

**PEMALL
USA**



YOUR **SAFETY** IS OUR **BUSINESS**



**PEMALL
5112**

**CLEAN AGENT
FIRE
SUPPRESSION
SYSTEM**



WWW.PEMALLUSA.COM



INTRODUCTION

The PEMALL logo features the word "PEMALL" in a bold, white, sans-serif font with a black outline. A red triangle is positioned above the letter "A".

Since the establishment of Pem System, Inc. in the year 1947, we have been trusted and committed manufacturers of fire safety systems aimed to protect human lives.

Firmly rooted for seven decades in the fire protection industry, our commitment to thrive in the areas of Research and Development led Pem System, Inc. to its acquisition by an International Company in 2010. Our innovative advancement in providing best fire protection solutions in the market gained esteemed recognition as the world's leading independent manufacturer in the field of fire protection industries.

The PEMALL USA logo consists of the words "PEMALL" and "USA" stacked vertically in a bold, blue, sans-serif font. A white star is placed to the right of the letter "A" in "USA". To the right of the text are five horizontal red stripes, and a red horizontal bar is located below the word "USA".

Today, after years of relentless hard work and drive, we launch our new trademark as "PEMALL USA", our latest innovation of superb clean agents and fire suppression systems. With the numerous fire suppression options in the market, PEMALL USA stands out among them by providing both quality and sustainable products that are ideal for your facility, business, critical assets and people.

PEMALL USA continues to develop state-of-the-art facility that produces high-quality fire suppression systems catered to meet our customers' unique needs, as well as sustaining specialization in manufacturing Clean Agents and System Components that is proven to have reliable product quality. Our products carry various international approvals such as Underwriters Laboratories (UL) listings, Factory Mutual (FM) Approval, GOST (Russian) Approvals and various European certifications or approvals to CE and TPED, which ascertain PEMALL USA's highest quality in products and systems. Each type of fire suppression solution has its own inherent benefits. We provide one-stop complete system solution where our customers can acquire products and services essential to their fire protection needs.

APPROVALS & CERTIFICATIONS



PEMALL FK-5-1-12 Clean Agent is the new generation of clean agent fire suppressant chemicals based on sustainable technology and is the only chemical agent currently available that meets the most stringent actual and future environmental standards. The clean extinguishing agent is a clear, colorless and low odor liquid perfectly suited to protect high value assets in areas that may be normally occupied, in locations where clean-up of other agents is difficult. Its ASHRAE nomenclature the way it is designated in the NFPA 2001 and ISO 14529 clean agent standards- is FK-5-1-12.

PEMALL FK-5-1-12 Clean Agent is formed from the elements like carbon, fluorine and oxygen $CF_3CF_2C(O)CF(CF_3)_2$ - dodecafluoro-2-methylpentan-3-one. The primary extinguishing mechanism of FK-5-1-12 Clean Agent is heat absorption, with a secondary chemical contribution from the thermal decomposition of FK-5-1-12 Clean Agent in the flame. PEMALL FK-5-1-12 Clean Agent leaves no residue and is safe for use in occupied spaces.



PHYSICAL & CHEMICAL CHARACTERISTICS

Chemical Name	(dodecafluoro-2-methylpentan-3-one)
ASHRAE Designation	FK-5-1-12mmy2
CAS Registry Number	756-13-8
Chemical Formula	$CF_3CF_2C(O)CF(CF_3)_2$
Molecular Weight (g/mol)	316.04
Freezing Point	-164.4°F (-108°C)
Boiling point at 760mmHg	120.2°F (49°C)
Critical Temperature	335.6°F (168.66°C)
Critical Density	3991 lbm/ft ³ (639.1 kg/m ³)
Critical Pressure	270.44 psi (1865 KPa)
Critical Volume	0.0251 ft ³ /lbm (494.5 cc/mole)
Viscosity, liquid at 77°F/ 25°C	1.27 lb/ft-hr (0.524 cP)
Solubility in water at 21.1°C/ 70°F	<0.001% (by weight)



AVAILABLE IN

(34.5 BAR)

**500 PSI
SYSTEMS**

Introducing the **PEMALL 5112** which is clean gaseous fire suppression system which is UL Listed and FM Approved - an extinguishing agent that commercially known as **PEMALL FK-5-1-12**. The system is perfectly suited to protect high value assets in locations where clean-up of other agents is problematic. Specially designed Stainless Steel storage cylinders ranging from 25 lb, 40 lb, 75 lb, 705 lb, 155 lb, 255 lb, 380 lb, 565 lb and 665 lb, 850 lb, 1100 lb & 1250 lb are used, which are pressurised to 500psi to suit the required quantity of agent, making it economically the right choice for protection of sensitive properties and assets from fire damage. Moreover, 500psi creates several added advantages which enables suppression agent cylinders be located away from protected assets, freeing up more floor space and lessens the need for personnel access and pipe sizes can be reduced with the same pipe size as with 500psi system that enables you to use longer or smaller pipes within the required 10-second discharge time of the agent.



ADVANTAGES

PEMALL 5112™ Fire Suppression System - Extinguishment capability occurs within seconds, via a combination of chemically based fire inhibition and cooling at the flame front.

Ozone Depletion Potential (ODP) - **PEMALL FK-5-1-12** fluid is a highly fluorinated ketone containing no chlorine or bromine meaning it has no effect on stratospheric ozone with ZERO ODP.

Global Warning Potential (GWP) - **PEMALL FK-5-1-12** fluid has an atmospheric lifetime of only 0.014 years.

PEMALL 5112™ Fire Suppression System are necessary to:

- ▣ Minimized space and weight requirements
- ▣ Faster installation and service
- ▣ Ambient temperature storage

Components And Their Associated Accessories:

- ▣ Cylinder Assembly
- ▣ Actuation Units
- ▣ Supervisory Switches
- ▣ Manifold Accessories.
- ▣ Distribution Nozzles
- ▣ Initiation Switches
- ▣ Instructional Signs
- ▣ Detection And Control

500 PSI (34.5 BAR) SYSTEM

THE PEMALL 5112™ High Pressure (HP) Series consists of a clean agent fire extinguishing system that utilizes UL listed and FM approved FK-5-1-12 fire protection fluid which is commercially known as PEMALL FK-5-1-12. HP Series permits higher discharge rates and is particularly adaptable to areas requiring larger quantities of agent or discharge duration is a challenge.

Assembly Model Number	Cylinder Size	Max Fill at 70 lb/ft ³	Min Fill at 30 lb/ft ³	Valve Size
F5-SS*-0025-1.0	25 LB	21 LB	11 LB	1" Valve
F5-SS*-0040-1.0	40 LB	38 LB	18 LB	1" Valve
F5-SS*-0075-1.0	75 LB	76 LB	36 LB	1" Valve
F5-SS*-0105-1.0	105 LB	108 LB	51 LB	1" Valve
F5-SS*-0155-1.5	155 LB	163 LB	77 LB	1 1/2" Valve
F5-SS*-0255-1.5	255 LB	271 LB	127 LB	1 1/2" Valve
F5-SS*-0380-2.5	380 LB	406 LB	190 LB	2 1/2" Valve
F5-SS*-0565-2.5	565 LB	601 LB	281 LB	2 1/2" Valve
F5-SS*-0665-2.5	665 LB	712 LB	333 LB	2 1/2" Valve
F5-SS-0850-3.0	850 LB	900 LB	420 LB	3" Valve
F5-SS-1100-3.0	1100 LB	1112 LB	520 LB	3" Valve
F5-SS-1250-4.0	1250 LB	1297 LB	606 LB	4" Valve

COMMON APPLICATIONS



MUSEUMS



CONTROL ROOMS



COMPUTER ROOMS



OIL & GAS REFINERY



MARINE VESSELS



DATA CENTERS



AIRPORTS



GLOBAL NETWORK

UNITED STATES OF AMERICA



UNITED ARAB EMIRATES



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