

CHEMETRON

Fire Systems™

Water Mist



A World of Protection

Why Is Water Mist A Good Choice?

Water, with its extinguishing/control capability, has been a backbone of the fire fighting industry. In recent years since the Montreal Protocol and the phase-out of halons, there has been substantial reappraisal of the approaches to fire protection, including water systems.

Water, the most natural of substances, has taken on a new form as a highly efficient ultra fine spray...called Water Mist. As a result of extensive research and development, Water Mist has been demonstrated to be a suitable Halon 1301 replacement for many commercial and industrial applications.

Chemetron Water Mist systems are the most environmentally-friendly fire protection systems. We have completed fire testing of Water Mist systems for the protection of gas turbines and high risk machinery spaces and continue to develop new applications for our systems.

New Technology From A Proven Leader

Chemetron Fire Systems is at the forefront of new water mist fire suppression technology. As the world experiences tremendous advancements in nearly every field of endeavor, Chemetron Fire Systems is committed to developing a hazard specific solution to meet the protection needs of high risk facilities. In accordance with NFPA 750, our new Water Mist system offers these outstanding benefits:

- Environmentally acceptable
- Non-toxic
- Highly efficient fire suppression capability
- Suitable for a wide range of applications
- Minimal space and weight requirements
- Skid assembly simplifies installation and service
- Optional cold weather package

People Safe. Environmentally Compatible.

Chemetron Water Mist systems provide safe fire protection for occupied spaces and critical assets; they also make good economic sense – it's the natural solution. Safe, non-toxic and environmentally acceptable, water mist extinguishes fire by cooling the flames and displacing the oxygen. Water Mist has been recognized by the U.S. EPA as an efficient, non-ozone depleting alternative agent.

What Is Water Mist Technology?

A Water Mist system is a means of fire protection utilizing a very fine water spray. Water is an outstanding physically-acting agent as a result of its exceptionally high heat absorbing capacity and latent heat of vaporization. Water Mist works to quench fire and hold damage to a minimum. It is a clean agent suitable for a range of sensitive applications and where people are involved.

The Chemetron Water Mist system is designed to extinguish fires in various hazards using a limited quantity of water, as compared to standard sprinkler systems. The water is discharged through specifically engineered nozzles that create a very fine droplet size.

Water Mist achieves fire extinguishment through a number of processes:

- Flame quenching by cooling of burning materials and potential fuel sources to below auto-ignition temperatures.
- Inerting as a result of vapor production, which excludes oxygen from the flame front. This generation of vapor dilutes the oxygen percentage in the air and combats the fire.
- Blocking radiative heat between the fire and adjoining combustibles, thus slowing down propagation of the fire.

Water Mist technology also has the potential to dilute flammable vapors with water vapor, making the mixture too lean to burn.

Reliability

It is the most demanding word for a manufacturer of fire protection systems. At Chemetron Fire Systems, reliability means that we have proven systems to protect your operation 24 hours a day...day after day.

Use of water as a fine mist from a Chemetron stand-alone system will provide efficient and reliable fire protection that:

- Requires less water than traditional sprinkler and deluge and spray systems
- Offers the ability to scrub the surrounding air, removing airborne smoke particulates
- Absorption of water soluble toxic, irritant gases, and decomposition particles created by the fire.

natural





V E R S A T I L E

With a Chemetron Water Mist system you are assured of fast, efficient and environmentally safe fire protection.

Worldwide Applications

Chemetron Fire Systems, with a single-source responsibility for fire suppression and support, continues to invest and renew research and development to meet changing requirements in industry around the globe.

Oil and Gas Industry: Process plants, production modules, gas turbines, indoor transformers, other rotating machinery, gantry protection, flare snuffing, spray curtains.

Power Generation: Gas and steam turbines, generator sets, fuel handling units, transformers, oilers, switch gear rooms.

Manufacturing: Process pumps and mixers, spray booths, welding areas, bulk conveyors, automotive industry and engine test cells, liquid hydrocarbon and flammable chemical storage.

Shipboard and Marine: Machine rooms, bilges and escape corridors.

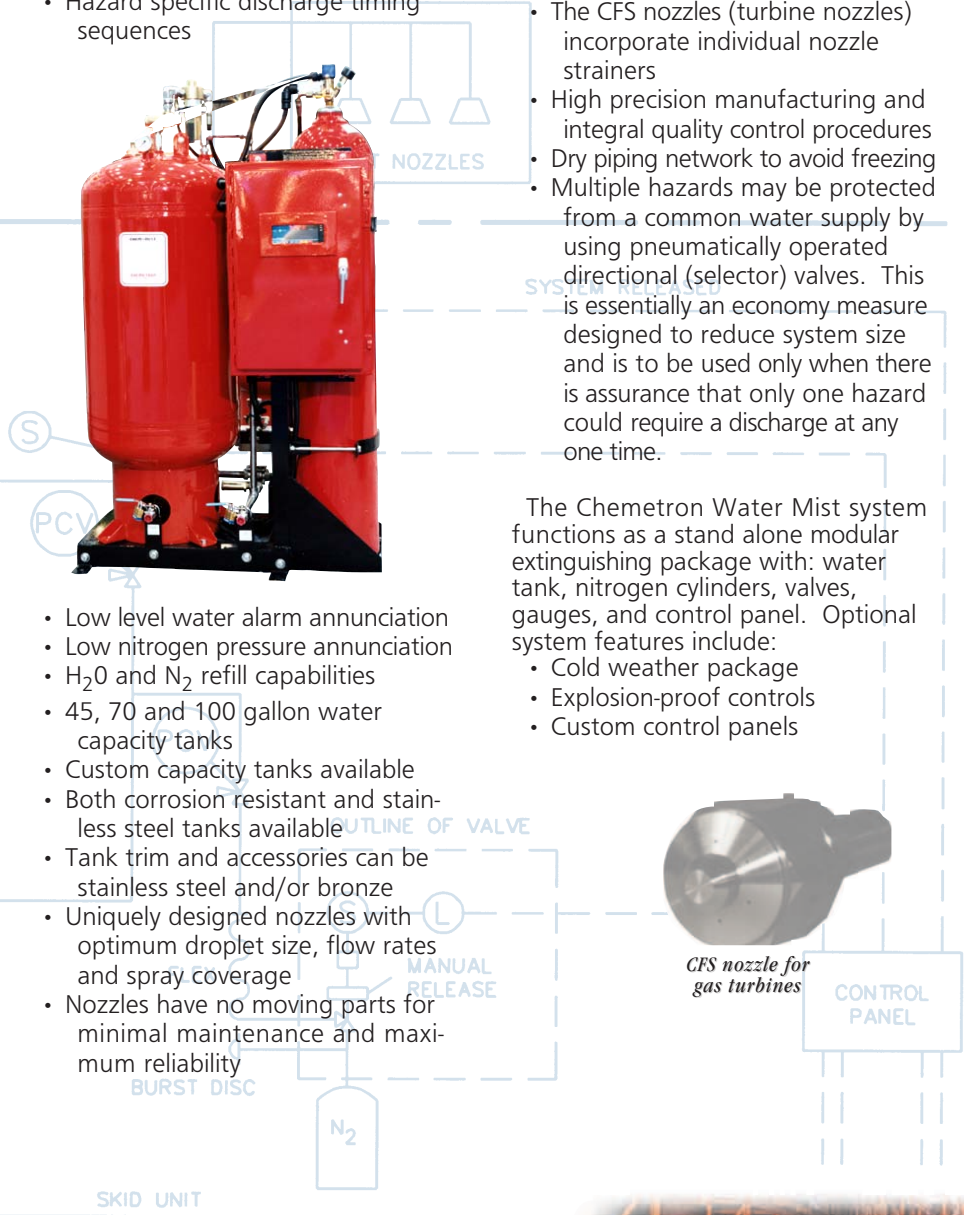
Industrial: Flammable liquids and flare snuffing.

System Features

The Chemetron Water Mist system is manufactured with maximum design features:

- Manual and automatic operation
- Hazard specific discharge timing sequences

- 100 - 120 micron mean droplet size
- Single fluid atomization
- 350 psi (24 bar) operating nozzle pressure
- Strainers are provided in the main discharge piping
- The CFS nozzles (turbine nozzles) incorporate individual nozzle strainers
- High precision manufacturing and integral quality control procedures
- Dry piping network to avoid freezing
- Multiple hazards may be protected from a common water supply by using pneumatically operated directional (selector) valves. This is essentially an economy measure designed to reduce system size and is to be used only when there is assurance that only one hazard could require a discharge at any one time.



- Low level water alarm annunciation
- Low nitrogen pressure annunciation
- H₂O and N₂ refill capabilities
- 45, 70 and 100 gallon water capacity tanks
- Custom capacity tanks available
- Both corrosion resistant and stainless steel tanks available
- Tank trim and accessories can be stainless steel and/or bronze
- Uniquely designed nozzles with optimum droplet size, flow rates and spray coverage
- Nozzles have no moving parts for minimal maintenance and maximum reliability

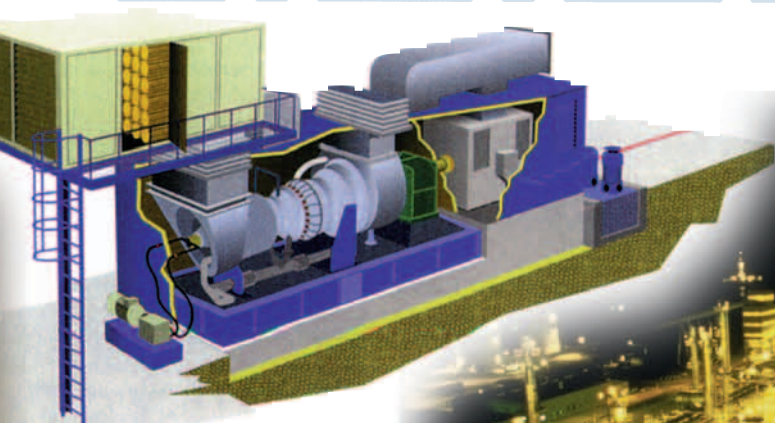
The Chemetron Water Mist system functions as a stand alone modular extinguishing package with: water tank, nitrogen cylinders, valves, gauges, and control panel. Optional system features include:

- Cold weather package
- Explosion-proof controls
- Custom control panels



CFS nozzle for gas turbines

CONTROL PANEL



More Experience. More Applications Worldwide.

Water Supply And System Piping

To maintain system integrity, NFPA 750 states:

- The water supply for a water mist system shall be taken from a source that is equivalent in quality to a potable source with respect to particulate and dissolved solids, or from a source of natural seawater.
- To minimize corrosion, all system piping shall be stainless steel or copper.

The Chemetron Integrated System

Chemetron Water Mist Fire Suppression systems work hand-in-hand with state-of-the-art control and detection components to identify and extinguish fires. Our integrated systems consist of four basic components and associated accessories:

• **Storage and valve components**

Consist of water tank, nitrogen cylinders, valve assemblies, piping, and discharge nozzles.

• **Control Panel**

The panel is the brains of the system and is used to monitor the detection and accessories.

• **Detection, alarm devices, and accessories**

These external devices act as the eyes and voice of the system as they give audible or visual signals.

• **Trim**

This system component consists of warning signs, hoses, connection fittings, pressure gauge, solenoid valve, and the actuator required to manually operate the cylinder valve. There are three types of actuation: automatic, manual, and remote electric manual.

Enclosure Design Considerations

Chemetron has been very successful in extinguishing fires in hazard enclosures with both natural and/or forced ventilation. However, NFPA 750 and good fire protection practices require that all doors and openings be automatically closed and forced ventilation systems shut down upon fire detection.

How Does Water Mist Differ From A Sprinkler System?

Water is the only element that a Water Mist system has in common with an automatic sprinkler system. The design technology involved is significantly different.

The design of sprinkler systems and NFPA 15 type spray systems is based on providing a specific water density over designated surface areas to suppress a fire, primarily by heat reduction. Water Mist system design takes into consideration both the volume and the probable fire dynamics of the hazard to determine the number of nozzles and nozzle flow rates.

When compared to the water demand required for sprinkler systems, the amount of water used for a Water Mist system is significantly less.



The Chemetron Difference

With more experience and more applications, Chemetron provides a full range of hardware, design, specification, installation and support services worldwide. Thousands of companies around the globe have the confidence to protect their businesses with Chemetron integrated fire systems.

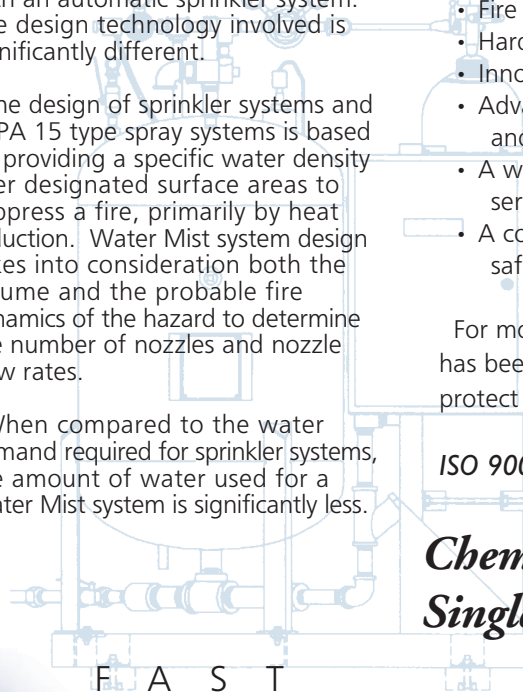
Chemetron is your single source solution for special hazards fire suppression systems by integrating:

- Fire hazard evaluations
- Hardware
- Innovative computer software
- Advanced engineering, technical and service support
- A worldwide distribution and service network
- A commitment to environmental safety

For more than 60 years, Chemetron has been creating the systems that protect your future.

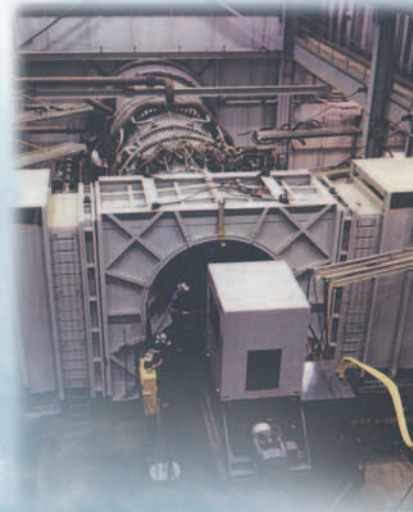
ISO 9002 Certified.

Chemetron. Your Single Source Solution.

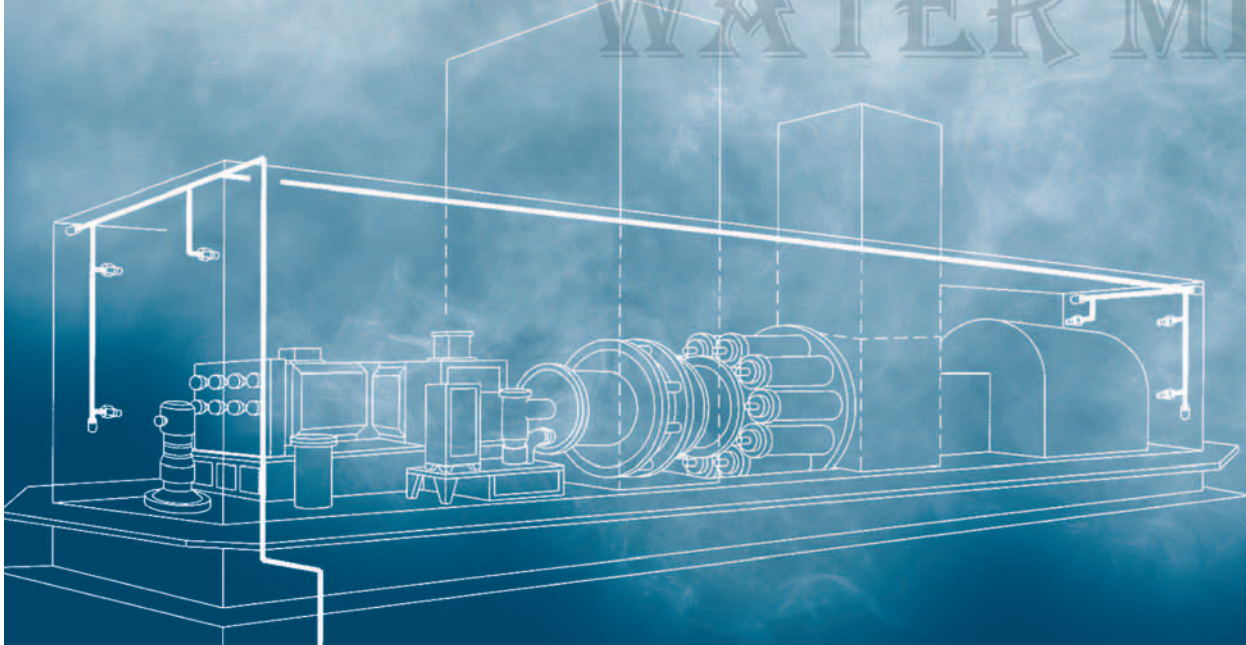


FRONT ASSEMBLY





WATER MIST





A World of Protection

Worldwide Applications

Water Mist

- Oil and Gas Industry
 - Process Plants
 - Production Modules
 - Gas Turbines
 - Indoor Transformers/Rotating Machinery
 - Gantry Protection
 - Flare Snuffing
 - Spray Curtains
- Power Generation
 - Gas and Steam Turbines
 - Generator Sets
 - Fuel Handling Units
 - Transformers
 - Oilers
 - Switch Gear Rooms
- Manufacturing
 - Process Pumps and Mixers
 - Spray Booths
 - Welding Areas
 - Bulk Conveyors
 - Automotive Industry/Engine Test Cells
 - Liquid Hydrocarbon and Flammable Chemical Storage
- Shipboard and Marine
 - Machine Rooms
 - Bilges and Escape Corridors
- Industrial
 - Flammable Liquids
 - Flare Snuffing

CO₂

- Power Generation
 - Base Load Plants
 - Co-generation & Combined Cycle Plants
 - Power Peaking Units
 - Upgrading Existing Plants: w/
 - Coal Conversions
 - Coal Storage/Handling/Pulverizing
- Cement Plant/Blast Furnace
 - Indirect Coal Firing Systems
- Metals Production and Processing
 - Electric Furnaces
 - Continuous Casters
 - Rolling Mills (Steel & Aluminum)
 - Coating Lines
- Printing
 - Newspaper Production
 - Periodical Printing
 - Packaging
- Automotive
 - Assembly: Paint Application, Mixing & Storage
 - Parts: Machining, Heat Treating
- Electronics Operations
 - Computer Areas
 - Automated Information Storage Systems

- Electronics/Computer Production
 - Wet Benches
 - Wave Soldering Machines
- Food Processing
- Research Facilities
 - Test Facilities
 - Anechoic Chambers
- Shipboard (Marine) Systems
- Automated Storage and Retrieval Facilities

FM-200®

- Telecommunication Facilities
- Computer Operations
- Control Rooms
- Shipboard (Marine) Systems
- Rare Book Libraries
- Universities and Museums
- Art Galleries
- Record & Storage Facilities
- Petrochemical Installations
- Pharmaceutical & Medical Facilities
- Electronics & Data Processing Equipment

CHEMETRON

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Fire Systems™

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Chemetron. Your Single Source Solution