



BAVARIA HFC-227 Engineered Systems Gas Suppression Systems



Application:

are BAVARIA HFC-227 Engineered Systems are used for total flooding application to extinguish Class A,B and C fires in accordance with NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems and UL listed design and installation manual

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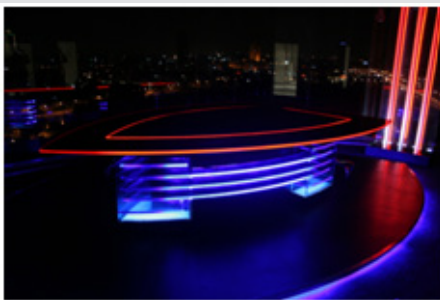
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Fire Classes:

1. Class A: Surface fires involving ordinary combustible materials such as wood, cloth, paper, rubber and many plastics
2. Class B: Fires involving flammable liquids and gases, oils, greases, tars, oil-based paints and lacquers.
3. Class C: Fires involving energized electrical equipment

Typical Examples:

1. Air Traffic Control
2. Datacenters
3. Heritage Sites
4. Machinery Spaces
5. Medical Facilities
6. Oil & Gas Facilities



Pic. No. 1: Sky News Arabia Studios



Pic. No. 2: Azhar University



Pic. No. 3: Egypt State Counsel



Pic. No. 4: Mina Garden Club



Pic. No. 5: Zagazig Hospital



Pic. No. 6: Exxon Mobil Egypt

Pictures 1 – 6 show multiple occupancies containing hazards protected by BAVARIA HFC-227 Engineered Systems

Listings and Approvals:

The BAVARIA HFC-227 Engineered Systems are listed and approved by the following agencies:

1. Underwriters Laboratories, Inc. (Listed to the requirements of UL-2166) UL-EX 26791
2. Underwriters Laboratories, Inc. (Listed to the requirements of UL-2166) UL-EX 27723



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TIME OF THE ESSENCE ?

Features:

BAVARIA HFC-227 Engineered Systems

1. Available in both low pressure system { 25 bar (360 psi) } and high pressure system { 42 bar (610 psi)} for greatest system design flexibility
2. Wide selection of cylinder sizes from 5 – 240 L (12 -590 lb)
3. High pressure systems easily accommodate remote cylinder installation, freeing up valuable space inside the protected enclosure
4. Wide operating temperature range 0°C (32°F) up to 50°C (122°F)
5. UL listed and designed in accordance to NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems



PROTECTING YOUR ENVIRONMENT ?

BAVARIA HFC-227 Extinguishing Agent

1. Patented formula which is proven to reduce products of combustion and decomposition
2. Patented formula which is proven to improve fire extinguishing performance, leading to improved safety factors
3. Suitable for use in Class A, Class B and Class C fires
4. UL component recognized agent
5. Nonconductive, non-corrosive, requiring no post discharge clean up
6. Zero ozone depletion potential and low (negligible) global warming potential



GAMBLING YOUR INVESTMENT ?

Specifications:

System Temperature Limitations

The operating temperature range of BAVARIA HFC-227 Engineered System units is 0°C (32°F) minimum to 50°C (122°F) maximum.

Use and Limitations

BAVARIA HFC-227 Engineered Systems are suitable for use in rooms, vaults, enclosed machines, containers, storage areas, and bins or wherever fixed enclosures are used. The use of BAVARIA HFC-227 Engineered Systems in total flooding systems require the protected areas to be sealed at the time of discharge. Therefore, it is important that closable openings such as doors, windows, dampers, and vents are closed before and during discharge in order that the correct agent concentration can be reached and maintained. After discharge of BAVARIA HFC-227 Extinguishing Agent, atmosphere must remain in the enclosure for a minimum of 10 minutes. This 10-minute period is known as the “soak” period. BAVARIA HFC-227 Extinguishing Agent



SPACE AT THE PREMIUM?



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BAVARIA HFC-227 Extinguishing Agent

Table No.1, BAVARIA HFC-277 Extinguishing Agent Physical Properties

Molecular Weight	170.03
Boiling Point @ 760 mm Hg, °C	-16.4
Critical Temperature, °C	101.7
Critical Pressure, kPa	2912
Critical Density, kg/m ³	621
Vapour Pressure @ 20 °C, bar	4.57
Freezing Point, °C	-131.1
Viscosity of Liquid @ 25 °C, centipoises	0.184
Solubility of Water in Agent @ 21, % By weight	0.06
Specific Heat of Liquid @ 25 °C, kJ/kg °C	1.184
Heat of Vaporization @ Boiling Point at 25 °C, kJ/kg	132.6

Table 2, BAVARIA HFC-277 Extinguishing Agent Specifications

Component	% By Weight	Tolerances
HFC 227ea	99.85	±0.1
Isopropenyl-1methyl cyclohexene	0.15	±0.05

Table No. 3, BAVARIA HFC-277 Extinguishing Agent Quality Requirements

Agent Purity, mole %, minimum	99.0
Acidity, ppm (by weight HCl equivalent), maximum	3.0
Water content, % by weight, maximum	0.001
Non-volatile residues, gram/100 ml maximum	0.05

Table No. 4, Comparison between BAVARIA HFC-277 Extinguishing Agent and Halon 1301

Environmental Factor	HFC-227	Halon 1301
Ozone Depletion Potential, CFC 11=1	0	12
Global Warming Potential, CO ₂ Kg – 100 years	3220	6900
Atmospheric Lifetime, years	33	65



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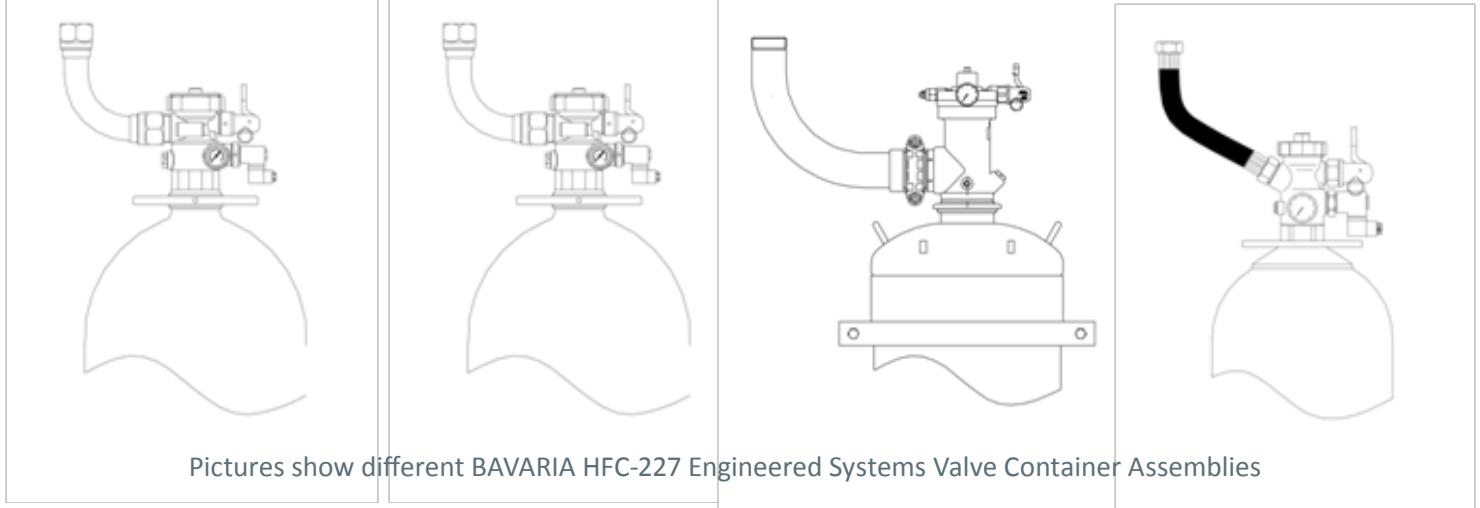
System Components:

Agent Storage Containers

BAVARIA HFC-227 seamless storage containers 42 bar system have the following capacities: 5.0, 13.4, 28.6, 40.2, 67.5, 75, 100 and 120 liters. BAVARIA HFC-227 welded storage containers for 25 bar system have the following capacities: 26.8, 40.2, 75, 120, 142, 175 and 240 liters. For more information on BAVARIA HFC-227 storage containers. When the required quantity of BAVARIA HFC-227 has been determined, the size of the container should be selected from the available range of containers considering their maximum and minimum filling weights

Discharge Valves

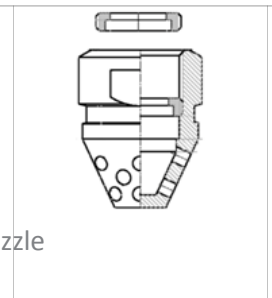
Four discharge valve models are available. All four valve models have a similar operation, accessories, release system and characteristics. The only difference is their dimensions and flow-rates.



Pictures show different BAVARIA HFC-227 Engineered Systems Valve Container Assemblies

Discharge Nozzles

The discharge nozzles, manufactured from chromed steel, are devices through which the agent is discharged and distributed within the protected enclosure. They come in different sizes and each size is available with either 360 degrees or 180 degrees dispersal patterns.



Picture shows a section in a BAVARIA HFC-227 Engineered Systems discharge nozzle

Warranty:

Period of Warranty	1 Year
Coverage of the Warranty	Against material failure and production defects
Method of Warranty Coverage	Limited to the replacement of the defected part or product after verification that the failure is covered by the scope of the warranty
Warranty Exclusions	Failures due to misuse, mishandling, or inspection or repair by an unauthorized dealer or entity

* The illustrations may show optional extras only available at extra charge. BAVARIA retains the right to alter specifications and illustrations given herein without prior notice. Specifications will only be considered communicated at placing of order.