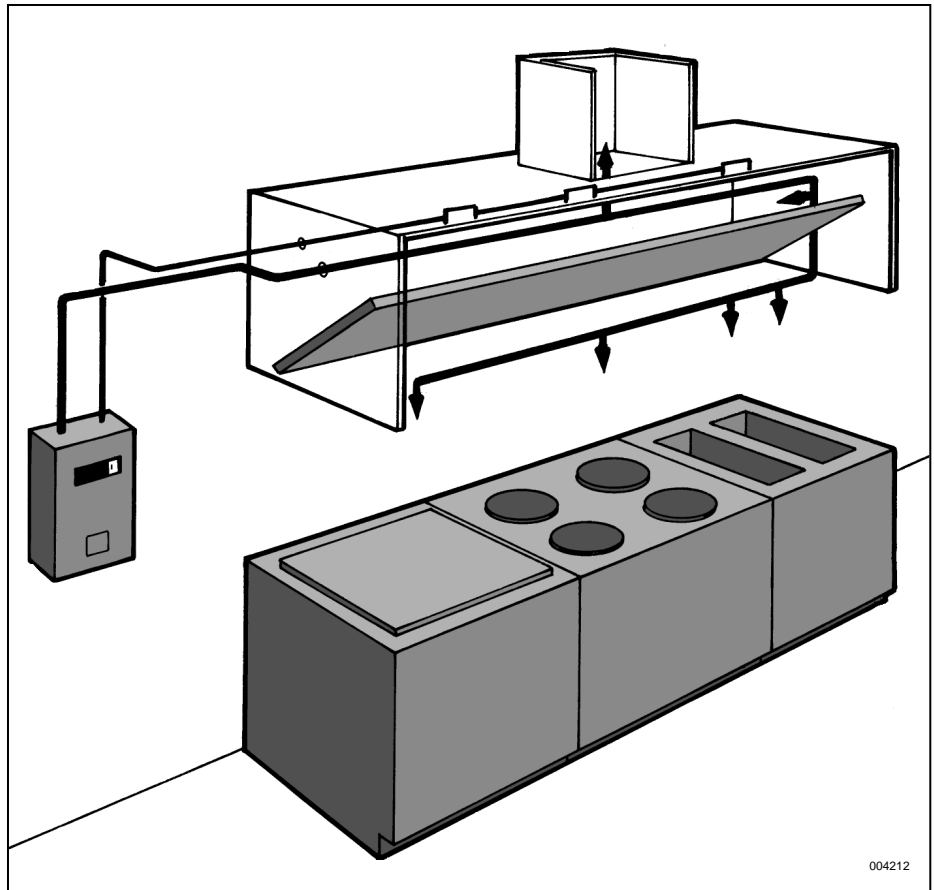
Use of the R-102 system is limited to interior applications only. The regulated release and tank assemblies must be mounted in an area where the air temperature will not fall below 32 °F (0 °C) or exceed 130 °F (54 °C). The system must be designed and installed within the guidelines of the UL Listed Design, Installation, Recharge, and Maintenance Manual.



SYSTEM DESCRIPTION

The restaurant fire suppression system is a pre-engineered, wet chemical, cartridge-operated, regulated pressure type with a fixed nozzle agent distribution network. It is listed with Underwriters Laboratories, Inc. (UL).

The system is capable of automatic detection and actuation and/or remote manual actuation. Additional equipment is available for mechanical or electrical gas line shut-off applications.



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The detection portion of the fire suppression system allows for automatic detection by means of specific alloy rated fusible links, which, when the temperature exceeds the rating of the link, the link separates, allowing the regulated release to actuate.

A system owner's guide is available containing basic information pertaining to system operation and maintenance. A detailed technical manual is also available including system description, design, installation, recharge, and maintenance procedures, plus additional equipment installation and resetting instructions.

The system is installed and serviced by authorized distributors that are trained by the manufacturer.

The basic system consists of an ANSUL AUTOMAN regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank

housed within a single enclosure. Nozzle blow-off caps, detectors, cartridges, agent, fusible links, and pulley elbows are supplied in separate packages in the quantities needed for fire suppression system arrangements.

Additional equipment includes remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical switches for automatic equipment and gas line shut-off. Accessories can be added such as alarms, warning lights, etc., to installations where required.

Tanks can be used in multiple arrangements to allow for larger hazard coverage. Each tank is limited to a listed maximum amount of flow numbers.



COMPONENT DESCRIPTION

Wet Chemical Agent – The extinguishing agent is a mixture of organic and inorganic salts designed for rapid flame knockdown and foam securement of grease related fires. It is available in plastic containers with instructions for wet chemical handling and usage.

Agent Tank – The agent tank is installed in a stainless steel enclosure or wall bracket. The tank is deep drawn carbon steel finished in red enamel.

Tanks are available in two sizes: 1.5 gallon (5.7 L) and 3.0 gallon (11.4 L). The tanks have a working pressure of 100 psi (6.9 bar), a test pressure of 300 psi (20.7 bar), and a minimum burst pressure of 600 psi (41.4 bar).

The tank includes an adaptor/tube assembly. The adaptor is chrome-plated steel with a 1/4 in. NPT female gas inlet and a 3/8 in. NPT female agent outlet. The adaptor also

contains a bursting disc seal which prevents the siphoning of agent up the pipe during extreme temperature variations.

Regulated Release Mechanism – The regulated release mechanism is a spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to one or two agent tanks, depending on the capacity of the gas cartridge used. It contains a factory installed regulator deadset at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). It has automatic actuation capabilities by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism contains a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure contains knock-outs for 1/2 in. conduit. The cover contains an opening for a visual status indicator.

It is compatible with mechanical gas shut-off devices; or, when equipped with a field or factory-installed switch, it is compatible with electric gas line or appliance shut-off devices.

Regulated Actuator Assembly – When more than two agent tanks are required, the regulated actuator is available to provide expellant gas for additional tanks. It is connected to the cartridge receiver outlet of the regulated release mechanism providing simultaneous agent discharge. It contains a regulated actuator deadset at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). The regulated actuator assembly contains a regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure contains knockouts to permit installation of the expellant gas line.

Discharge Nozzles – Each discharge nozzle is tested and listed with the R-102 system for a specific application. Nozzle tips are stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle must have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.

APPROVALS

Applicable Standards: ULI listed under EX-3470; ULC listed under CEX-747; meets requirements of NFPA 96 (Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment); NFPA 17A (Standard on Wet Chemical Extinguishing Systems).

ORDERING INFORMATION

Order all system components through your local authorized Ansul Distributor.

SPECIFICATIONS

An Ansul R-102 Fire Suppression System shall be furnished. The system shall be capable of protecting all hazard areas associated with cooking equipment.

1.0 GENERAL

1.1 References

- 1.1.1 Underwriters Laboratories, Inc. (UL)
 - 1.1.1.1 UL Standard 1254
 - 1.1.1.2 UL Standard 300
- 1.1.2 National Fire Protection Association (NFPA)
 - 1.1.2.1 NFPA 96
 - 1.1.2.2 NFPA 17A

1.2 Submittals

- 1.2.1 Submit two sets of manufacturer's data sheets
- 1.2.2 Submit two sets of piping design drawings

1.3 System Description

- 1.3.1 The system shall be an automatic fire suppression system using a wet chemical agent for grease related fires.
- 1.3.2 The system shall be capable of suppressing fires in the following areas associated with cooking equipment: ventilating equipment including hoods, ducts, plenums, and filters; fryers; griddles and range tops; upright, natural charcoal, or chain-type broilers; electric, lava rock, mesquite or gas-radiant char-broilers.
- 1.3.3 The system shall be the pre-engineered type having minimum and maximum guidelines established by the manufacturer and listed by Underwriters Laboratories, Inc. (UL).
- 1.3.4 The system shall be installed and serviced by personnel trained by the manufacturer.

1.4 Quality Control

- 1.4.1 Manufacturer: The R-102 Restaurant Fire Suppression System shall be manufactured by a company with at least thirty years experience in the design and manufacture of pre-engineered fire suppression systems. The manufacturer shall be ISO 9002 registered.
- 1.4.2 Certificates: The wet agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7.8 – 8.2, designed for flame knockdown and foam securement of grease-related fires.

1.5 Warranty, Disclaimer, and Limitations

- 1.5.1 The pre-engineered restaurant fire suppression system components shall be warranted for five years from date of delivery against defects in workmanship and material.

2.0 PRODUCT

1.6 Delivery

1.6.1 Packaging: All system components shall be securely packaged to provide protection during shipment.

1.7 Environmental Conditions

1.7.1 The R-102 system shall be capable of operating in a temperature range of 32 °F to 130 °F (0 °C to 54 °C).

2.1 Manufacturer

2.1.1 Ansul Fire Protection, One Stanton Street, Marinette, Wisconsin 54143-2542, Telephone (715) 735-7411.

2.2 Components

2.2.1 The basic system shall consist of an ANSUL AUTOMAN regulated release assembly which includes a regulated release mechanism and a wet chemical storage tank housed within a single enclosure. Nozzles, blow-off caps, detectors, cartridges, agent, fusible links, and pulley elbows shall be supplied in separate packages in the quantities needed for fire suppression system arrangements. Additional equipment shall include remote manual pull station, mechanical and electrical gas valves, pressure switches, and electrical switches for automatic equipment and gas line shut-off.

2.2.2 Wet Chemical Agent: The extinguishing agent shall be a specially formulated, aqueous solution of organic salts with a pH range between 7.8 - 8.2, designed for flame knockdown and foam securement of grease related fires.

2.2.3 Agent Tank: The agent tank shall be installed in a stainless steel enclosure or wall bracket. The tank shall be deep drawn carbon steel finished in red enamel. Tanks shall be available in two sizes; 1.5 gallon (5.7 L) and 3.0 gallon (11.4 L). The tanks shall have a working pressure of 100 psi (6.9 bar), a test pressure of 300 psi (20.7 bar), and a minimum burst pressure of 600 psi (41.4 bar). The tank shall include an adaptor/tube assembly containing a burst disc union.

2.2.4 Regulated Release Mechanism: The regulated release mechanism shall be a spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to one or two agent tanks depending on the capacity of the gas cartridge used. It shall contain a factory installed regulator deadset at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar).

It shall have the following actuation capabilities: automatic actuation by a fusible link detection system and remote manual actuation by a mechanical pull station.

The regulated release mechanism shall contain a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover. The enclosure shall contain knock-outs for 1/2 in. conduit. The cover shall contain an opening for a visual status indicator.

It shall be compatible with mechanical gas shut-off devices; or, when equipped with a field or factory-installed switch, it shall be compatible with electric gas line or appliance shut-off devices.

2.2.5 Regulated Actuator Assembly: When more than two agent tanks are required, the regulated actuator shall be available to provide expellant gas for additional tanks. It shall be connected to the cartridge receiver outlet of the regulated release mechanism providing simultaneous agent discharge. The regulator shall be deadset at 100 psi (6.9 bar) with an internal relief of approximately 145 psi (10.0 bar). The regulated actuator assembly shall contain a regulated actuator, regulator, expellant gas hose, and agent tank housed in a stainless steel enclosure with cover. The enclosure shall contain knockouts to permit installation of the expellant gas line.

2.2.6 Discharge Nozzles: Each discharge nozzle shall be tested and listed with the R-102 system for a specific application. Nozzles tips shall be stamped with the flow number designation (1/2, 1, 2, and 3). Each nozzle shall have a metal or rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up.

2.2.7 Distribution Piping: Distribution piping shall be Schedule 40 black iron, chrome-plated, or stainless steel pipe conforming to ASTM A120, A53, or A106.

2.2.8 Detectors: The detectors shall be the fusible link style designed to separate at a specific temperature.

2.2.9 Cartridges: The cartridge shall be a sealed steel pressure vessel containing either carbon dioxide or nitrogen gas. The cartridge seal shall be designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.

3.0 IMPLEMENTATION

3.1 Installation

3.1.1 The R-102 fire suppression system shall be designed, installed, inspected, maintained, and recharged in accordance with the manufacturer's listed instruction manual.

3.2 Training

3.2.1 Training shall be conducted by representatives of the manufacturer.

FEATURES

- Fast Flame Knock-Down and Securement of Grease-Related Fires
- Provides a Cooling Effect Which Further Enhances Its Ability to Prevent Reflash
- Designed for a Wide Variety of Restaurant Hazards
- Listed by Underwriters Laboratories, Inc. (UL) as Part of the R-102 Restaurant System
- Ease of Recharge and Post-Fire Cleanup
- Non-Corrosive

APPLICATION

ANSULEX Low pH Liquid Fire Suppressant is designed for use only in Ansul R-102 restaurant fire suppression systems. This "liquid" agent will combat grease-related fires as found in restaurant appliances and ventilating equipment. It should **not** be used for fires involving energized electrical hazards.

DESCRIPTION

ANSULEX Low pH Liquid Fire Suppressant is a specially-formulated, aqueous solution of organic salts. The agent is pre-mixed, eliminating the need for dilution before system charging. When used as an extinguishing agent, it will produce no toxic by-products.

AGENT PROPERTIES

Appearance Color-Coded
Fluorescent
Yellow-Green

Storage Life 12 Years

Refractive Index 1.4040

Freeze Point -40 °F (-40 °C)

Boiling Point 230 °F (110 °C)

Specific Gravity 1.32

Kinematic Viscosity 5.26 centistokes

pH 7.8 – 8.2

WARNING: Care should be taken when handling the agent. If contact is made with the eyes or skin, flush with water. If the agent is swallowed, dilute with water or milk and contact a physician.

PERFORMANCE

When used in the Ansul R-102 restaurant system, ANSULEX Low pH Liquid Fire Suppressant is extremely effective on fires in restaurant ventilating equipment – hoods and ductwork, as well as in a variety of cooking appliances – deep-fat fryers, griddles, range tops, and several types of broilers and char-broilers.

As the agent is sprayed in fine droplets (atomized) onto an appliance grease fire, it provides excellent flame knock-down, surface-cooling, and fire-securing capabilities. When the agent reacts with the hot grease, it forms a layer of foam on the surface of the fat. This soap-like blanket of foam acts as an insulator between the hot grease and the atmosphere, helping to prevent flammable vapors from escaping and reducing the chance for flame reignition.

Post-fire cleanup can be readily accomplished by flushing the area with water or steam.

Because of the composition of ANSULEX Low pH Liquid Fire Suppressant, it is compatible with metals commonly found in restaurant kitchen environments (i.e., stainless steel, aluminum, galvanized metal, mild steel, copper and brass).

APPROVALS AND LISTINGS

ANSULEX Low pH Liquid Fire Suppressant has been tested, and is listed with Underwriters Laboratories, Inc. (EX-3470) as part of the Ansul R-102 Restaurant Fire Suppression System.

ORDERING INFORMATION

ANSULEX Low pH Liquid Fire Suppressant is available in sealed containers.

Part No. 79694 1.5 gallon (5.7 L)
Part No. 79372 3.0 gallon (11.4 L)

Recharge services are available from Ansul-authorized distributors.

ANSUL is a registered trademark and ANSULEX is a trademark.

RESTAURANT FIRE SUPPRESSION SYSTEMS DATA SHEET

MECHANICAL SEALING ADAPTORS

FEATURES

- Weld-tight seal ensures structural integrity and eliminates leakage
- “Quik-Seal” version accepts threaded cut pipe or conduit
- “Compression-Seal” version is a straight-through design - eliminates cutting and threading of pipe or conduit
- Tested and listed with Underwriters Laboratories
- Solid machined steel for maximum strength and tolerance of high temperatures
- Pressure tested to 5,000 psi (34,475 kPa)
- Chrome-plated for corrosion resistance and appearance
- Available in common sizes used in installation
- Simple and inexpensive to install

DESCRIPTION

The NFPA 96 Standard establishes minimum construction requirements for the hood and duct in commercial kitchen ventilating systems. One of the requirements states that all seams and joints shall be sealed by a liquid-tight, continuous external weld or listed mechanical devices providing a liquid-tight seal.

Ansul mechanical sealing adaptors are such a mechanical means of producing weld-like, liquid-tight seals around pipe and conduit penetrations when installing fire suppression systems in hoods and ducts.

The “Quik-Seal” adaptor accepts cut pipe or conduit with threaded ends (Figure 1). The “Compression-Seal” adaptor is a straight through design requiring no cutting and threading of pipe or conduit (Figure 2).

These adaptors provide the structural integrity and stability of a welded joint without the cost or inconvenience of providing for in-field welding. Unlike torches and tanks, Ansul mechanical sealing adaptors can be easily carried and install in minutes with standard wrenches.

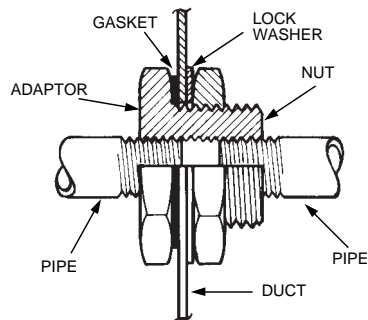


FIGURE 1

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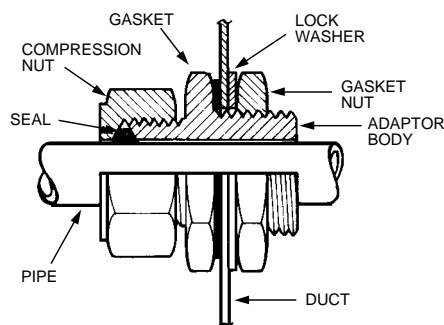


FIGURE 2

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APPLICATION

Supply and detection lines with pipe adaptor shown looking down on top of hood.



ORDERING INFORMATION

Description

- 1/4 in. “Quik-Seal” Adaptors (Package of 24)
- 3/8 in. “Quik-Seal” Adaptors (Package of 24)
- 1/2 in. “Quik-Seal” Adaptors (Package of 24)
- 3/4 in. “Quik-Seal” Adaptors (Package of 24)
- 1/4 in. “Compression-Seal” Pipe Adaptors (Package of 24)
- 3/8 in. “Compression-Seal” Pipe Adaptors (Package of 24)
- 1/2 in. “Compression-Seal” Pipe Adaptors (Package of 24)
- 1/2 in. “Compression-Seal” EMT Conduit Adaptors (Package of 24)

Part No.

- 78196
- 77285
- 77287
- 77289
- 79149
- 79151
- 79147
- 79153



004233

“QUIK-SEAL” ADAPTORS



004234

“COMPRESSION-SEAL” ADAPTORS

Surface nozzles in overhead position with adaptor.



The National Fire Protection Association (NFPA) recommends that employees be instructed in personal safety and the operation of the system. Ansul provides this owner's guide with each Restaurant Fire Suppression System.

This owner's guide has been provided to help you understand....

.....how your restaurant system works

.....your responsibilities for maintenance

.....what to do in case of fire

This owner's guide is not intended to cover all requirements detailed in the Installation, Operation, Recharge, Inspection, and Maintenance Manual, Part No. 418087. This guide is solely for the use of the end-user to become more knowledgeable with the fire suppression system and the steps necessary in the event of a fire.

Should the end-user want to find out more information concerning the Ansul Restaurant Fire Suppression System, your authorized Ansul distributor can furnish a detailed Installation, Operation, Recharge, Inspection, and Maintenance Manual.

YOUR ROLE IN FIRE PROTECTION

Your Ansul Fire Suppression System is of the highest quality. It has been carefully engineered to be reliable, manufactured to exacting standards, proven by over 30 years of service, and custom designed to protect your particular hazard.

If properly maintained, your system should provide years of protection. However, the primary objective of this guide is to provide enough basic information to help you to prevent a disastrous fire. By observing some fundamental rules, you can greatly reduce the risk of serious fire damage.

1. Keep all kitchen equipment free of grease build-up.
2. Never use flammable solvents or cleaners. Flammable residues could be left in the hazard area.
3. Operate your exhaust system whenever the appliance is pre-heating, heating, cooking or cooling. This helps to prevent excessive heat build-up which could actuate the system.
4. Never operate filter-equipped exhaust systems without the filters in place. Excessive grease may build-up in the hood and duct system. Use only U.L. listed filters.
5. Never restrict air intake passages; this can reduce the efficiency of your exhaust system.
6. Operate all UL tested grease extractors by the manufacturer's instructions to ensure effective grease removal from the hood and duct system.
7. Never tamper with the system components (i.e., detectors, nozzles, agent storage container(s) or releasing unit(s)).

8. Before you revise your kitchen equipment layout or make changes which affect the basic configuration of the protected area, contact your trained, authorized Ansul distributor for a system update evaluation. The system is made up of components tested within limitations contained in the detailed installation manual. The system designer must be consulted whenever changes are planned for the system or area of protection.
9. Do not allow anyone except an authorized Ansul distributor to perform maintenance on your Ansul system. Maintenance to your system must be performed semi-annually. It is essential that the system be maintained properly.
10. Post operating instructions in an obvious place in the kitchen and make sure your employees know what to do in case of fire.
11. Make certain that hand portable extinguishers are properly placed and compatible with the restaurant system. An authorized Ansul distributor can assist your needs.